

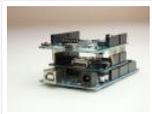


HOME	ARDUINO PROJECTS	PDF ARDUINO PROJECTS	ARDUINO ONLINE COURSES	TUTORIALS	BLOG	NEWS & UPDATES	CONTACT US
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Advanced View Arduino Projects List

List of Projects using arduino with advance view:

1. [SPI Interfaces using Arduino](#)



Update (6/7/2012) – I've had to disable comments on this post, because it is being targeted by spam bots for some reason. Please use the contact page if you have a question about this topic. [box type="note" color=" #202020 " bg=" #ffbb00 " font="verdana" fontsize="14" radius="20..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects](#)

2. [Awesome button, and then some. usnig arduino](#)



Many of you have probably seen the Awesome button done by Matt Richardson of Make Magazine. If not here is his video which was very well done and was the inspiration of my project. I liked the idea of having a button to press for..... Listed under: [LED Projects](#)

3. [Secret Knock Detecting Door Lock using Arduino](#)



Protect your secret hideout from intruders with a lock that will only open when it hears the secret knock. This started out as a bit of a joke project, but turned out to be surprisingly accurate at judging knocks. If the precision is turned all..... Listed under: [Home Automation Projects, Projects, Sensor – Transducer – Detector Projects](#)

4. [The Soil Temperature Sensor using arduino](#)



You are building a soil temperature sensor. We need a waterproof thermometer that we can burry in the soil. The sensor is made up of a small circuit enclosed in a piece of heat shrink (to waterproof it). Supplies: (see the parts page) an LM335..... Listed under: [Home Automation Projects, Temperature Measurement Projects](#)

5. [Arduino RFID Card Reading](#)



Finally! It's been about 3 months since my last arduino tutorial – I've been keeping busy as usual. I've been working on this one for some time. I got the parts months ago, made an outline a few weeks ago, prototyped the circuits and wrote..... Listed under: [Projects, RFID – NFC projects](#)

6. [Arduino – One Wire Digital Temperature Sensor – DS18B20](#)



The one wire Digital Temperature Sensor – DS18B20 from Maxim (formerly Dallas) is a great chip for measuring temperature in your projects. Luckily, there is a Dallas Temperature library for the arduino which makes using this sensor very easy. The most recent version of this..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas, Temperature Measurement Projects](#)

7. [Traffic Light Stoplight LED Scarf – Safety Scarf of Righteousness using arduino](#)



Multipurpose like a traffic light, this one keeps you warm and blinks to make you more visible in the night. Stop traffic with this fun scarf worn around your neck. Repurpose a dollar-store bicycle safety flasher to embed in the scarf. Simulates the light changing..... Listed under: [LED Projects](#)

8. [Soldering an SMT MOSFET Driver with a hotplate](#)



Soldering SMD components isn't as hard as you might think. In fact it's easy. If you follow this instructables you'll soon see just what great results you can obtain at home using just a hotplate. It's not just being able to make small circuit boards..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#)

9. [3D AIR mouse | Arduino + Processing](#)



3D AIR mouse | Arduino + Processing I'm an Industrial design student, and last year as part of a course called "Technology as RAW materiel" I built this project as my final work. I work most of the time with SolidWorks, a CAD software for..... Listed under: [Arduino Programmer Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

10. [Twitter Poem Box](#)



This is a project that was inspired by Marc de Vinck's Kitty Twitty Cat Toy <http://makezine.com/22/kittytwitty/> . It incorporates an RFID reader and the BlinkM, a programable RGB LED. The lamp tweets random colored poems when it detects one of the three RFID cards which..... Listed under: [Internet – Ethernet – LAN Projects](#)

11. [BennyP's Light Contraption using arduino](#)



Introduction Disclaimer: I am not an expert in any of this. There is lots of information online regarding such designs. Although this setup worked for me, do not trust any of my calculations. Please work all this out for yourself and consult many other sources,..... Listed under: [Home Automation Project Ideas](#), [PWM Projects](#)

12. [ST7565 LCDs: Graphical LCDs](#)



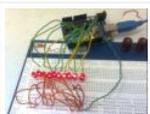
What it is... Type: Graphical (128×64) monochrome LCD with LED backlight Interface: Serial / SPI This is a good time to read the datasheet Available from: Adafruit, of course! Introduction: This mini-tutorial will go through the process of setting up a ST7565 LCD. These LCDs..... Listed under: [LCD Projects](#)

13. [Standalone Arduino chip on breadboard](#)



If you're like me, after I got my Arduino and performed a final programming on my first chip, I wanted to pull it off my Arduino Duemilanove and put it on my own circuit. This would also free up my Arduino for future projects. The problem..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

14. [Making 1×10 LED Array with Random Patterns](#)



This will teach you how to make a very simple 1×10 array of LEDs on a breadboard controlled by an Arduino Uno to make the LEDs blink and flash in 10 different patterns. Link to notebook for project:
<https://docs.google.com/document/d/1YP4p11SbdNOmM7mDn-sRjLnxGPj6o0DkrFZznVMvk/edit> Link to YouTube video of LEDs..... Listed under: [LED Projects](#)

15. [Arduino lets you play Atari 2600 and ZX Spectrum using a NES controller](#)

This instructable shows you how to use NES controller in Atari 2600 or ZX Spectrum (with Kempston Interface) with the aid of an Arduino. Step 1: Background talk I have recently acquired a couple of Atari 2600s and a bunch of joysticks. Both consoles were working..... Listed under: [Game – Entertainment Projects](#), [Projects](#)



16. [Yet Another Arduino 110v Power Controller](#)



This Instructable shows you how to build a four-gang outlet box in which each outlet is controlled via an Arduino (or any other TTL level signals). It differs from the other relay boxes in that it uses no circuit boards and has very few parts (one..... Listed under: [Projects](#), [Solar energy projects](#)

17. [Pololu Dual MC33926 Motor Driver Shield for Arduino](#)



This shield makes it easy to control two brushed DC motors with your Arduino or Arduino-compatible board. Its dual MC33926 motor drivers operate from 5 to 28 V and can deliver a continuous 3 A per motor. These great drivers also offer current-sense feedback and accept ultrasonic..... Listed under: [Motor Projects](#)

18. [Displaying Twitter feed without a PC! using Arduino](#)



There are a lot of Twitter feed readers around the Web that use Arduino AND a PC to display twits on LCD displays or whatsoever. Then, I decide it was the time to design a solution for performing the same job WITHOUT A PC, and.....

Listed under: [Internet – Ethernet – LAN Projects](#), [LCD Projects](#)

19. [Geiger counter triggered LED decorations using arduino](#)



Bored of blinky lights that blink in response to time? Make them blink with space instead! This instructable shows a quick method for connecting LED tree decorations to a Geiger counter via arduino, so that the lights blink between different strings each time radiation is..... Listed under: [LED Projects](#)

20. [Arduino ISP \(In System Programming\) and stand-alone circuits](#)



We use an Arduino to program other ATmega without bootloader . This technique allows you to use all flash memory for code and make boards using new ATmega, cheaper than those with bootloader. The qualities that have made the success of Arduino are undoubtedly the open-source..... Listed under: [Arduino Programmer Projects](#)

21. [Digispark RGB LED Fader](#)



Forward: This instructable was originally posted at <http://www.instructables.com/id/How-to-make-LED-Fader-using-Digispark/> My students and I developed it into this exemplar, for which they received a very good mark. Viewing the following video may leave you with a sense of too much too fast. Please continue to read this..... Listed under: [LED Projects](#)

22. [pedalSHIELD Arduino Guitar Pedal](#)



Web site: <http://www.electrosmash.com/pedalshield> Project Summary: pedalSHIELD is a programmable Arduino Open Source & Open Hardware guitar pedal made for guitarists, hackers and programmers. Users can program and share their own effects in C/C++. Full Project: pedalSHIELD is a programmable Arduino guitar pedal. It is Open..... Listed

under: [Sound – Audio Projects](#)

23. [World's Smallest Stepper Motor with Arduino and EasyDriver](#)



This little wonder of electromechanical engineering came from inside a laser diode sled of an HP CT10L Bluray drive I've opened some time ago. The device on the picture consists of several parts, all easily fitting on a dime coin: a bipolar stepper motor with..... Listed under: [Motor Projects](#)

24. [Telemetry with solar cell using an Arduino](#)



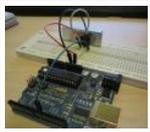
NOTE THIS PROJECT IS DONE BY A GROUP OF STUDENTS FROM SINGAPORE POLYTECHNIC. Telemetry – Solar Cells Our project is using Arduino with the ZigBee to transmit and receive data from the solar cell. Data will be shown in the LCD and the software called..... Listed under: [Battery Projects](#), [Metering – Instrument Projects](#), [Projects](#), [Solar energy projects](#)

25. [An I²C Bus powered Arduino IO Expander Board controlled via Bluetooth and Android](#)



Today we'll expand Arduino's digital resources thanks to an I2C bus equipped shield and we'll allow the management of the board via a bluetooth connection RN-42 through an Android systems. All Arduino boards feature a number of digital I/Os. For the simplest projects, such resources..... Listed under: [How To – DIY – Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)

26. [Linking an Arduino to a Radiometrix NTX2B Transmitter](#)



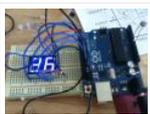
Part 1 – Test Circuit and Test Code Introduction Getting your Arduino to transmit via the radio initially may seem daunting but its actually pretty simple. Please freely substitute the word "Arduino" for any micro-controller you wish to use. The example below works for 5V..... Listed under: [Wireless Projects](#)

27. [Solar USB Charger 2.0](#)



Everyone has USB gadgets. It's pretty much a fact of life. Another fact of life is that these USB gadgets also continually run out of power when you most need them. No need to fear, solar power is here! Ditch those crazy wall adaptors, throw..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Solar energy projects](#)

28. [0 to 99 Light display](#)



this circuit will take a light reading then display a number between zero and 99 please leave constructive comments Step 1: Parts you will need [box color="#985D00" bg="#FFF8CB" font="verdana" fontsize="14" radius="20" border="#985D12" float="right" head="Major Components in Project" headbg="#FFEB70" headcolor="#985D00"] to make the 0-99..... Listed under: [LED Projects](#)

29. [PS/2/You: Go-anywhere, LED digital message board using Arduino microcontroller](#)



Combine three inexpensive LED matrix display panels, an Ardweeny microcontroller and a standard PS/2 computer keyboard into your own go-anywhere, instantly updatable 768-pixel digital message board. The code can hold up to six lines of text with a maximum of 100 characters each. Pressing a..... Listed under: [LED Projects](#)

30. [Solar Tracker Relay circuit using Arduino](#)



I've reached the point where I need to think how I'm going to control the motor & linear actuator for my solar tracker. Things to consider – Must be able to go forwards and backwards – so that makes 4 channels, 2 for each motor..... Listed under: [How To – DIY – Projects](#)

31. [BARC Jeep – An XBOX Controlled Power Wheels](#)

Make a power wheels jeep that is controlled by an XBOX controller. This particular build is using Power Wheels® Jeep® Hurricane with Monster Traction™ but should be usable across many different types of power wheels with small adjustments. I wanted to do this



project so I could..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#)

32. [Nick Smith – Magical Music Box using arduino](#)



This is my Magical Music Box which converts music into a light show. When i was daydreaming what to make for my final project, i wanted something that would make a light show for any song simply by hearing it. Materials used: 1x arduino 8x..... Listed under: [Game – Entertainment Projects](#)

33. [Interactive LED Lab Coat using Arduino](#)



This is an instructable for the Interactive LED Lab Coats, showcased at Autodesk University. Check out the videos below! The first is a demo of the colors actuated by the buttons. The second is a demo of the breathalyzer! (this will be explained later) Tools Listed under: [Home Automation Projects](#), [LED Projects](#), [Projects](#)

34. [Sleep Tracking using an Arduino](#)



Background and motivation This project was motivated by two things: my almost complete inability to get out of bed in the morning, and my fondness for recording data from routine activities and making graphs with that data. My main problem with waking up in the..... Listed under: [Home Automation Projects](#), [Metering – Instrument Projects](#), [Projects](#)

35. [Arduino Controlled RGB LED Dot Matrix Board](#)



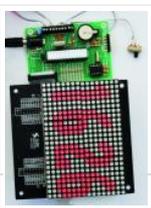
This project is a relatively straightforward and simple DIY music board. The Dot Matrix Board will allow any aged person to create their own music and beats. All you need to have is an understanding of Arduino and circuitry. Step 1: Gather Parts Needed [box..... Listed under: [LED Projects](#)

36. [5x5 rgb lpd6803-led matrix arduino controlled](#)



what: a 5*5 rgb led matrix, made with arduino and lpd6803 based leds from adafruit. with an pir sensor, it goes on if it detects movements and a ir distace sensor, 1 animation shows the distance you have from the sensor :). why: because its..... Listed under: [LED Projects](#), [Projects](#)

37. [An Open Source, hackable Digital Clock](#)



Andrew O'Malley, an amazingly creative maker, created this fanstastic Open Source Arduino-based clock that can display the time in many different ways: if not enough, one can also add his own personal animation. Compared to other clocks based on Arduino, this one has two distinctive..... Listed under: [Clock – Timer Projects](#)

38. [Tiny Wearable LED kit – 12 PWM LEDs from a reprogrammable ATtiny85](#)



This instructable covers the assembly and use of a Tiny Wearable LED kit. The kit is useable immediately but is desigend to be hackable and can be reprogrammed to your liking using an ISP programmer or Arduino board and the Arduino IDE. There are not..... Listed under: [LED Projects](#), [Projects](#), [PWM Projects](#)

39. [Infinity Mirror – Tony Stark Arc-Reactor thing using arduino](#)



I'm creating a robot, but am finding that it's better if I break the build down into smaller projects. This is one of those projects, and it seems to have a look that could be used for other things as well. Step 1: Destroy a lady's..... Listed under: [Battery Projects](#)

40. [Ultraviolet nightlight, ingredients and setup](#)

This simple instructable will show you how to make a nightlight out of a translucent container, a bottle of tonic water, an Arduino, and ultraviolet LEDs. If you've ever played with a black light, you've noticed that some substances glow brightly under these lights. In..... Listed under: [LED Projects](#)

41. [LCD & Keypad Shield Quickstart Guide using arduino](#)

The 16x2 LCD And Keypad Shield is very simple to use because it's fully compatible with the Arduino "LiquidCrystal" library. You can initialise the LCD and display messages on it with just a few lines of code, but it also gives you the flexibility to..... Listed under: [LCD Projects](#)

42. [Arduino Esplora Light Calibrator](#)

This sketch shows you how to read and calibrate the Esplora's light sensor. Because light levels vary from one location to another, you need to calibrate the sensor for each location. To do this, you read the sensor for a few seconds, and save the..... Listed under: [Development Board – Kits Project Ideas](#), [LED Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

43. [MultiMovEDIA](#)

The title "MultiMovEDIA" does not mean much – if anything – at first sight. However, looking at more carefully, we can see it is a composition of two words: "Multimedia", referring to the information content and the channels it uses (text, image, sound), and "Move",..... Listed under: [Sound – Audio Projects](#)

44. [\[Team PGH\] – Prototype I Final Report: \[Motion RC Car\] using arduino](#)

Introduction: Give a brief description of what you are trying to solve. Include a high-level overview of what you made, why you made it, what parts you used, and what it does. In today's growing technology, it seems every little electronic is becoming touch or motion sensed..... Listed under: [Car Projects](#)

45. [Python Meets the Arduino](#)

Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software. Python is our favorite programming language that allows you to integrate systems more effectively. Learn how to use Python to ... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

46. [Alarm Clock with Tetris to Prove You're Awake using Arduino](#)

This is an Arduino powered alarm clock that after hitting snooze twice the alarm will not cancel until the user has cleared 4 lines in the game Tetris. You physically turn the clock sideways, so the screen is vertical, to play Tetris. It's never fun..... Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#), [Projects](#)

47. [Arduino Mobile Processing](#)

How the mobile sketch works: The brain of the system is really on the arduino or the web page the phone requests. . . The phone just passes any data it sees back and forth. . . For the phone app to run, it needs..... Listed under: [Phone Projects](#)

48. [Localizer with SIM908 module using arduino](#)



The device is based on a GSM/GPRS module with included GPS. Its main function is to detect and communicate its own geographical position using, on the choice, the cellular phone reference system or the GPS. Its small dimensions are due to the use, for the..... Listed under: [GPS Based Projects](#), [Phone Projects](#)

49. [Lego Spybotics with Arduino](#)



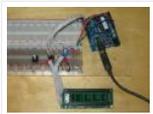
A friend gave me his old Lego Spybotics robot, however, the programming environment that goes along with it is a bit too orientated to the younger user. So why not control it using an Arduino? Step 1: Open up! In order to get this robot..... Listed under: [Home Automation Projects](#), [Robotics – Automation Projects](#)

50. [Arduino animatronics- make your awesome costumes more awesome](#)



Here's how to add lights, sound and action to your favorite Halloween project using the open source Arduino microcontroller. Arduino is easy to learn to use and it opens up a whole new world for costume builders and creature creators. If you want to learn..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

51. [Custom Large Font For 16x2 LCDs using arduino](#)



A couple of years ago i was learning to use the Ardiuno and started playing around with an Hitachi HD44780 based 16x2 LCD screen. I soon learned that the screen has 8 customizable character slots. I had found a project where someone used those slots..... Listed under: [LCD Projects](#)

52. [CARduino – Arduino-Powered, LabVIEW-Controlled Vehicle](#)



The CARduino is a remote-operated vehicle which is controlled by a controller attached to a computer running LabVIEW. The vehicle is powered by the Arduino, and can be expanded upon through the addition of sensors or other devices. Using LabVIEW, one can easily modify the..... Listed under: [Car Projects](#)

53. [Read analog data directly in Processing using arduino](#)



This instructable presents a fast an easy way to use data received from an analog sensor in Processing. You will learn to utilize the Arduino and prototype electronic boards to read meaningful data from the environment. The sensors can be affected by the light, the..... Listed under: [Arduino Programmer Projects](#)

54. [The Arduino Noise Machine](#)



Okay, okay, I know you all were wondering what I am up to now. I love synths and so, I built this. There are three things that can catch my attention: Synthesizers, Amplifiers and free. The other day (Actually it was just Thursday) I was..... Listed under: [Projects](#), [Sound – Audio Projects](#)

55. [The Soil Moisture Sensor using arduino](#)



You are building a cheap soil moisture sensor so the brain can read the amount of moisture in the soil. The version we are building is very low tech, but it is also very cheap and easy to build. It consists of a block of..... Listed under: [Home Automation Projects](#), [Temperature Measurement Project Ideas](#)

56. [Arduino theremin like musical instrument](#)



When I got my Arduino protoshield from sparkfun, I wanted to make something cool with it. And since I had seen a few Theremin projects before, and already thought about making some, I finally made one, using the Parallax PING sonar sensor. Here are some..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

57. [Mouse Control With Pushbuttons using arduino](#)



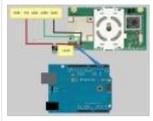
Overview In this lab, you'll build an alternative computer mouse using an Arduino Leonardo using pushbuttons to move the mouse left, right, up and down. You'll see the difference between reading a digital input continually and reading for a change of state. (toc Table of..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

58. [G Meter using arduino](#)



I have a late 80's VW and the gauge cluster has 5 dummy LED locations underneath the other warning lights. Well I was tired of the m not doing anything, so I decided to do something about it. I came up with the idea to..... Listed under: [Metering – Instrument Projects](#)

59. [Xbox 360 RF module + Arduino](#)



I was going to make a huge write-up on this, but I can't be bothered right now. I'll probably do something about it later. Until then, have an Arduino sketch. If you don't know what you're doing with it then chances are you don't have..... Listed under: [Radio Project Ideas](#), [Wireless Projects](#)

60. [Robotic Talking Turret using Arduino](#)



Here I will show you an overview on how to make a robotic talking turret, loosely based off of the turrets from the popular game, Portal. This instructable should help anyone wanting to do an animatronics project. For more detailed pictures, go to: <http://razorconcepts.net/turret.html> This..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

61. [New Textiles 2012 using arduino](#)



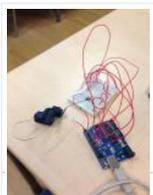
Twist Switch by ttseng Through the action of twisting, swatches of conductive fabric are folded in upon each other, completing a circuit that then turns on LEDs. On each face of stretched spandex are swatches of conductive fabric. Before choosing which swatches to designate as..... Listed under: [LED Projects](#)

62. [Demystifying 4 pin RGB LEDs \(Radio Shack 276-0028\) using arduino](#)



RGB LEDs are fairly useful in projects allowing for a wide range of color from a single unit. However they can be a pain in the neck to work with and they too often come with little or no documentation. I searched for some time..... Listed under: [LED Projects](#)

63. [Connect the arduino and make the speaker play](#)



To make your Arduino to play a melody you need these accessories. One 5 ohm speaker One Arduino uno board One Push button One 10 kohm resistor 8 leds And a lot of core wires Step 1: Connect the arduino and make the speaker play This..... Listed under: [Sound – Audio Projects](#)

64. [Team 1 Final Project Report & Video: Arduino Video Game System using arduino](#)



Introduction We built a video game system that can play either Snakes or Pong. We saw a project called "Arduino Pong" and wanted to recreate it with our own twist. Description Parts Needed: Arduino Uno Video Game Shield 2 LEDs 2 non-latching push buttons 2..... Listed under: [Game – Entertainment Projects](#)

65. [Arduino Morse Code Flaher using arduino](#)



I am a big fan of programming but I like to keep it down to 555 timer but when it comes to complex functions like flashing a LED in a certain pattern programming is necessary. One day while surfing through the I

came across something known as Morse code.I decided..... Listed under: [Arduino Programmer Projects](#)

66. [Arduino Robotic Arm](#)



In this instructable I will show you how to make a simple robotic arm controlled by 4 servos , 2 analog joysticks, and an Arduino UNO. It is very similar to my "2 Servos + Thumbstick" instructable. This tutorial is in particular to help out another..... Listed under: [Robotics – Automation Projects](#)

67. [Rear Wheel Tachometer using arduino](#)



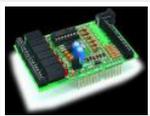
One of the goals of Movable Party is to provide an interactive experience for audiences/participants. Since power will be generated from a hub motor attached to the rear wheel of each bike (see this post), the speed of the rear wheel directly translates to the..... Listed under: [CNC Machines Project Ideas](#), [Temperature Measurement Projects](#)

68. [Time-Lapse Camera Controller using Arduino](#)



Simple digital cameras can produce remarkably good quality photos and are now cheap enough that it doesn't hurt the wallet too much to buy one with the intention of modifying it for use in a project. You may even already have an old digital camera..... Listed under: [Video – Camera – Imaging Projects](#)

69. [A useful and simple IO Shield for Arduino](#)



In order to "visually" highlight the behavior of Arduino programs you must connect a device to the I/O pins, which gives you tangible signals. Normally, if you want to check if a program changes a level of an output pin, answering a command or executing..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#)

70. [Laser cut gear clock with ChronoDot using Arduino](#)



This summer, my hackerspace LVL1 (in Louisville, Ky) got an awesome laser cutter <http://fslaser.com/40w-deluxe-hobby-laser-engraver-and-cutter>. LVL1 is an awesome community of creative folks that like to build stuff. You can always check out what we are up to at <http://www.lv1.org>. If you like instructables and making..... Listed under: [Clock – Timer Projects, Projects](#)

71. [Using an Arduino to Control or Test an SPI electronic device](#)



There are many electronic devices that use the SPI bus, or Serial Peripheral Interface bus, for communications (e.g. various sensors, LCD displays, digital potentiometers, D/A and A/D converters, wireless transmitters and receivers, audio volume controls). The devices receive data serially from a microcontroller using a..... Listed under: [Battery Projects](#)

72. [Solar Powered LED/Ultracapacitor Arduino Regulated Light](#)



This instructable primarily shows how to control the charging voltage from a solar panel to an energy storage device (capacitors in this case). I showed how to construct the light previously <http://www.instructables.com/id/Human-Powered-Light-from-my-book-Doable-Renewab/> Step 1: This solar panel can produce up to 18 volts, but my..... Listed under: [LED Projects, Projects](#)

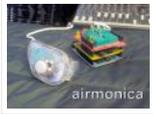
73. [Arduino – based camera trigger unit](#)



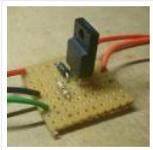
I developed the camera trigger unit in order to synchronize various events and actions during free-flight experiments with hawkmoths in the wind tunnel described in a previous post. More specifically, the goal was to trigger multiple high-speed cameras and have LEDs that indicate the exact..... Listed under: [Home Automation Project Ideas](#), [Video – Camera – Imaging Projects](#)

74. [Bouncing Multicolored LED line](#)

This is an arduino controlled project and uses leds, jumper wires, and a breadboard. This is one of my first attempts on programming arduino and I am pleased with the outcome. I'm ten years old and I just started programming 2 weeks ago. Step 1:..... Listed under: [LED Projects](#)

75. [Airmonica – a free-air musical instrument](#)

improvise + harmonize + customize The airmonica is a easy-to-learn tweakable musical instrument that you can use to perform harmonic musical ditties by accompanying a tri-tone arpeggiator. There are endless opportunities to expand the airmonica in any way that will make it your your own..... Listed under: [Sound – Audio Projects](#)

76. [Controllers and Sensors using arduino](#)

Intro The Arduino microcontroller board is able to supply a current of 40mA from its output connections. These digital outputs are fixed at 5V "ON" or 0V "OFF". This is adequate for working with LEDs but devices such as motors, solenoids, high brightness LEDs etc..... Listed under: [Motor Projects](#)

77. [Programming Arduino in C++11 — ROM dumping](#)

In this tool-assisted education video I show how to program an Arduino Atmega2560 board in C++11 to dump a ROM chip, such as a 386sx BIOS or a Famicom cartridge ROM. I also make a ZMODEM sender and a LED blinker in this video. Sorry..... Listed under: [Arduino Programmer Projects, Projects](#)

78. [Arduino Automatic Watering System For Plants Sprinkler](#)

Last month, Elecrow have left from the original office and moved to a new office. We will miss our original office where we worked so hard for more than two years, we will miss everything here, the desks, the windows, and those potted plants, that..... Listed under: [Home Automation Projects](#)

79. [The iButton garage-door opener using an Arduino](#)

I've made an iButton garagedoor opener and logger. On a Dutch (kind of) eBay (www.marktplaats.nl) I found some iButtons and readers very cheap. I had no idea what to do with them, but I bought them anyway. My garage opens with a push on a..... Listed under: [Home Automation Projects, LCD Projects, Projects](#)

80. [RFM12B – Part 1 – Hardware Overview](#)

To see how RFM12B wireless compares to other similar wireless options (e.g Xbee, XRF etc..) check out this well compiled comparison overview by Stuart Poulton: <http://blog.homelabs.org.uk/wireless-connectivity/>. Overview Made by Hope RF, re-branded by RFsolutions in the UK. Sometimes called 'Alpha RF' Low cost RF transceiver (from Rapid, Farnell,..... Listed under: [Radio Project Ideas, Wireless Projects](#)

81. [Arduino Throttle Body Synchronization Shield](#)

A common Motorcycle maintenance task is to synchronize the throttle bodies on the engine to smooth out any rough idle. This is done by monitoring the vacuum on each throttle body and using the idle screw to make the adjustment. While this sounds rather advanced,..... Listed under: [Car Projects, Projects](#)

82. [Ardusumo: an Open Source Platform for Fighting Robots using Arduino](#)



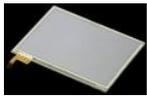
The idea ArduSumo is a universal platform to build robots on wheels that can move around avoiding obstacles using infrared sensors and follow routes marked with dark lines on a white background. We have created ArduSumo to bring young students to the world of robotics:..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

83. [BUILD YOUR OWN LASER HARP using Arduino](#)



The laser harp is a musical instrument made of light. A fan of beams shoots up from the floor into the night sky. The performer can create music by placing their hands in the beams. Not only does “breaking” the beam produce notes, but sliding..... Listed under: [Game – Entertainment Projects](#)

84. [Touch Control Panel using Arduino](#)



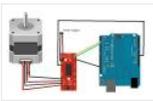
Small 4-wire resistive touchscreens are now amazingly cheap: they are produced in such enormous quantities for mobile phones, PDAs, and particularly handheld games such as the Nintendo DS that they can be bought brand new for under US\$10. Larger touchscreens are also rapidly falling in..... Listed under: [Sensor – Transducer – Detector Projects](#)

85. [Arduino + 2 Servos + Thumbstick \(joystick\) using arduino](#)



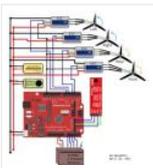
In my other 2 Arduino tutorials I have help new users to play tones and making 2 servos move with a mouse. This time I will help you move the same 2 servos with a thumbstick. And again I have surf the internet to see If there..... Listed under: [Motor Projects](#)

86. [Stepper Motor drive from Arduino](#)



Stepper Motor drive from Arduino In this tutorial we will show you how to connect a bipolar stepper motor to an Arduino Uno board. The stepper motor we are using is the Sparkfun Stepper Motor but you can use any other 4-wire bipolar stepper motor..... Listed under: [Motor Projects](#)

87. [UVic Quadcopter using arduino](#)



Hardware Controller The Arduino platform is selected for this project, mainly due to its open software and hardware nature which has resulted in availability of extensive technical information. As a result there are many tutorials and example project available for this platform. A list of..... Listed under: [Car Projects](#), [Robotics – Automation Project Ideas](#)

88. [How to: Use Arduino to Generate Glitchy Audio VGA Visuals](#)



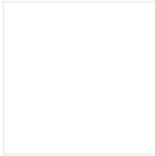
This post is a guide for people that are interested in my previous posts about dual monitor VGA hacking (see 1, 2 and 3). You will need: • A laptop or a computer with a VGA output • A breadboard (optional) and some wires or..... Listed under: [Sound – Audio Projects](#), [Video – Camera – Imaging Projects](#)

89. [Hacked Pan and Tilt Camera Mount](#)



So my sister managed to break a pan and tilt camera mount and naturally thought daddy can fix this. After sitting on my dads workshop bench for a while he had a go at it and couldn't work out how to fix it so it..... Listed under: [Video – Camera – Imaging Projects](#)

90. [Adafruit Arduino Motor Shield Build](#)



Overview The Arduino Motor Shield is based on the L298 (datasheet), which is a dual full-bridge driver designed to drive inductive loads such as relays, solenoids, DC and stepping motors. It lets you drive two DC motors with your Arduino board, controlling the speed and..... Listed under: [Motor Projects](#), [Projects](#)

91. [How to make fist pumping with LED animation using Arduino](#)



It's to make a fist pumping LED controller. What is it? Have you noticed yourself fist pumping to the music at a party or a club? That's exactly for that. You would wear a band with an accelerometer/gyro mounted. As you move your hand around..... Listed under: [LED Projects](#), [Projects](#)

92. [Developed on Hackaday: First Version of the Hardware](#)



The Hackaday writers and readers are currently working hand-in-hand on an offline password keeper, the mooltipass (click to see the project description). Next in our Developed on Hackaday series, we present the first version of our schematics. There's already been a lot of discussions going on in..... Listed under: [Security – Safety Projects](#)

93. [DIY Teagueduino](#)



What is Teagueduino? Teagueduino is an open source electronic board and interface that allows you to realize creative ideas without soldering or knowing how to code, while teaching you the ropes of programming and embedded development (like arduino). Teagueduino is designed to help you discover..... Listed under: [How To – DIY – Projects](#), [LED Projects](#)

94. [Automatic blind hooked up to existing projector screen using Arduino](#)



Hello my name is Chipsy, I'm French, reading instructables since at least 2 years, it is the first entry i make on this website. Why i made this project : I have a small homecinema system in my living room, with a projector and a..... Listed under: [Home Automation Projects](#), [Projects](#)

95. [MenZ-DECK](#)



About a year ago, we drunk beer in The-MenZ Lab. When Zagan said "I want PCDJ controller, So next project is make controller!". The project began at this time. ***MenZ-DECK featured by Maker Faire UK Blog.***
<http://www.makerfaireuk.com/maker-faire-tokyo/> (Continue with broken English) Components for make controller: Arduino..... Listed under: [Development Board – Kits Projects](#)

96. [Arduino Watch Build Instructions](#)



Update: New version out that works with Arduino 1.0 and higher! The Arduino Watch provides augmented sensing of temperature and range, 16-bit color drawing program, Breakout game, and also tells the time in your choice of digital, binary, or analog. Additional sensors, devices, and programs..... Listed under: [Clock – Timer Projects](#), [Projects](#)

97. [GSM Remote Control – GSM Module](#)



This GSM Mobile is used for our Remote Control (for example Gate Control, Temperature Control....). We use the word 'module' because, unlike what we did in our remote control projects, this time around the mobile phone is not mounted on a printed board, but rather on..... Listed under: [Phone Projects](#)

98. [Interface a rotary phone dial to an Arduino](#)

An old rotary phone can be used for a number of purposes in your Arduino projects – use it as a novel input device, or use the Arduino to interface a rotary phone to your computer. This is a very basic guide describing how to..... Listed under: [Interfacing\(USB – RS232 –](#)



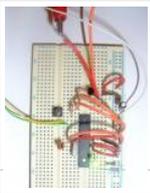
[I2c -ISP\) Projects, Phone Projects, Projects](#)

99. [Arduino Controlled Can Crusher With LCD Readout](#)



I have always wanted to do an instructable, but I never had a somewhat original idea that hasn't been done a million times, or something that had no means of building. I have some friends who recycle aluminum for money and after seeing the large bags of an unknown..... Listed under: [Home Automation Projects, LCD Projects, Projects](#)

100. [Arduino ATmega328 – Hardcore](#)



Ok, you've completed your prototype using an Arduino Uno board, perhaps using a shield or a breadboard for any additional components, but now you want to finalise your design and construct it using your own pcb. Well, that is fairly straightforward, as we have made..... Listed under: [Arduino Programmer Projects](#)

101. [Computers are Dumb](#)



Objective: Overcome your fear of computers! If you can count to two, then you can master the basics of computers. If you think computers are smarter than you, you are wrong and I will prove it. For normal people, just follow the LOG: comments. Computers..... Listed under: [RTOS – OS Projects](#)

102. [Bicycle North Indicator using Arduino](#)



Magnetoception is the ability of some animals to detect magnetic fields as a means of orienting themselves. Although humans do not seem to possess the same biological mechanisms that allow other animals to sense magnetic fields, there are still many ways that we can improve our..... Listed under: [Game – Entertainment Projects, Home Automation Projects, Projects](#)

103. [SPI interface to the FlySky/Turnigy 9x](#)



Interfacing a RC radio to a microcontroller is a bit of a pain, especially if you want a lot of channels, because you have to time each channel's output individually. An AVR only has one 16 bit timer with two compare channels, so either you..... Listed under: [Radio Projects](#)

104. [Arduino powered 7seg led display with Port Manipulation](#)



Time for something a little more advanced. Direct Port Manipulation. Normally when using Arduino software, the actual logic behind changing the values in pins is abstracted away with digitalRead and digitalWrite. Now, for most people that's just fine. But it has some limitations. For one,..... Listed under: [LED Projects, Projects](#)

105. [Arduino controlled animatronic wooden head \(reading lamp\) usnig arduino](#)



This head is a reading lamp which can be adjusted for direction of lighting, and dimmed as required. This Instructable combines Arduino programming, some simple electronics, carving with hand and power tools, mechanical control and a bit of woodworking. Apart from the Arduino and a..... Listed under: [Home Automation Projects](#)

106. [High Power RGB LED Moodlamp which syncs with Philips Hue](#)

In this instructable the main focus lies on the software which I've created – not so much on the hardware side. You needn't to use a high- power led for this, you can use every RGB- LED you like. The "High Power RGB LED Moodlamp"..... Listed under: [LED Projects](#)



107. [Buggy Wheelchair Robot using an Arduino](#)



This is a Modification of an electric wheelchair. I called it "Buggy" for two reasons. #1 My kids can still ride it around because I left the seat intact. #2 I haven't programmed anything for a long time. I plan to create "jobs" for it..... Listed under: [Projects, Robotics – Automation Projects](#)

108. [Precision Fermentation: Arduino-Controlled Crock Pot Yogurt Maker](#)



A homemade thermostat attachment for a crock pot (or other electric heating device). It can be used to precisely control the temperature of the crock pot for things like yogurt fermentation. Why Making yogurt is fun. It is also way cheaper than buying it. You..... Listed under: [Home Automation Projects](#)

109. [BLU-BOARD, control your home with blue tooth!](#)



Big thanks to the fine people at Hack-A-Day for sharing this with the world! if you'd like to donate to the project: <https://www.suprmasv.com/projects/167/blu-board> This project has been in the works for along time, three months if I reckon Correctly, but anyways, this device will allow you..... Listed under: [Development Board – Kits Projects, Home Automation Projects](#)

110. [CatBot: Automated Cat Laser using an Arduino](#)



The CatBot is an autonomous laser toy for your cat. You may say "But Joe, isn't the laser pointer the best toy for the lazy cat owner?" I'd have to say no, the CatBot takes one step further. Using two servos, an Arduino and a..... Listed under: [Projects, Robotics – Automation Projects](#)

111. [Nerd++: Controlling Dioder RGB LED Strips with Arduino, Pt. 1 – Getting Started](#)



A few weeks ago, it came to my attention that IKEA do a set of colour-changeable LED strips. I've been looking for a decent way of providing some lighting behind my computer to reduce eye-strain for a long time, and these seemed perfect: I was..... Listed under: [LED Projects](#)

112. [Arduino compatible Luna Mod Looper](#)



The Luna Mod Looper, basically lets you record a sequence using a potentiometer to control the pitch of the note, and then play it back and add affects. Ever since I saw videos of the Luna Mod being played, I wanted to build my own..... Listed under: [Projects, Sound – Audio Projects](#)

113. [Glowing Color-Changing Guitar](#)



In the kingdom of rock and roll it is important to set oneself apart. With millions of people in this world who can play the guitar, simply playing well is just not going to cut it. You need something extra to rise up as a..... Listed under: [Sound – Audio Projects](#)

114. [LED matrix using shift registers using arduino](#)



This instructable is meant to be a more complete explanation than others available online. Notably, this will provide more hardware explanation than is available in the LED Marquee instructable by led555. Goals This instructable presents the concepts involved with shift registers and high side drivers..... Listed under: [LED Projects](#)

115. [Athena: The Global Car Tracking System\(3D Images\)](#)

Bring out your 3D glasses and enjoy viewing in a novel way! I have added a new dimension to my instructable. If you do not have 3D glasses, then you can make one yourself. The following link explains how to make 3D glasses (link). Please..... Listed under: [Car Projects](#), [Sensor – Transducer – Detector Projects](#)

116. [Piano Stairs with Arduino and Raspberry Pi](#)

Who doesn't love music? These Piano Stairs are an interactive, relatively portable, musical installation that can be applied to basically any stairwell. I built them for HackPrinceton and won 2nd place in the hardware track. I've had requests to share my code and diagrams, so..... Listed under: [Sound – Audio Projects](#)

117. [Addressable Milk Bottles \(LED Lighting + Arduino\) using arduino](#)

Make PPE milk bottles into good looking LED lights, and use an Arduino to control them. This recycles a number of things, mainly the milk bottles, and uses a very low amount of power: the LEDs apparently dissipate less than 3 watts but are bright..... Listed under: [LED Projects](#)

118. [Make your own cellphone from scratch](#)

The DIY Cellphone is a working (albeit basic) cellphone that you can make yourself. It can make and receive phone calls and text messages, store names and phone numbers, display the time, and serve as an alarm clock. It connects to GSM networks (like AT&T and T-Mobile..... Listed under: [How To – DIY – Projects](#), [Phone Projects](#)

119. [LED Cube Spectrum Analyzer](#)

In this project we'll create a small add-on PCB containing the a MSGEQ7 spectrum analyzer circuit and show how it can drive the RGB LED cube kit from Freertronics. This allows the cube to display the seven bands over four horizontal planes. There is a small amount..... Listed under: [LED Projects](#)

120. [High Speed Outdoor Photography](#)

High speed photography is generally carried out in a dark room with dedicated equipment (controlled remote flash for example)... The instructable proposed here enables to make high speed photography outside (and enjoy the sun!), in less than 2 hours with some generic DIY basic tools. The principle is the following..... Listed under: [Video – Camera – Imaging Projects](#)

121. [DIY Sensors Workshop using arduino](#)

The Arduino offers the advantage that a lot of people are using it so it is usually quite easy to get help or information via the internet. The main website for the Arduino is: <http://www.arduino.cc/>. The Arduino can also be programmed to behave in many..... Listed under: [Sensor – Transducer – Detector Projects](#)

122. [Troubleshoot your car battery with ATtiny](#)

Last winter I experienced some problems with my car battery. I knew that it was about time to replace it so off I went to buy a new one. This fact reminded me of an old article about a car battery/charging system diagnostics kit I..... Listed under: [Battery Projects](#), [Car Projects](#)

123. [STEAMPUNK STEAM GAUGE, POWERED BY ARDUINO](#)



This was created to be some eye-candy for my kitchen. I wanted something unique for a special blank space on my wall, and adding movement, blinky lights and interesting mechanical "guts" made it even better. Ultimately, this project ended up requiring the following range of..... Listed under: [Metering – Instrument Projects](#), [Sensor – Transducer – Detector Projects](#)

124. [Arduino Laser Engraver](#)



I started this project because I wanted to make something that had mechanical, electrical and software components. After looking around on Instructables, I figured that an Arduino based laser engraver would be an interesting machine to make, and that the machine itself could make interesting..... Listed under: [Other Projects](#)

125. [Google Docs and the Arduino Yún](#)



Introduction This is the second in a series of tutorials examining various uses of the Arduino Yún. In this article we'll examine how your Arduino Yún can send data that it captures from the analogue and digital inputs and a real-time clock IC to an online Google..... Listed under: [Internet – Ethernet – LAN Projects](#)

126. [Multitouch Music Controller](#)



This project is an Arduino-powered infrared touchscreen / coffee-table interface that I've been using to control various music and graphics applications on my computer. This is an old project that I've recently had time to go back and document/fix up; this project is a little..... Listed under: [LCD Projects](#), [Sound – Audio Projects](#)

127. [Controlling Cubase with Arduino based MIDI](#)



A friend of mine wanted to control Cubase, his audio recording software, with a push button so that he could stop and start recordings remotely without having to go over to the computer and type on the keyboard. You may be able to do this..... Listed under: [Projects](#), [Sound – Audio Projects](#)

128. [Plugduino – Arduino based 120 Volt outlet controller](#)



give your Arduino a 120 volt kick in the pants! The Arduino is a great tool for anyone interested in learning microcontroller programming, but after blinking some LEDs, what's next? This project enables your Arduino to control real-world 120 Volt electrical appliances you have in..... Listed under: [LED Projects](#)

129. [Arduino Masterclass Part 2: Build an LED weather station using arduino](#)



Project-specific parts You'll need the standard parts (Arduino board breadboard wires pliers and so on) along with these extras: DHT11 temperature/humidity sensor 7 x 330-ohm/0.5W metal film resistors 3 x 4.7k-ohm/0.5W metal film resistors 2 x BC337 NPN transistors 2 x LTS543R or FND500 common..... Listed under: [LED Projects](#)

130. [Proximity Sensing Origami Flower using Arduino](#)



Origami is the traditional Japanese art of paper folding. In this project, with a little help from an Arduino, you can bring your origami into the 21st century and make it an interactive art! The result shown here uses Bare Conductive paint to give an..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

131. [Worms in Space Board Game](#)

Story: NASA has taken worms to the ISS on their own special capsule. There was an accident aboard the station and the worm astronauts have to navigate to the escape capsule to return to Earth. The airlock to the escape capsule has been damaged but..... Listed under: [Game – Entertainment Projects](#)



132. [FireHero: Turn Guitar Hero into an extreme sport by adding flamethrowers! using Arduino microcontroller](#)



So, long ago I had read about propane fire poofers. They're pretty cool... I mean, who doesn't love fire?! But, no matter how awesome, they could get pretty boring after a while of seeing the same large fireball. I never built one because I wanted..... Listed under: [Game – Entertainment Projects](#)

133. [How to Display Text on an HD44780 LCD with an Arduino](#)



In this article, we will go over how to connect an HD44780 LCD to an arduino in order to display any text that we want to show on the LCD. To do this, first, we must make the appropriate physical connections from the arduino board..... Listed under: [LCD Projects](#)

134. [DIY Antique Phone Doorbell using Arduino](#)



Bryan Zimmer emailed us this fantastic retro-themed DIY hack, a most timely submission as we just revisited the noir art deco-science fiction classic Dark City and we think this would have perfectly fit in the world (or in Adama's quarters on BSG). Bryan gives step-by-step..... Listed under: [Home Automation Projects](#), [How To – DIY – Projects](#), [Phone Projects](#)

135. [Arduino Touch Screen iTunes control \(ATSIC\) using arduino](#)



What I'm going to show you is how to make an iTunes control device using an Arduino and a touch screen. The iTunes Control works by reading area's of the touch screen and send a letter to the computer via the serial port, which is..... Listed under: [Phone Projects](#)

136. [Building an Arduino Robot, Part II: Programming the Arduino](#)



Welcome to the second article in the tutorial series in which I'm building a remote controlled Arduino based vehicle robot. Here is the list of articles I have published: Part I: Hardware Components Part II: Programming the Arduino (this article) Part III: Assembling the Robot..... Listed under: [Robotics – Automation Projects](#)

137. [Color changing display](#)



Custom made Multiple color display. Have you ever wanted a display that is a little larger then one you can buy? Have you ever wanted to make a display the way you wanted it? Me too! This is how I made a custom multiple color..... Listed under: [LED Projects](#)

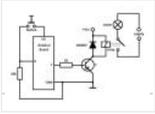
138. [DMX Ardweeny Node using Arduino](#)



I've settled on the lighting industry standard of DMX as my overall control protocol as I explore the world of blinky lights. This universal control method is electrically robust, radio transmissible, and flexible enough for my needs (not to mention the needs of major concert,..... Listed under: [Development Board – Kits Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

139. [Control a Relay with Arduino](#)

In this quick Arduino tutorial I will explain how you can control a relay using the Arduino Board, one 1K and one 10K resistors, 1 BC547 transistor, one 6V or 12V relay, one 1N4007 diode and a 12V fan. When the button is pressed the..... Listed under: [Sensor – Transducer](#)



[– Detector Projects](#)

140. [Easily control your iPod using Arduino](#)



Easily control your iPod with Arduino using serial commands. This instructable includes the schematic, the code and some extra info; everything you need to make this work. USB, battery or wall power supply powered. Step 1: What you need Parts: 5x 1K ohm resistors 2x 1M..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Phone Projects](#), [Projects](#)

141. [Make an Arduino timer](#)



Hi, so me and my pal are setting up so we can make PCB's. We are currently making a UV exposure box (possibly another instructable) and for this box, we needed a timer, so this is what we have done so far, and what we..... Listed under: [Clock – Timer Projects](#), [Projects](#)

142. [Easy 4x6 LED Matrix, Arduino!](#)



In this inst'able, I will show you how to create your very own 4x6 LED matrix as well as show you how to write code for it! There is an animation creator program in step 4! Here is one ANIMATION to get you excited about the project! ***Wave..... Listed under: [LED Projects](#), [Projects](#)

143. [Pulse Width Modulation : PWM using Arduino](#)



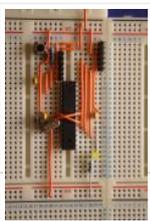
Pulse Width Modulation or PWM is a method of Digital to Analog Conversion. It helps in delivering analog average voltage using digital pulses of variable pulse width. By controlling the on time and off time, we can generate an analog average voltage using the digital..... Listed under: [PWM Projects](#)

144. [Robot arm from a desk lamp.\(IKEA Tertial hack\)](#)



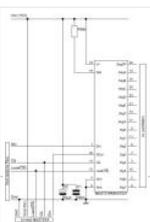
This project answers to a need I had: a third hand that holds a camera while I perform a test and takes photos/videos (useful when you're stuck at the lab late at night, and suddenly need a photographer). The downside to a robotic arm was..... Listed under: [Robotics – Automation Projects](#)

145. [Breadboard Arduino](#)



Received a couple of nice big bread boards for Christmas and decided that one of them needed an arduino to use with it. After some thought I decided that the best option was to build the required parts of an Arduino circuit direct on the..... Listed under: [Development Board – Kits Projects](#)

146. [The MAX7219 and MAX7221 Led drivers](#)



These two integrated circuits from Maxim are for driving either 64 individual Led's, or up to 8 digits of 7-segment displays. The drivers implement a SPI compatible slave interface that can be controlled from the Arduino using only 3 of the digital output pins. An..... Listed under: [LED Projects](#)

147. [Arduino Time & Temp Display Shield](#)



Another project I'm working on required a good timer, but the more I read about Arduino, I realized that I couldn't make an accurate timer using an Arduino that was already devoted to other tasks. The Arduino will always lose time if you perform other..... Listed under: [Temperature Measurement Projects](#)

148. [Measuring Battery Capacity With an Arduino](#)



I needed a couple of AA batteries and found the display at the supermarket where they were all arrayed. Normally when I'm shopping in the supermarket, I tend to look at the price/kg or price/l when comparing similar products. In the case of the batteries,..... Listed under: [Battery Projects](#), [Projects](#)

149. [Sunflower Automaton using arduino](#)



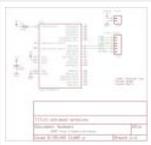
This was a 6 week project created for the Spring 2012 Things That Think course at the University of Colorado at Boulder. Our project is an autonomous Sunflower. As in nature, the highest priority for our flower is sunlight, necessary for photosynthesis. Our Arduino controlled..... Listed under: [Video – Camera – Imaging Projects](#)

150. [Charlieplexing LEDs with an Arduino](#)



Charlieplexing is an ingenious method for controlling many LEDs without using many microcontroller pins. You can turn on or off one LED at a time. To light more than one LED at a time, you can scan the LEDs by turning a sequence of them..... Listed under: [LED Projects](#), [Projects](#)

151. [Minimal Arduino with ATmega8](#)



Like me, you may have a few old Arduino boards or ATmega8 chips (in the boards) laying around from when you were first playing with Arduino. Those chips can still be really useful as the heart of a tiny "Minimal Arduino" setup. A normal Arduino..... Listed under: [Other Projects](#)

152. [Nocturnal Emissions: My Arduino Powered Internet Enabled Dream Generator](#)



We all need to dream more so I've created this Arduino Powered "dream generator" to help plant the seeds for some big thinking craziness. When you approach the generator a Maxbotix ultrasonic sensor triggers lights and music that draw you in so you can stare..... Listed under: [Internet – Ethernet – LAN Projects](#)

153. [Light Seeking R.C Car Hack \(with Arduino\) using arduino](#)



Creating a robotics platform from scratch takes allot of work and a few dollars. Buying a ready built one is easy but costs allot of money (at least for me). So instead I decided to piggy back off of the companies who make remote control..... Listed under: [Car Projects](#)

154. [Appliance Remote Control using Arduino](#)



One of the basic tasks in many home automation systems is controlling power to appliances. They could be lights, or a heater, or an exhaust fan, or just about anything else that runs on mains power. The problem of course is that it's dangerous to..... Listed under: [Home Automation Projects](#), [Robotics – Automation Projects](#)

155. [Arduino Wireless Programming with XBee Series 1 or 2](#)



Hi. This Instructable will guide you through the process of wirelessly programming your Arduino using two XBees. I just finished designing a wireless EEG system with the XBee modules, so I've become quite fluent in their programming and have just now been able to accomplish this. It still amazes..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

156. [My Arduino Binary Clock](#)



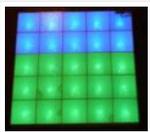
Hi from Italy Although many watches are created binary, my project was inspired mainly to this: <http://www.instructables.com/id/LED-Binary-Clock-1/>, very smart and funny. I tried to improve the design and to add something personal. I think it's a good result at the end. The project is..... Listed under: [Clock – Timer Projects](#), [Projects](#)

157. [Cheap Arduino Controled Yogurt Maker](#)



These days I was reading an interesting post on how to make yogurt "by the gallon" (<http://www.instructables.com/id/Yogurt-By-The-Gallon/>). One thing needed was to maintain a rather constant temperature of 43°C (110°F), so the bacteria can grow properly. Though you can buy commercial yogurt makers, they aren't..... Listed under: [Home Automation Projects](#), [Projects](#)

158. [Low Cost LED Grid](#)



There are a number of great Instructables on LED grids out there. This is a low cost version – not quite as polished, but easy to make. This project uses a couple of sheets of foam core, a fluorescent fixture cover from the local home..... Listed under: [LED Projects](#)

159. [Make an Attiny13 based IR proximity sensor](#)



This is an extremely cheap IR proximity sensor you can make with a few cheap parts and an AVR programmer. I use an Arduino as my programmer in this Instructable. This sensor only has a range of about 3 inches. You can easily add more..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sensor – Transducer – Detector Projects](#)

160. [Google Weather on graphical display with Arduino](#)



In this project, I am using an Arduino board to show forecast of the weather from Google Weather service on a VGA screen. The display is obviously graphical one, with icons and some colorful text. It is one of those gadgets I wanted to have..... Listed under: [Internet – Ethernet – LAN Projects](#), [LCD Projects](#), [Projects](#)

161. [Bluetooth plus Infrared Controlled Robotic Arm](#)



Hi. I'm Darren a 17 year old hobbyist, and this is the first Instructable I'm posting here, so I apologize if it kinda sucks! I hope it's good enough... So how did the idea of a robotic arm come to me? Well, the first thing..... Listed under: [Internet – Ethernet – LAN Projects](#), [Robotics – Automation Projects](#)

162. [Intro to Arduino](#)



An Arduino is an open-source microcontroller development board. In plain English, you can use the Arduino to read sensors and control things like motors and lights. This allows you to upload programs to this board which can then interact with things in the real world..... Listed under: [Development Board – Kits Projects](#)

163. [Transforming Chandelier](#)



In this tutorial I will go over how to make a transforming chandelier. This project will be heavily CAD oriented (Solidworks and Illustrator), made by laser cutting/engraving acrylic sheets, and a little bit of Arduino coding and soldering. Step 1: Choosing materials. All the pieces..... Listed under: [Other Projects](#)

164. [Sentriduino! Its the all new Sentry turret](#)



Hey guys, Today I would like to show you how to make a simple sentry turret out of household Items! You would only need to get an Arduino UNO or Mega, a Ping))) Ultrasonic Range finder, two servos, and an electronic water squinter! The rest of..... Listed under: [How To – DIY – Projects](#)

165. [RGB / RFID Lamp](#)

We have taken this project down, due to vendor's request. Please wait till we get approval again..... Listed under: [Home Automation Projects](#), [RFID – NFC projects](#)

166. [How to make a Ghost Knocker](#)



Step 1: Check the materials you need. Below is the list of stuff you need to make it: 1. Arduino I used an Arduino Pro Mini 3.3V. You also need USB-Serial tether to program it. 2. A battery box I used a AA x 4..... Listed under: [Game – Entertainment Projects](#)

167. [Temperature-Sensitive Infinity Mirro](#)



As per an assignment in my digital multi-media class, I've combined two Arduino-related tutorials into a functional object! The result is a pair of infinity mirrors that flash red and blue depending on minute fluctuations in ambient temperature. This is my first experience with Arduino,..... Listed under: [Temperature Measurement Projects](#)

168. [Wireless nunchuk controlled animatronic doll](#)



This instructable will attempt to show you how to make an animatronic doll controlled by a wireless nunchuk. This doll can only move its head though. I'm sure there are plenty of people out there who can take this and expand on it and make..... Listed under: [Game – Entertainment Projects](#)

169. [The Word Clock Arduino version](#)



***** Major updates – A much better enclosure for this clock has been designed – check out <http://www.instructables.com/id/The-Wordclock-Grew-Up/> ***** Last month I wanted to build a special gift for my beautiful wife, Megan. She has a teaching background in English, so what better present to..... Listed under: [Clock – Timer Projects](#), [Projects](#)

170. [Arduino BlinkyBall Project](#)



I frequent a blog called hackaday.com which featured a project by "Nikolai", it was a 10cm LED ball that used shift registers. It seems like a really fun project to attempt but the cost of having the boards made & not having any experience sending..... Listed under: [LED Projects](#)

171. [Educational colorimeter kit](#)



This instructable is a step-by-step assembly guide for the educational colorimeter kit we launched in April 2012 on Kickstarter. Assembly takes from 20-40 minutes. Once assembled the colorimeter can be used in a wide variety of science experiments to measure the absorbance and concentration of..... Listed under: [Metering – Instrument](#)

[Projects](#)

172. [Blinky Lights using Arduino and LumiGeek](#)



I used the Arduino UNO combined with three LumiGeek shields to run lighting. LumiGeek has dedicated shields to support 1 Watt RGB LEDs that require constant current, Addressable RGB LED Strip, and Non-Addressable RGB LED Strip. Step 1: 1 Watt RGB LEDs (2x) I wired..... Listed under: [LED Projects](#)

173. [Servo 360 rotation mod \(Parallax\)](#)



In this instructable I will explain and show you how to make a Parallax servo rotate 360°. And again I have searched the internet to see tutorials clear enough to make this possible with no luck. Don't get me wrong they are some how good but not..... Listed under: [Motor Projects](#)

174. [Wu-Tang Can: Interactive Tipping](#)



Cash rules everything around me. C.R.E.A.M. Get the money. Arduinos are showing up everywhere. Even in space. But what about the lowly tip jar? No. Are Arduino projects giving the Wu-Tang Clan the proper respect they deserve? Not even close! Rectification. That's what this is..... Listed under: [Other Projects](#)

175. [Hookup an LCD to an Arduino in 6 seconds with 3, not 6 pins](#)



Adding an LCD display to Arduino projects can add real value but the cost of doing so can be significant. Not a financial cost – you can pick up 16 (characters) x 2 (rows) LCD for as little as £3.50. The cost is the pin..... Listed under: [LCD Projects, Projects](#)

176. [Arduino Based Four Legged Robot](#)



The name of our robot is FIER and here is a video of it saying hello to the world. In this instructable, I will try to show you the basic steps to making your own walking robot for the most bang for your buck. You..... Listed under: [Robotics – Automation Projects](#)

177. [Analog audio panel for PC using Arduino](#)



Have you ever struggled with audio settings in control panel in middle of a VoIP call? Or, wondered if the other guy can hear you properly? I have. My work requires great deal of remote conference calls using PC. The first thing I wonder always..... Listed under: [Projects, Sound – Audio Projects](#)

178. [4X4X4 LED Cube w/ Arduino Un](#)



As someone who is very new to digital electronics this LED cube was fun to make, challenging and a great lesson in soldering. If you have some patience (64 LED's to solder!) and steady hands, this project will be well worth it in the end!..... Listed under: [LED Projects](#)

179. [Vacation Pet Feeder from Recycled Materials](#)



If you are a pet owner, going on vacation can be stressful. Usually, you need a friend or neighbor to come over every day and feed your pets. However, by enslaving robots you can keep your pet happy and enjoy a stress-free holiday. To save..... Listed under: [Home Automation Projects](#)

180. [HexiLogger, an Arduino based data logger](#)

The purpose of this project was to create a simple, portable device that would periodically read sensors and then store the sensor data so it could be retrieved later. The result is the HexiLogger, "hexi" because it can support up to six different sensor inputs..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects](#)

181. [Open Source Server Room Monitor using Arduino](#)

This server room environmental monitoring system is a low cost high performance device with the same onboard features as commercial devices costing hundreds of dollars more. In addition to a low cost platform we will provide low cost sensors for many important devices to insure..... Listed under: [Internet – Ethernet – LAN Projects, Metering – Instrument Projects, Projects, Sensor – Transducer – Detector Projects](#)

182. [Time clock in a Mac Mini box using Arduino](#)

After the untimely death of my Mac Mini (the last thing Apple I never buy), I recycled her limping in a clock display LEDs. Technically, there is not rocket science: an Arduino reads the time from an external clock and displays a matrix of 8x6..... Listed under: [Clock – Timer Projects, Projects](#)

183. [The UCube: Design & Print 3D Objects by flipping switches](#)

This instructable goes through how to design and print a variety of 3D models using a system called the 'UCube'. Note: I would love to eventually publish detailed instructions on how to make your own UCube, but since the design is still changing and improving,..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

184. [Open Source Hearing Impaired Alarm Clock using Arduino](#)

Activities of daily living (ADL) are self-care activities that are usually taken for granted, since as the name implies they are performed on a daily basis. If you have ever ended up in a cast, or on crutches you can empathize how menial daily activities can suddenly be very difficult to..... Listed under: [Clock – Timer Projects, Projects](#)

185. [DIY Mod an Omnibot 80's Robot with Voice, Camera, Servos, Bluetooth](#)

*Check back for more updates on this build 😊 So, have you heard of the Omnibot? Well! Any kid from the 80's will remember how amazing this robot was. For you young kids, this robot was released in the early 80's by Tomy. The robot..... Listed under: [Internet – Ethernet – LAN Projects, Motor Projects, Robotics – Automation Projects, Video – Camera – Imaging Projects](#)

186. [LED Calculator with Rotary Quadrature Encoder for Target System Voltage Selection using Arduino](#)

I'm still working on the LED calculator (original idea and most recent work) — I've finally got 'round to adding a rotary encoder to set the target system voltage. Now you can turn the potentiometer to set the LED brightness, turn the rotary encoder to set what..... Listed under: [Calculator Projects, LED Projects, Projects](#)

187. [Arduino Lens Controller – Synchronized Zoom/Focus with Wii Classic Controller](#)

My Lumix GH2 Micro Four Thirds camera not only shoots fantastic high definition videos, but with inexpensive adapters I can use it with older manual lenses that are cheap and often very high quality. I shoot a lot of performance videos for my daughter's dance studio, and I..... Listed under: [Video – Camera – Imaging Projects](#)

188. [Sensing Squeeze using Arduino](#)



I'm researching squeeze sensing as a mode of tactile interface. Here I will cover the process of developing a squeezable sensor and the firmware/software concerns associated with interpreting the data from the sensor. This fulfills the "sensor project" for my class called Computational Principles in..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

189. [S.A.M. Spring Aided Machining \(CNC with adhesive remover\)](#).



S.A.M. Spring Aided Machining (CNC with solvent) is a school project designed by three architecture students at CCA, San Francisco: Matt Boeddiker, Abelino Robles, and Tim Henshaw-Plath. (www.cca.edu) The machine is capable of rapidly prototyping and creating subtractive formwork that can be used to cast..... Listed under: [CNC Machines Projects](#)

190. [A Beginner's guide to making an Arduino Shield PCB](#)



(This tutorial has gotten really popular recently, and I'm very pleased that so many people are interested. I learned all of this stuff while working on my first PCB. If you're interested, I've started to sell the most recent version of my Arduino ProtoShield. If.....

Listed under: [Development Board – Kits Projects](#)

191. [Arduino Color Sensor](#)



Here we will be learning how to make a color sensor. my model consists of three cardboard compartments containing an LED – one red, one blue, and one green – and an OP550B phototransistor. The LEDs shine simultaneously on a solid colored card. The phototransistors..... Listed under: [Sensor – Transducer – Detector Projects](#)

192. [Cat Repelling PIR motion sensor \(covert\) speaker box alarm using Arduino](#)



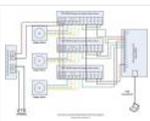
This is a PIR motion sensor device that works with the arduino uno. In order to make it covert enough to be placed in multiple settings and portable enough to fit most places, I decided to make the case for it appear as a speaker. The inspiration for..... Listed under: [Projects](#), [Security – Safety Projects](#), [Sensor – Transducer – Detector Projects](#), [Sound – Audio Projects](#)

193. [Arduino MIDI Volume Pedal](#)



I'm playing keyboards this fall in another rock concert to benefit the high school robotics team, and for some of the tunes I need to be able to fade an organ in and out over a period of a measure or two. My keyboards are..... Listed under: [Projects](#), [Sound – Audio Projects](#)

194. [Arduino Stepper Motor Control](#)



Hardware Preparation Stepper Motor Driver Board Arduino Board (UNO) If you have purchased the Arduino Board from ZTW, we have already uploaded the g-code library for you. If you are using your own Arduino Board, you can download grbl Arduino library online and load it..... Listed under: [Motor Projects](#)

195. [Arduino Thermostat with TC74 sensor](#)



Hello all! This is a quick guide on how to use an Arduino© to control whether a cooling fan and a heater is turned on depending on the detected temperature from a TC74 Arduino sensor. This is for a final project for an Electronics class..... Listed under: [Sensor – Transducer – Detector Projects](#)

196. [Geiger Counter with Touch Interface!](#)



There are quite a few geiger counter instructables. The difference with this one is that I wanted to give it a modern interface, similar to smart phone touch screens, that anyone would feel comfortable using. The reason for this is that I

want to use it as..... Listed under: [Calculator Projects](#), [Sensor – Transducer – Detector Projects](#)

197. [Digital Clock with Arduino and DS1307](#)



In this article you will learn how to make a digital clock using Arduino and the DS1307 RTC IC. What is DS1307 IC actually? Well, it is a Real Time Clock (RTC) IC that is simple to use, low cost and easy available. The IC..... Listed under: [Clock – Timer Projects](#)

198. [Arduino Drawbot](#)



In some of my previous Arduino instructurables I have show to the Arduino beginners on how to control servos in different ways. And in my last instructurable I have show the modification of a Parallax servo for a 360° rotation. So in this one I will show Arduino..... Listed under: [Robotics – Automation Projects](#)

199. [Arduino Led Dice](#)



This instructable will show you how to create a dice using Arduino and few components. It's an easy and fun project, suitable for beginners and those who want to start with Arduino; it also requires a minimal amount of components. This explains how to create..... Listed under: [LED Projects](#), [Projects](#)

200. [Arduino-Square with Color LCD](#)



B-Squares is a modular electronics platform that enables users to build, customize, and continuously update their own electronics applications. In this B-Squares App we will cover how to assemble a simple Color-LCD Application using the Arduino-Square. Hardware: 1. Arduino-Square. 2. Battery-Square 3. Color LCD Shield..... Listed under: [LCD Projects](#), [Projects](#)

201. [Simon the Octopus](#)



Everyone loves the Simon game ! So we decided to take it to another level. This project was done for our Things That Think class where we had to make a PlushBot (a plush toy that thinks! "with computation") thus, kids were our target. We..... Listed under: [Game – Entertainment Projects](#)

202. [The Traveling Geocache using Arduino](#)



This project and future projects can be found at my website <http://revoltlab.com/> where you can also find my blog. UPDATE LOG: NOW SUPER SIMPLE TO REPROGRAM! Easy FTDI USB interface hardware explained in step 10 Easy FTDI USB interface programming explained in step 13 NEW..... Listed under: [GPS Based Projects](#), [LCD Projects](#), [Projects](#)

203. [Arduino Button Activated Treat Dispenser](#)



For my Digital Multimedia class final, I created a treat dispenser that is activated by pulling a chain, which starts a servo motor that spins a wheel to dispense treats to my to African Grey parrots. Step 1: Gather Materials [box color="#985D00" bg="#FFF8CB" font="verdana" fontsize="14"..... Listed under: [Motor Projects](#), [Other Projects](#)

204. [DIY Arduino Stepper Motor Driver Board](#)



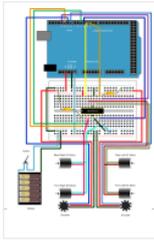
This page will show you how to put together a simple stepper motor driver board that can be controlled with an Arduino. I built mine to use with my heliostat projects, but it could be used for other things too. Update: I no longer use..... Listed under: [How To – DIY – Projects](#), [Motor Projects](#)

205. [Giant LED bar graph](#)



For a recent project I needed to build a large and obvious bar graph display. This was to show the power generated from a bicycle generator. I came up with this design and was pretty pleased with the final results as it is relatively low..... Listed under: [LED Projects](#)

206. [Drive with PID Control](#)



This example shows how to simulate a simple closed-loop control algorithm in Simulink® and how to run it on an Arduino® board. Supported Hardware: Arduino Leonardo Arduino Mega 2560 Arduino Mega ADK Arduino Pro Arduino Uno Available versions of this example: Arduino Mega 2560 board:..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

207. [BLINKING AN LED USING AN ARDUINO UNO \(EXPLAINED\)](#)



So you're here because you want to start learning some of the Arduino Basics... So let's start with THE most basics... no this "tutorial" is actually a little more basic than what you have in mind. It only requires that you: Have ANY Arduino Board..... Listed under: [LED Projects](#)

208. [Easy Arduino Audio Annoyatron](#)



This simple device simple plays a small tune at a random interval, between 5 and 30 seconds when the lights in a room go off. It can be cleverly disguised inside a tissue box, or inside or under any number of household objects. This is a very simple project (my..... Listed under: [Projects, Sound – Audio Projects](#)

209. [Blinky the one-eyed clock using Arduino](#)



In this tutorial you learn how to make a blinking clock with a difference! Updated 18/03/2013 Followers of my website would realise that I tend to make too many clocks in those tutorials. Well, I like making clocks... so here is another one. However this time..... Listed under: [Clock – Timer Projects, Projects](#)

210. [How to make your own Arduino board](#)



If your are like me which I am guessing you are, then ever since you got into doing stuff with arduino you have wanted to make your own arduino board. You may be surprised to find out that making the prototyping board is actually very..... Listed under: [Development Board – Kits Projects](#)

211. [Arduino SOS signal with 8ohms speaker and LED blinking](#)



SOS is the commonly used description for the international Morse code distress signal (· · · — — · · ·). [read more on wiki] Requirements: 1) Arduino 2*) 8 Ω speaker 3*) 150 Ω or similar resistor 4) 5mm RED LED 5) Hook-up..... Listed under: [LED Projects, Projects, Radio Projects, Sound – Audio Projects](#)

212. [Radio link between two Arduino boards](#)



I was looking for a way to handle wireless communications between two Arduino boards. Other options like Xbee or Bluetooth were going to cost \$50 to over \$100. Then I found a cheap RF transmitter and receiver at Sparkfun. The total cost is only \$9!..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects, Radio Projects](#)

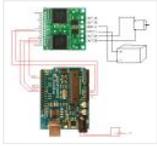
213. [DIY Amp / Watt Hour Volt Meter – Arduino](#)

Major corrections and additions made 9/9/2014 For my off-grid Ham Radio and Solar projects, I needed a way to measure volts, amps, watts, amp hours and watt hours. There's a couple of commercial products that can do this, but not with the flexibility I wanted.....



Listed under: [How To – DIY – Projects](#), [Metering – Instrument Projects](#)

214. [Pololu Motor Controller Testing and Troubleshooting](#)



Finally, I finished reading the datasheet. It didn't give much information about how to connect the motor controller to a micro-controller. I used the simple circuit I found from a post in Pololu's forum: Using Dual VNH3SP30 Motor Driver with arduino @ <http://forum.pololu.com/viewtopic.php?f=15&t=1923>. Dual VNH2SP30..... Listed under: [Motor Projects](#)

215. [Webster: A Geometric Pattern Weaving Machine](#)



We are three students from California College of the Arts in San Francisco in the Architecture program. This studio is called Creative Architecture Machines and is taught by Jason Johnson and Michael Shiloh. Webster is a geometric pattern weaving machine that takes inspiration from Islamic..... Listed under: [Calculator Projects](#), [PWM Projects](#)

216. [Colorful Countdown Clock for tight timeline management using Arduino](#)



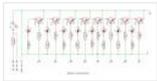
This is a funny looking clock that has that displays time on relatively large 32x16 Bi-Color LED Matrix. It includes also a countdown counter that I find very useful in many situations. Features: Date And time display Temperature display Countdown timer Buzzer notification Randomly changing..... Listed under: [Clock – Timer Projects](#), [Projects](#)

217. [Arduino Nano based Microbot](#)



This instructable was created to be entered in the Robot Challenge. If I win, the parts will of course, go into robots like this one. Notes on how to include some of the very components in the prize packages are given in the last step. I..... Listed under: [Robotics – Automation Projects](#)

218. [Simple Arduino light meter](#)



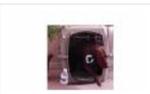
This Arduino project is a simple light meter using a photo-transistor. An LDR would be more appropriate but the photo-transistor is what I has spare at the time. On the other hand the photo-transistor is sensitive to infrared, so its handy for testing remote controls..... Listed under: [Metering – Instrument Projects](#)

219. [Arduino Based Automated Lighting Control](#)



This is my second instructable. i want to share some of the basic things i made using the arduino i am so busy lately. then i got the chance to have this spare time... inspired by my former student and a fellow co league to..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [LED Projects](#), [Projects](#)

220. [Remote Control Door – Internet Your Thing](#)



We can instantly open a door or control anything we can connect. It works from any iPhone, Android, or PC. After connecting something we want to control, download the free app to a PC, open a port, and control it remotely from anywhere. It's open..... Listed under: [Internet – Ethernet – LAN Projects](#)

221. [Minimal Arduino with ATmega8](#)



Like me, you may have a few old Arduino boards or ATmega8 chips (in the boards) laying around from when you were first playing with Arduino. Those chips can still be really useful as the heart of a tiny "Minimal Arduino" setup. A normal Arduino..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

222. [Control Arduino Wirelessly with MATLAB](#)



Been seeing few DIYs on how to establish a communication between MATLAB application and Arduino that is hardwired to PC. However, I haven't encountered anything that control Arduino via MATLAB wirelessly using the ENC28J60 compatible Ethernet shield. In this ible', I'm going to show the..... Listed under: [How To – DIY – Projects, Internet – Ethernet – LAN Projects](#)

223. [Turn your Arduino into a 4 voice wavetable synth](#)



Multiple synthesizer projects have been done for the Arduino, but few have been able to utilize the full power of the Arduino processor. DZL from GeekPhysical wrote a 4 voice wavetable synthesizer that is one of the more advanced software based synths for the Arduino..... Listed under: [Sound – Audio Projects](#)

224. [Perfboard Hackduino \(Arduino-compatible circuit\)](#)



Never again will you have to dismantle a finished project just to reuse an Arduino board! This tutorial will go through the steps involved in fabricating your own Arduino-compatible circuit using just ~\$8 of parts (this includes the ATmega chip!). This is perfect for installing..... Listed under: [Development Board – Kits Projects](#)

225. [Arduino Backlit LCD shield](#)



In this tutorial learn how to make your own backlit-LCD Arduino shield. Updated 18/03/2013 Let's see how simple it is to make your own Arduino LCD shield. Sure – you can just buy one, but where's the fun in that? Getting Started Our LCD is..... Listed under: [LCD Projects, Projects](#)

226. [Knight Rider Rides Again using an Arduino](#)



This a Knight Rider Style LED Chaser Done with a Arduino Duemilanove with an ATmega328 chip. Step 1: Things you'll need: 6 LEDs (any color) 1 Breadboard 1 100 Ohm Resistor 12 Breadboard Jumpers 1 Arduino Duemilanove "or" Decimila 1 USB cable with A-type connector..... Listed under: [LED Projects, Projects](#)

227. [Simple Buck LED Driver with PWM Input](#)



High-power LEDs over 1W are now quite inexpensive. I'm sure many of you are incorporating LEDs as light sources in your projects. However I realize that the finding and configuring the power supply is still not as simple as it can be; commercially available LED..... Listed under: [LED Projects, PWM Projects](#)

228. [Breadboard and LEDs \(lesson 3\)](#)



Introduction You've started modifying sketches, and played a bit with the onboard LED (or if you have an NG, an LED you added). The next step is to start adding onto the hardware component of the Arduino. We will do this by adding a solderless breadboard..... Listed under: [LED Projects](#)

229. [The Talking Breathalyzer using an Arduino](#)



*** Additional info at <http://droidalyzer.com/talkingbreathalyzer/index.html> *** A customizable Breathalyzer that talks and tells you how much you've had to drink. It's also open source and can easily be modified with your own text on the LCD screen and audio MP3 files. When tethered to a PC with..... Listed under: [Medical – Health based Projects, Projects](#)

230. [FaceBooth – One button to facebook photobooth](#)

I wanted to make a photobooth for a Christmas party. I wanted it to be simple to operate and only be one click easy so that even a guest who was chemically uncoordinated could even operate it.I wanted a solution that would take a photo..... Listed under: [Internet – Ethernet – LAN Projects, Video – Camera – Imaging Projects](#)



231. [Arduino-controlled, Aluminum Archangel Costume Wings](#)



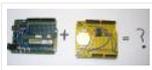
I have always loved the Marvel character Archangel. When my brother, (Shameless plug alert) budding comic book artist David Fernandez, showed me pics of a cosplay convention he went to I thought "wouldn't it be awesome if someone made life-size archangel wings?". The idea sank into the..... Listed under: [Game – Entertainment Projects, Projects](#)

232. [Arduino Breathalyzer](#)



What is a breathalyzer you may ask? It is a device for estimating blood alcohol content (BAC) from a breath sample. In simple terms it is a device to test whether a person is drunk or not. As the title suggests it runs on the Arduino. Our breathalyzer..... Listed under: [Medical – Health based Projects](#)

233. [Add a real-time clock to the Freetronics TwentyTen using Arduino](#)



Let's add a DS1307 real-time clock to our Freetronics Arduino-compatible board. Updated 18/03/2013 Now and again I find myself making another kind of clock or timing device using the Arduino system, and each one has been making use of the Maxim DS1307 real-time clock IC. However..... Listed under: [Clock – Timer Projects, Projects](#)

234. [Arduino Masterclass Part 1: Make your own hardware](#)



The world is going nuts over the Raspberry Pi single-board computer (SBC) for being a whole system under \$50. In reality though the Pi isn't actually the cheapest computing device available. If you want really cheap how does \$13.50 sound for a mini computer that..... Listed under: [Development Board – Kits Projects](#)

235. [Turn a pencil drawing into a capacitive sensor for Arduino](#)



Did you know? You can make pencil drawings reactive to touch for use with your projects! It's really easy, and gives you a lot of flexibility in making interfaces for whatever microcontroller project you're making. I put this together as part of my Unojoy project..... Listed under: [Sensor – Transducer – Detector Projects](#)

236. [The Arduino Synthesizer](#)



The Arduino is able to output sound through a library that has been developed called the Tone Library. By creating an interface and a program that can call certain values to be output to an audio out, the Arduino Synthesizer is a robust tool for..... Listed under: [Sound – Audio Projects](#)

237. [Arduino Breathalyzer: Calibrating the MQ-3 Alcohol Sensor](#)



The MQ-3 is an alcohol gas sensor that is available for about \$5 from Sparkfun, Seeed Studio, and others. It's easy to use and has sparked the imagination of anyone who has dreamed of building their own breathalyzer device for measuring the amount of alcohol..... Listed under: [Sensor – Transducer – Detector Projects](#)

238. [SD Card Data Readable Anywhere](#)



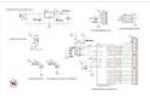
This project started as many of mine usually do, as a honey-do. We have compiled an extensive list of our book and movie collections on our computer at home, but my wife wanted to be able to scan the list from the video store (yes,..... Listed under: [Memory – Storage Projects](#)

239. [Arduino Powered Binary Clock](#)

This instructable will help you to build an Arduino Binary Clock. The original idea for this instructable was designed by Daniel Andrade. My instructable uses surface mount components, but can easily be adapted to through-hole components if you wish. You can follow my other Instructable..... Listed under: [Clock – Timer Projects, Projects](#)

240. [PCB Quadrotor \(Brushless\)](#)

Quadrotors are the new Segways: a mesmerizing, somewhat magical, self-stabilizing platform that every tech person wants to have. You can't ride a quadrotor (well, maybe you can), but they do fly, and you can build one yourself from scratch! I helped with a previous quadrotor..... Listed under: [Robotics – Automation Projects](#)

241. [Build Your Own Arduino Board](#)

Need more Arduino board? Do not spend more money for another one. Why not try to build your own DIY Arduino board? It is easy and simple. DIY Arduino Step 1 Get an Atmega328-PU or Atmega328P-PU (with bootloader inside). atmega328p A brief introduction on the..... Listed under: [Development Board – Kits Projects](#)

242. [Electronic Instrument](#)

This electronic instrument allows you to sequence and loop audio and MIDI data. Most of the time I use it to sequence drum samples so I can play around with different beats and rhythms. The really great thing about this instrument is that it is..... Listed under: [How To – DIY – Projects](#)

243. [ANDROID+ARDUINOADK+RGB led](#)

this is a project which makes an android app, then configure it to use it with android debug bridge or android accessory development kit. for making the android app we use android mode of processing. For hardware, i always choose arduino. here i have a..... Listed under: [Arduino Android, Internet – Ethernet – LAN Projects, Projects](#)

244. [Arduino Uno – Programming With A Serial Port](#)

I'm working on an Arduino clone. The Arduino is essentially an ATMEGA328P development board with a bootloader pre-loaded.

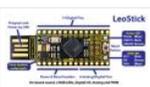
There are a lot of custom macros built into the programming interface that make it really easy to use, and even easy to build some powerful applications. Listed under: [Arduino Programmer Projects](#)

245. [Arduino from Scratch Digital Thermometer](#)

I have loved making projects with Arduinos, but at \$30 a piece your projects can get expensive. So I want to show you how you can make your own Arduino from scratch and save money doing it. Make your own Arduino for around \$8. For..... Listed under: [Projects, Temperature Measurement Projects](#)

246. [BrainTap: the interactive arthritis and memory exercise game](#)

I built this project at uni as a 3rd year project (with a couple of classmates) at the University of Technology, Sydney. It is aimed at Baby Boomers and targets a skill and level based memory and fine motor skills exercise game. The form is..... Listed under: [Game – Entertainment Projects](#)

247. [LeoStick Getting Started Guide](#)

The Freetronics LeoStick is a handy break-out board for the ATmega32U4 microcontroller. The board has a convenient USB stick format, and is based on the pinout and connections of the Arduino Leonardo reference design for compatibility with the Arduino IDE. Before you plug in your LeoStick..... Listed under: [How To – DIY – Projects](#)

248. [Arduino Wall Lamp](#)

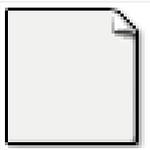
So, I have always wanted a nice lamp by the side of my bed, Something simple with out any buttons. Of course this would mean it had to be wireless.I also wanted to use it from my bed but not getting out of my bed to turn it off..... Listed under: [Home Automation Projects](#), [LED Projects](#)

249. [Sensor Less 3d Printed Robot](#)

Tyree (he wears a tie and he has tires) actually smiles after he bumps into something (see video). Using an Arduino motor shield, he detects obstacles using the “more current into the motor means something is in the way” principle. Tyree started out as a..... Listed under: [Robotics – Automation Projects](#), [Sensor – Transducer – Detector Projects](#)

250. [Building an 8x8x8 LED Cube – The Driving Circuit](#)

In this article we are going to take a detailed look at how to build the driving circuit for the 8x8x8 LED cube. In other words we are going to design and analyze the circuit which translates the signals coming from the Arduino to appropriate..... Listed under: [LED Projects](#)

251. [ArduSensor Fun Pack](#)

ArduSensors are open source plug-in-play sensors for Arduino. These were originally made for beginners to get started with Arduino, a very cool electronics prototyping platform, but anyone can use them. I still play around with them all of the time, and I bet a ton..... Listed under: [Sensor – Transducer – Detector Projects](#)

252. [TiDiGino, the Arduino-based GSM remote control](#)

Using an ATmega 2560 and therefore the heart of Arduino, we have developed a universal remote control with GSM. This allows to control 2IN/2OUT, DTMF key, gate control and GSM thermostat activated remotely. We have already presented several remote control with different functions. But now..... Listed under: [Phone Projects](#), [Radio Projects](#)

253. [UltraSonic Arduino Video instructions How To – Parking your car with an Arduino](#)

How To – Parking your car with an Arduino Code: // Back up Helper, by Kevin Darrah v4 #include <SoftwareSerial.h>// to read the data from the range finder on any digital pin SoftwareSerial sonar(5, 6); // RX, TX //we're only using the RX pin (5),..... Listed under: [Car Projects](#), [Projects](#)

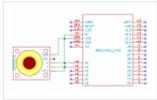
254. [Hack Your Hasbro R2D2 With an IOIO Microcontroller](#)

My wife bought me a Hasbro Interactive R2D2 Astromech Droid for my birthday a few years ago after I said how much fun it would be to hack it and I've finally managed to get inside and start playing!Although the built-in voice control functions are..... Listed under: [Robotics – Automation Projects](#)

255. [Clock One – Digital plus Analog Clock An Arduino](#)

For some strange reason I have a fascination with various types of electronic clocks (which explains this article). Therefore this project will be the start of an irregular series of clock projects whose goal will be easy to follow and produce interesting results. Our “Clock..... Listed under: [Clock – Timer Projects](#), [Projects](#)

256. [Ardu-Bot-Tom – RF Link Controlled Robot](#)



[box color="#985D00" bg="#FFF8CB" font="verdana" fontsize="14" radius="20" border="#985D12" float="right" head="Major Components in Project" headbg="#FFEB70" headcolor="#985D00"] Ardu-Bot-Tom List of Materials
Controller Parts: 1x – Arduino Uno 1x – 9V Battery 1x – 433Mhz TX Module 1x – SparkFun Joystick Robot Parts: 1x – Arduino Uno..... Listed under: [Robotics – Automation Projects](#)

257. [Multiplexing with Arduino and the 74HC595](#)



The 74HC595 is an easy and inexpensive (at about 60 cents apiece) way to increase the number of digital out pins on your Arduino. In this tutorial I'll show you how to drive up to 16 LEDs with one 74HC595 using a technique called multiplexing..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

258. [Arduino punk console](#)



This is my first build using an arduino microcontroller. I wanted to create a simple tone output device along the lines of the 555-based atari punk console, but using solely the mcu as the tone generator. Unfortunately, that was just too simple a task with a microcontroller to..... Listed under: [Projects, Sound – Audio Projects](#)

259. [Perduino: Build Your Own Arduino Microcontroller](#)



This how-to takes you through all the steps of making your own arduino on a perfboard or perduino! Arduino microcontrollers are great for learning about physical computing and are very useful for rapid prototyping. Arduino's simple programming language makes it a favorite of hobbyists and..... Listed under: [Development Board – Kits Projects, How To – DIY – Projects, Projects](#)

260. [Arduino LED Flasher Circuit](#)



In this project, we will go over how to build an arduino LED flasher circuit. We will use a standard arduino board, doesn't matter which, and connect it so that it flashes an LED a certain amounts of times on and off repeatedly to create..... Listed under: [LED Projects](#)

261. [Touche for Arduino: Advanced touch sensing](#)



Update: New interface – look at the last step. Credits: Arduino sensing done by DZL, Processing sketch and Instructable done by Mads Hoby. Disney Research lab designed a novel way to detect touch. You can see a video of their demo here: I had the honor to meet..... Listed under: [Sensor – Transducer – Detector Projects](#)

262. [Clock Three – A pillow clock using Arduino](#)



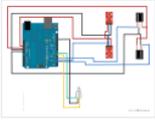
Time for another instalment in my irregular series of irregular clock projects. In contrast with the minimalism of Clock Two, in this article we describe how to build a different type of clock – using the “lilypad” style of Arduino-compatible board and components designed for use in e-textiles..... Listed under: [Clock – Timer Projects, Home Automation Projects, Projects](#)

263. [Get Into the Kit Business: How to Build and Sell Your Own Arduino Shields](#)



The DIY industry is booming, despite the desperate blackmailing of society by finance capitalists. Companies like Adafruit and Makerbot are grossing well over a million dollars a year, and Evil Mad Science Laboratories just recently dedicated themselves to running a full-time kit business. Making kits..... Listed under: [Development Board – Kits Projects](#)

264. [Arduino IR Transmitter & Receiver w/ LEDs Flickering Issue](#)



I have an Arduino Uno connected to two IR transmitters and respective receivers. Basically, when one of the receivers detects a beam break, I have a strand of LEDs display a pattern. This all works in principle, but the problem is that when the IR..... Listed under: [LED Projects](#), [Radio Projects](#)

265. [Intro to Model Airplane Autopilot](#)



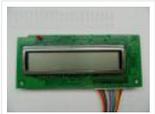
I am twenty years old. I picked up my arduino for the first time this Christmas, and I've been keeping busy on my arduino applications so that I can bring you this instructable. I hope that it helps!!! The purpose of this project was to..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#)

266. [Making the Good Night Lamp using Arduino](#)



Last March, Alexandra Deschamps-Sonsino registered a new limited company in London, and booked a booth at CES, the consumer electronics trade show, taking place 10 months later. She had no team, and only a dated prototype product that she had designed back in 2005. "I..... Listed under: [Home Automation Projects](#), [LED Projects](#), [Projects](#)

267. [Salvaging an LCD from a fax machine using an Arduino](#)



I acquired an old fax machine that looked like a ripe source of parts, like steppers, IR sensors, micro switches and things. As it turned out, it was. It also had a nice looking 2 x 16 character LCD. However, after taking everything apart, I..... Listed under: [CNC Machines Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [LCD Projects](#), [Projects](#)

268. [Arduino hardware hacking: Part 3](#)



In our previous two tutorials (see here and here), we created a Simon-type game using the Arduino, a hardware platform for simple, and not so simple, electronics projects. We placed three buttons and three LEDs on to something called a breadboard, and wrote a small..... Listed under: [How To – DIY – Projects](#)

269. [Arduino Solar Tracking Robot](#)



This is a simple solar tracker which automatically orients itself towards the sun or any bright source of light like the sun .If you place solar panels on this robot it can increase their productivity by 90 to 95 %. At first creating a solar..... Listed under: [Robotics – Automation Projects](#), [Solar energy projects](#)

270. [Arduino Esplora Accelerometer](#)



This sketch shows you how to read the values from the accelerometer. To see it in action, open the Arduino serial monitor on your computer and tilt the board. You'll see the accelerometer values for each axis change as you tilt the board. Circuit Only..... Listed under: [Metering – Instrument Projects](#), [Projects](#)

271. [Arduino hardware hacking: Part 2](#)



In part 1 of our Arduino tutorial series we covered the basics of how the Arduino works, and we're going to use that knowledge in a hands-on project and see how this open-source hardware programming environment works when we're actually trying to get something done..... Listed under: [How To – DIY – Projects](#)

272. [The Revenge of the Yellow Drum Machine \(Arduino\)](#)

I was inspired by Frits Lyneborg's Yellow Drum Machine. Watching the videos, it has such personality! I have also been thinking recently about sound and robotics. I did some research looking for a version of the robot that used the Arduino as a brain, but.....



Listed under: [Sound – Audio Projects](#)

273. [Theremin with Zapper.laser.Arduino](#)



I created this Theremin like device after seeing this article in Make magazine: <http://m-cdn.dashdigital.com/make/vol15/?pg=69#pg67> While this looked pretty straight forward it turned out to be a bit much for me at the time. But after much effort, I got it to work pretty good. I..... Listed under: [Other Projects](#), [Projects](#)

274. [Arduino hardware hacking: Part 1](#)



Arduino is cool. It's cool because it's a tiny device – about three inches by two inches – that comes with a USB port and a programmable chip. It's cool because you can program it using a very simple programming language known as Wiring. But..... Listed under: [How To – DIY – Projects](#)

275. [Fluid In.Flux_3D Wax Printing In Water](#)



Fluid In.Flux is a 3D printing experimental machine which prints wax in water. The Machine was a semester-wide exploration as part of the Advanced Architecture Studio called “Creative Architecture Machines” by Professor Jason Kelly Johnson and Michael Shiloh at the California College of the Arts, in San Francisco..... Listed under: [CNC Machines Projects](#)

276. [RC Rocket Launch System](#)



This instructable will show you how to make an RC launch system for your Estes rocket, which can be operated with a TV remote. What it does is it allows you to press the center button on your TV remote, and it'll automatically launch your..... Listed under: [How To – DIY – Projects](#)

277. [Controlling your trains with an Arduino](#)



A quick introduction to the Arduino Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software. It's intended for artists, designers, hobbyists, and anyone interested in creating interactive objects or environments. Arduino can sense the environment by receiving input from a..... Listed under: [How To – DIY – Projects](#)

278. [Throwduino Basic – Light-Sensing Flashing Throwie](#)



Throwies are great. They have a minimal parts count – 2 or 3 depending on whether you use a magnet – and produce a great effect. They are very cheap and easy but not highly efficient: 1) They are on all the time, so on..... Listed under: [LED Projects](#), [Sensor – Transducer – Detector Projects](#)

279. [Arduino Online Thermometer Project](#)



I have been researching a project which will help me with my understanding of electronics, networking, and programming. I decided to build an online thermometer which could be used in applications that need temperature monitoring. I currently work in a lab environment where I test, troubleshoot,..... Listed under: [Medical – Health based Projects](#), [Temperature Measurement Projects](#)

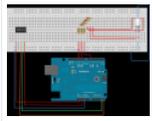
280. [Graphing values in Arduino](#)



Sometimes when you're testing a sensor or debugging a value in an Arduino project, you want to see something other than numbers flying by in the Serial Monitor. However, you want to get the sensor working quickly, and you don't want

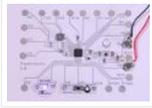
to take the time..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

281. [RGB Color Sensor on Arduino](#)



The next board I want to show you is the ADJD-S371 Color Light Sensor Evaluation Board from sparkfun. It emits light and analyses the reflected color spectrum. The board can be controlled via I2C. The sleep and xclk pins were not used in this example..... Listed under: [Sensor – Transducer – Detector Projects](#)

282. [Paperduino 2.0 with Circuit Scribe – Paper Arduino](#)



What if making an Arduino, or wiring up an Arduino was as easy as printing one out? In this tutorial we printed our own Arduino Pro Mini board using a pen plotter and the Electroninks Circuit Scribe (a rollerball pen with highly conductive ink). Within..... Listed under: [LED Projects](#)

283. [Daft Punk LED Matrix Breakout Board](#)



I was always impressed by the Daft Punk Coffee Table. Being able to light up a bunch of LEDs and flash them in patterns has so many applications. It was one of the reasons why I bought an Arduino seeing how it could control a..... Listed under: [LED Projects](#)

284. [LEARN! ARDUINO – A HANDS-ON APPROACH](#)



INTRODUCTION This manual will show you how to use each of the components in the kit, and give you software Sketch examples for each one. Then you can combine some components to make examples of Automatic Systems such as a lighting controller. You're probably..... Listed under: [How To – DIY – Projects](#)

285. [Alarm Clock Overkill](#)



I don't get up at the same time every day, so I thought it'd be nice to have an alarm clock that would drag me out of bed at different times on different days. That was the initial idea: things got out of hand, of..... Listed under: [Clock – Timer Projects](#)

286. [The Clamshell Stompbox](#)



This is a DIY variable resistor I created as an interface for live performance– like astomp box. I designed it as a project my audio students could build with materials we already have in the classroom. The result is a variable resistor that can be..... Listed under: [LED Projects](#)

287. [Arduino and CueCat barcode scanner](#)



I've had a cuecat barcode scanner sitting around for over 10 years. Basically it connects to a PS2 port (apparently there is a USB version) like a keyboard and spits out a barcode when scanned. Nice!. The annoying thing is that it is "encrypted". What..... Listed under: [Sensor – Transducer – Detector Projects](#)

288. [Domotic arduino](#)



In this introduction I will show you a overview of this project whit Arduino Uno. The purpose of this instructable is move a electric roller shutter by Arduino Uno. The prototype that I made is my first electronic project with Arduino and I hope this..... Listed under: [Development Board – Kits Projects, Projects](#)

289. [Cylon Pumpkin](#)



This has been done before. There are several good ways to do it: most use either a 555 timer chip and decimal counter chip, or an Arduino. Stefan and I used an Arduino (Boarduino, technically) which limited our scanner to 14 LEDs. No problem —..... Listed under: [Game – Entertainment Projects](#)

290. [Build Your Own Programmable LED Matrix](#)



QR codes are addicting. Smartphones are smart enough to read them from virtually any angle or orientation. But imagine taking it a step further. I had dreams of a digital LED array that I could program with QR codes, and I wanted it really big!..... Listed under: [LED Projects](#)

291. [Botanicals Clone using an Arduino](#)



During the past spring a good friend of mine bought me my first house plant, a Lady Palm, and I've found myself rather invested in keeping it alive. To that end I wanted to monitor the plant's environment so I could ensure that its needs..... Listed under: [How To – DIY – Projects, Projects](#)

292. [Arduino DDNS \(Dynamic DNS\) by Open-Electronics.org](#)



This device captures the IP address of your network and it publish on site DynDNS.com. All without PC. It allow a remote access to your LAN even if the IP address of the connections changes. For logistics reasons the provider can not assign a IP..... Listed under: [Internet – Ethernet – LAN Projects, Projects](#)

293. [Visualize data from sensors using Arduino + coolterm](#)



Once you're getting some values from sensors, for example using Arduino, (see my previous instructable), sometimes it's nice to see the sensor data in a graph. Here's how in only a few steps! I made this particular Instructables using a sonar sensor (XL Max Sonar..... Listed under: [Sensor – Transducer – Detector Projects](#)

294. [USB Game Pad With Tilt-accelerometer Mouse using an Arduino](#)



Make a game pad with an accelerometer inside! This project tutorial will show you how you can convert a console game pad into a USB keyboard mouse for playing games on your PC. The USB game pad can be used with nearly any software, such..... Listed under: [Game – Entertainment Projects, Interfacing\(USB – RS232 – I2c -ISP\) Projects, Metering – Instrument Projects, Projects](#)

295. [Singing plant. Make your plant sing with Arduino, touche and a gameduino](#)



This project is a part of experiments done while doing an artist in residence at Instructables. You can see the other projects here. Making a plant sing has been a trick since the Theremin was invented. Here I am going to teach you how to do..... Listed under: [Game – Entertainment Projects, Home Automation Projects, Projects, Sound – Audio Projects](#)

296. [BaW-Bot Part 2: Build the motor-controller & body](#)



This is the second part of our BaW-Bot (Bells-and-Whistles Bot) build – 5 separate instructables that look into different Arduino-related technologies, combining to create a Bot with all the bells-and-whistles. Part 1: Build an Arduino on a Board Part 2: Build the motor-controller & body..... Listed under: [Motor Projects, Robotics – Automation Projects](#)

297. [Remote key-switch operation](#)

One of my colleagues, Dr. Shane Mayor, has built a very nice LIDAR system for atmospheric research. It's located at a remote site, at the end of a dirt road, and everything about the system can be controlled remotely except the main pump laser power..... Listed under:


[Radio Projects](#)

 298. [Connecting a 12V relay to Arduino](#)


To connect a 12V relay to the Arduino you need the following things: – 1 Arduino – 1 diode for example 1N4007 – 1 NPN transistor for example 2N2222 (in the US) or BC548 (in Europe) – 1 relay for example one with coil voltage.....

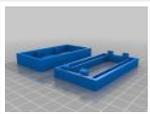
Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects](#)

 299. [Arduino Flash Controller for Photography](#)


Being a broke amateur photographer isn't easy. Film, chemicals and paper aren't cheap and a budget for some studio lights is non existant. So, I decided to, with the help of my trusty arduino, create my own sync controller to use with disposable camera flash circuits. By using a..... Listed under: [Video – Camera – Imaging Projects](#)

 300. [Super Secret Lock Box w/ Capacitive Touch](#)


Hey everyone, I wanted to share a project I just finished up. I built a super secret locking box for my girlfriends little brother. He has a knack for creative lego building so I thought it would be a good idea to open him up..... Listed under: [Security – Safety Projects, Sensor – Transducer – Detector Projects](#)

 301. [Driving multiple Sparkfun 7-segment displays with an Arduino](#)


I'm currently helping a couple of engineering students finish a senior project that didn't get finished last year. Long story... Anyway, it's a bicycle brake tester being built for Paul Components. The mechanical design is great, but they had trouble with the electronics. Part of..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

 302. [Aquameterduino: Water meter plus Arduino](#)


After a bad water damage (our cellar basically filled up whilst we were away for several days), I decided to monitor our water usage for anomalies. Enters Arduino... The idea of this project is to use an arduino to count every drop of water that..... Listed under: [Metering – Instrument Projects](#)

 303. [Wrap Beats – Capsense Arduino Instrument](#)


Wrap Beats is an instrument that lets you string together notes in order to create different melodies and visual patterns. I constructed it using the Capacitive sensing library for Arduino and combining that with the music abilities of processing to create a dynamic instrument that..... Listed under: [Sound – Audio Projects](#)

 304. [Arduino PCR \(thermal cycler\) for under \\$85](#)


This tutorial will show you how to make a thermal cycler from scratch for about \$85. In short, PCR (polymerase chain reaction) amplifies bits of DNA, creating millions of copies of a target sequence. You can use it to test a DNA sample for a..... Listed under: [How To – DIY – Projects](#)

 305. [ISP Clip for ATtiny44/84 \(or others!\)](#)

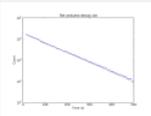

I got my start in microcontrollers with the Arduino, as many of us outside of electrical engineering did. (And still do!) The ease of programming that little board makes it a great gateway... and like any gateway, sometimes you go through. Most of my projects..... Listed under: [Development Board – Kits Projects, Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

306. [RFI-DJ: MP3 Playing RFID Thing](#)

The RFI-DJ is a USB device for playing MP3 files from your computer. You have a set of RFID cards, each one with a song name written on it. You choose a card and place it on the RFI-DJ, and your computer will play that..... Listed under: [RFID – NFC projects](#), [Sound – Audio Projects](#)

307. [RGB LED Color Selector](#)

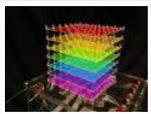
One Challenge with working with RGB LEDs is getting the right Red, Green and Blue values to match a color you are trying to display. You can start with web colors, and then sometimes need to adjust them since the LEDs don't look quite the..... Listed under: [LED Projects](#)

308. [Radioactive isotope decay simulation](#)

My students need to learn LabVIEW —I know, it's proprietary software, and expensive, but until a viable open-source equivalent comes along we're stuck with it— and one of the exercises I have them do is to make a program to analyze radioactive decay. This gives..... Listed under: [Radio Projects](#)

309. [Mood Lamp with Arduino](#)

Hi! In this tutorial you will learn to make a mood lamp with arduino. I know that you may have seen a lot of mood lamp projects with arduino, but I wasn't very satisfied with them because they all change the color very abruptly. So,..... Listed under: [Home Automation Projects](#)

310. [Self-Contained 7x7x7 LED Cube using Arduino](#)

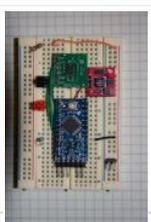
LED cubes are true 3D displays that work by lighting up points in a 3D lattice of LEDs. On the 3D display you can produce some truly mesmerizing animations. This Instructable will walk you through creating an LED cube for yourself that is completely self-contained and powered..... Listed under: [LED Projects](#), [Projects](#)

311. [Using a quadrature encoder \(rotary switch\) with Arduino](#)

I've found several sites and posts explaining how to use a quadrature encoder with an Arduino, but wasn't completely satisfied with any of the methods used. Perhaps part of the problem is with the encoder I'm using: it's part #COM-09117 at Sparkfun.com. This encoder has..... Listed under: [Arduino Programmer Projects](#)

312. [Use xbees \(series 2\) to control a motor](#)

Using two xbees, an arduino, an xbee explorer, and an h-bridge, wirelessly control a DC motor to spin in both directions (last video). Note: I used the xbee I linked to, but for a one to one communication, rather than a network of wireless devices,..... Listed under: [Motor Projects](#)

313. [Simple Datalogger](#)

Here's a simple Arduino-based datalogger I'm currently developing: This test-of-concept model is based on the Arduino Pro Mini (ATMega168). It runs on a 1.5-V battery, using a voltage up-converter from Sparkfun.com. For a sensor, it's using a 3-axis accelerometer on a breakout board, also from..... Listed under: [Development Board – Kits Projects](#)

314. [BaW-Bot Part 3: Adding Sight and Touch to the Bot](#)

This is the third part of our BaW-Bot (Bells-and-Whistles Bot) build – 5 separate instructables that look into different Arduino-related technologies, combining to create a Bot with all the bells-and-whistles. Part 1: Build an Arduino on a Board Part 2: Build the motor-



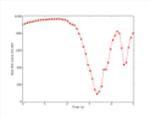
controller & body..... Listed under: [Robotics – Automation Projects](#)

315. [Building an Breathalyzer with MQ-3 and Arduino](#)



During the First Meeting of Electronic Arts in Florianópolis, we built a Breathalyzer using the Alcohol Gas Sensor MQ-3 and a Arduino Board to use in the last day of the meeting, in which we gave a party. You can see a quick video two..... Listed under: [Medical – Health based Projects](#), [Projects](#), [Sound – Audio Projects](#)

316. [Simple Arduino data-collection](#)



At this year's "Arduinos in the Physics Lab" workshop at the AAPT meeting, one of the participants asked for a simple way of using the Arduino as a tethered A/D converter for data collection direct to a computer. This is my quick & dirty demonstration..... Listed under: [Metering – Instrument Projects](#)

317. [Energino: an Arduino-based energy consumption monitoring shield](#)



Energino is a plug-load meter that measures the amount of power consumed by whatever DC electrical appliance is plugged into its. It was originally designed to monitor the energy consumption of simple networking devices such as Ethernet switches and WiFi access points, but it can..... Listed under: [Metering – Instrument Projects](#)

318. [More Humane Moisture sensor](#)



Recently I got a project from Titan industries, who were in search of something as an interactive plant pot which could bridge this gap of emotional communication, in mins this reminded me of brilliant projects done by people where the plant could tweet and..... Listed under: [Sensor – Transducer – Detector Projects](#)

319. [Arduino-based event counter](#)



I teach Modern Physics here at CSUC, and we occasionally use isotopes with half-lives of a year or less (such as Zinc-65 and Cadmium-109) for energy-calibration sources for a gamma-spectroscopy lab. I thought it might be fun to try measuring the activity of one of..... Listed under: [Calculator Projects](#)

320. [Lithium Battery Solar USB – iPhone – Arduino Charger](#)



One of the most fun and useful projects on instructables is to create your very own solar USB/ iPhone charger. They're not overly difficult to make, nor are the parts overly expensive or hard to find. For the most part they do a rather good..... Listed under: [Battery Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Phone Projects](#)

321. [ATtiny85/45/25 LED dice](#)



If you have looked at my 5 LED ATtiny85 POV display, we programmed the ATtiny with the Arduino. (If you haven't seen it, click here) We will be doing the same thing for this LED Dice project. The total parts cost for this project is..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [LED Projects](#)

322. [Morse-code trainer](#)



My kids are learning Morse code this summer, so I threw together this little circuit to help them learn. And to make it more fun... It uses an ATtiny85 (\$2.26 at digikey.com) to drive a piezo beeper (≈ \$3.50 at Radio Shack.) The ATtiny85 takes..... Listed under: [Arduino Programmer Projects](#)

323. [Light Painters Palette aka Light Box](#)



Today I'm going to show you how I made my "light painters palette" aka light box. If your into electronics and photography than this is probably something you are going to like. Supplies: -Arduino (I'm using a arduino pro mini which requires a ftdi basic to program,..... Listed under: [LED Projects](#), [Video – Camera – Imaging Projects](#)

324. [How To Make an Obstacle Avoiding Arduino Robot](#)



Hello all! In this Instructable I'll be showing you how to make a robot similar to the "Mobile Arduino Experimental Platform" (MAEP) that I made. It is equipped with two motors that can steer the robot and the ability to see obstacles in front of..... Listed under: [Robotics – Automation Projects](#)

325. ["Ayduino" Single-Sided Arduino Clone](#)



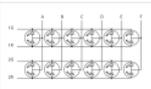
I'm teaching "Electronics for Scientists" this semester, and I wanted to allow each student to have their own Arduino to play with for microcontroller lab exercises and possibly use for their final projects. The Arduino is not very expensive at roughly \$30 per, but they..... Listed under: [Development Board – Kits Projects](#)

326. [Fijibot](#)



Fijibot is an autonomous, self-charging photovore. I built him using a 1.5 liter Fiji Water bottle, an Arduino Uno, 6v solar panel (plus various other parts) from Radio Shack, an Arduino Proto Shield (plus various other parts) from Adafruit, and the wheels and steering arrangement..... Listed under: [Robotics – Automation Projects](#)

327. [Network-status indicator](#)



I run a NFS/NIS network under a combination of OS's for the upper-division physics lab here at CSUC, and one source of irritation is when one machine goes down and nobody lets me know until suddenly that machine is absolutely necessary NOW! So I figured..... Listed under: [Internet – Ethernet – LAN Projects](#)

328. [4x4x4 LED Cube Arduino](#)



After seeing all the different instructables for Led cubes i was still left with a lot of unanswered questions. So after reading everything i could find this is what i got. I decided to make the instructable after building it...so ill try to recreate the process the best..... Listed under: [LED Projects](#)

329. [Quantitative Two-Dimensional Temperature Measurements](#)



Lab Experiments involving the Heat Equation are usually one-dimensional exercises involving a copper pipe and a half-dozen thermocouples. But with DS18B20 "One-Wire" thermometer chips and an Arduino, it's possible to measure hundreds of temperature values simultaneously. Here's what my students Daniel Lund and Lawrence Lechuga..... Listed under: [Temperature Measurement Projects](#)

330. [Arduino ATtiny2313 Programming Shield](#)



Today, I made a small 3x3x3 LED cube with an ATtiny2313 that I had from about 2 weeks ago. Whenever I had to reprogram the LED cube when I thought of more awesome patterns, I had to get out my breadboard and then wire up..... Listed under: [Arduino Programmer Projects](#), [Development Board – Kits Projects](#), [Projects](#)

331. [Full Binary Clock](#)



I was wandering the internet looking for a good arduino tutorial on how to build a binary clock with seconds, but I could not find one. So now I am writing this for you to have a binary clock with seconds, minutes, and hours. What..... Listed under: [Clock – Timer Projects](#)

332. [Universal clock suitable for visually impaired using Arduino](#)

I was googling around looking for some sort of device I could make using arduino and stumbled upon eshop with devices for visually impaired. What really shocked me was the price. I mean-I do realize that such sorts of devices are not really mainstream, but..... Listed under: [Clock – Timer Projects](#), [Projects](#)

333. [Arduino Robot Arm – LarryArm v0.1](#)

I have constructed a basic Arduino robot arm using 3 servos that cost me £15 in total plus a couple of hours in time to build and it's very simple that I think anyone can replicate and build this. I already had the Arduino Duemilanove..... Listed under: [Robotics – Automation Projects](#)

334. [Cwik Clock v1.0 – An Arduino Binary Clock](#)

Overview This is a guide to building an Arduino-powered clock that uses LEDs to display a 24-hour clock (hours and minutes) as binary digits, an analog meter to display the seconds, a switch to toggle between time-display and time-setting mode, and 2 knobs for setting..... Listed under: [Clock – Timer Projects](#)

335. [Arduino: Controlling the Robot Arm](#)

So the arm is wired into Arduino as per the previous post, Arduino: Modifying a Robot Arm and hopefully this has worked. In this next part I alter the Arduino sketch slightly and write the first Processing sketch to test control of the arm –..... Listed under: [Robotics – Automation Projects](#)

336. [Clusterbot](#)

What is Clusterbot? He is a small, affordable, autonomous Arduino-powered robot. He can move, see, avoid obstacles, and makes a melodic chirping sound sometimes. Clusterbot was my first Arduino project, and I think he makes a great project for a beginner. While building Clusterbot you..... Listed under: [Robotics – Automation Projects](#)

337. [4 Servo drive CellBot which can be remotely controlled using Arduino](#)

I started with an idea of what I wanted to do from the beginning but one attempt after another I finally got to where I am now. This robot can be remotely controlled from anywhere in the world and driven around the house. I can..... Listed under: [Motor Projects](#), [Projects](#), [Robotics – Automation Projects](#)

338. [Using Processing to Send Values using the Serial Port to Arduino](#)

In this write-up, I'll show how to create a value in Processing and then send this value over the serial port to the Arduino. In the example I'm setting values of LEDs making them brighter or dimmed but this example can be extended to control..... Listed under: [Arduino Programmer Projects](#)

339. [Over the Counter Kitchen Radio using Arduino](#)

This project used the Si470x FM radio receiver and an arduino to make an over the counter kitchen radio. These parts had been purchased for a different build that unfortunately met a premature end. The concept for this project is simple. Play my favorite news..... Listed under: [Home Automation Projects](#), [Projects](#), [Radio Projects](#)

340. [SPEAKR](#)

Nature has a way of speaking to us in a way that soothes and revitalizes. Sounds of the wind in various places create low volume tones that we barely hear. They have a certain beauty and randomness to them that are unique to nature. We've..... Listed under: [Game –](#)



[Entertainment Projects](#)

341. [Box Security Package using Arduino](#)



If you touch the package, it will scream and run away—changing its course when it strikes an obstacle. When you lift the gift tag, light strikes a photocell and operation commences. Motors and a sound module are controlled by an Arduino (and Arduino Motor Shield)..... Listed under: [Projects](#), [Security – Safety Projects](#)

342. [Arduino + Processing – 3D Sensor Data Visualisation](#)



So following on from my previous posts about visualising sensor data in Processing, I'm now looking at drawing 3D representations of the data recorded from the Sharp IR sensor – although can be any kind of range finder. I started by rigging 2 servos, one..... Listed under: [Sensor – Transducer – Detector Projects](#)

343. [LED Cylinder using Arduino](#)



This is a little art project I made with 95 RGB LEDs arranged in a 3D cylinder shape, sitting atop a microcontroller-based driver circuit. The LEDs are individually addressable, and when you power it on, the software cycles through a series of animations, e.g. various..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [LED Projects](#), [Projects](#)

344. [Electrically Insulated Altoids Tin](#)



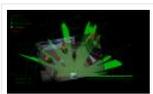
Ah yes, it's time for another Instructable involving an Altoids tin... But this time it's not about what's inside the Altoids tin, it's about the Altoids tin itself. In all its greatness, the Altoids tin we all know and love has one rather major flaw..... Listed under: [Development Board – Kits Projects](#)

345. [How To Interface a CDV 700 Geiger Counter to a PC Using an Arduino Video instructions](#)



How To Interface a CDV 700 Geiger Counter to a PC Using an Arduino (Part 1) The second part of our video series of our project to interface to a CDV-700 radiation meter using an Arduino Uno! How To Interface a CDV 700 Geiger Counter..... Listed under: [Calculator Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

346. [Arduino + Processing – Make a Radar Screen – Part 3: Visualising the Data from Sharp Infrared Range Finder](#)



So I had some luck with getting the Sharp Infrared range finder working and I've now plugged this on to my servo rig to see if I get better results on my radar styled display. Check out how to use the Sharp IR range finder..... Listed under: [LCD Projects](#), [Metering – Instrument Projects](#)

347. [Using the Sparkfun Motor Driver 1A Dual TB6612FNG using Arduino](#)



As a beginner myself, I struggled to find a one-stop set of instructions to get up and running with Sparkfun's Motor Driver 1A Dual TB6612FNG. This motor driver breakout board is exceptional value, is beautifully small, but does need a little more effort to get..... Listed under: [Motor Projects](#), [Projects](#)

348. [Motion Controlled Robotic Arm](#)



This instructable is not complete, I will post code soon The Arm: This instructable shows the process of building a robotic arm using servos, Arduino microprocessor, a gyroscope and multiple bend sensors. The user wears a glove containing the gyroscope and bend sensors which translate..... Listed under: [Robotics – Automation Projects](#)

349. [Arduino traffic lights](#)

I made this project on the same night that my Arduino Duemilanove arrived from Cool Components. After being an Instructables member for about a year I thought it was time I should contribute. There is another Arduino traffic light project similar to this, but it..... Listed under: [Car Projects](#), [LED Projects](#), [Projects](#)

350. [Controlling a clock with an Arduino](#)

Update: The Arduino system is fine; the only thing you have to take into consideration is the 9.54 hour rollover event, which Rob Faludi has provided an excellent solution for here. I made up a nice little over-analysis of the issue, available here. I have..... Listed under: [Clock – Timer Projects](#), [Projects](#)

351. [RGB flashing iPod dock from an old speaker](#)

Using an Apple Pro speaker, I made a flashing RGB LED iPod dock for about \$35. I recommend reading the entire 'ible before starting. Also, note that the volume is control from the iPod. It consumes minimal power in shutdown mode, and is controlled by..... Listed under: [Sound – Audio Projects](#)

352. [Arduino + Processing: Make a Radar Screen to Visualise Sensor Data from SRF-05 – Part 2: Visualising the Data](#)

This is where all the work is done to read and interpret the values from the servo and the sensor. If the readings are too erratic then you won't have nice shapes. Also if you don't allow enough time to the signals to be sent..... Listed under: [LCD Projects](#), [Sensor – Transducer – Detector Projects](#)

353. [An 8-Bit Waterfall using Arduino](#)

So far my Arduino projects have all needed only a small number of output pins. In a previous post I talked about moving some of the logic off the Arduino and into other integrated circuits in order to free up pins on the Arduino. While..... Listed under: [Other Projects](#), [Projects](#)

354. [Vibration Foam Speaker](#)

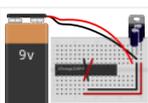
Concept: Very simple, using an arduino and the play melody basic program, create a music playing speaker out of a vibration motor and a piece of flexible foam. Instead of pulsing signal to a speaker, signal is pulsed to a motor varying how fast it..... Listed under: [Sound – Audio Projects](#)

355. [Arduino + Processing – Make a Radar Screen to Visualise Sensor Data from SRF-05 – Part 1](#)

First things first, we need to build our circuit. This is the easy bit! We'll be using the Arduino to control a servo that will rotate our sensor around 180 degrees. The Arduino will then send the value from the distance sensor along with the..... Listed under: [LCD Projects](#), [Sensor – Transducer – Detector Projects](#)

356. [Police Lights using an Arduino](#)

****DISCLAIMER**** I do not and will not take responsibility for anyone who gets in trouble for this, by either imitating emergency personnel, or using without a permit/licence. Updates! -I have shortened the code -Changed 16 LED's to 8 - Changed/added more flash patterns -Renamed variables As..... Listed under: [Car Projects](#), [LED Projects](#), [Projects](#)

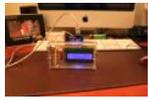
357. [Honey, I Shrunk The Arduino](#)

As you might be able to tell from recent posts, I've been doing quite a bit of work with an Arduino. I've now got at least one project that I'd like to make a little more permanent, rather than it just being a bunch of..... Listed under: [Other Projects](#), [Projects](#)

358. [Color Changing LED Tree](#)

Ever wanted an LED tree? Well now you can have your LED tree and eat it too (no, wait, you probably shouldn't).. Step 1: Gather the parts You will need: 1x ATtiny85 10x male header pins Solid core wire, 2 colors A bunch of LEDs.....

Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [LED Projects](#)

359. [Brute force attack a BIOS with Arduino](#)

The goal of this experiment is to convert the Arduino board into an USB keyboard plus a VGA sniffer to crack the password of a standard BIOS using the brute force attack method. There are no advantages in using this method, in fact this can..... Listed under: [Memory – Storage Projects](#), [Projects](#)

360. [Send and Receive MIDI with Arduino](#)

This instructable will show you how to use an Arduino to send and receive a variety of MIDI messages so you can start building your own MIDI controllers and instruments. First I'll talk a little bit about MIDI protocol, if you're just looking for sample..... Listed under: [Sound – Audio Projects](#)

361. [Arduino – A Basic Theremin](#)

Theremins are cool. Fact. You may also have heard of them as either aetherphone/ etherophone or termenvox/ thereminvox. Essentially its an electronic music instrument that plays a certain note depending on the position of your hand and its distance from an antenna. Building a very..... Listed under: [Sound – Audio Projects](#)

362. [Tweetsapien: Hack a Robosapien With Arduino to React to Tweets](#)

A really fun project sent into us by Thomas Meghe. He's translated it all from his native French, which is a technical achievement itself. If you'd like to see the original, you can find it here. Bored of your favorite Twitter client ? No problem,..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

363. [Walleye using Arduino](#)

Walleye is an interactive light installation which engages users in temporal gestural and bodily play. It generates temporal light propagation patterns, or a large scale very low resolution pixilated image (depending on how you look at it) based on the realtime movement of visitors in..... Listed under: [Other Projects](#), [Projects](#)

364. [How to build your own sugru robot – Fixbot](#)

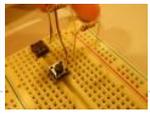
So you saw our video and you've fallen in love with Fixbot, have you? That's okay, it's understandable. We've fallen in love with it too. We have some great news! You can build your own Fixbot too, provided that you're okay with getting your hands..... Listed under: [Robotics – Automation Projects](#)

365. [Arduino – Basic Persistence of Vision](#)

I think this'll be the start of a few more projects for me. I've seen some cool LED PoV stuff (Persistence of Vision) with mounting displays on bikes, so hopefully I'll get round to doing something like that. Anyway as a start I've got 5..... Listed under: [LED Projects](#)

366. [How to make a servo leg using Arduino](#)

This instructable will show you how to create a simple servo leg that can be controlled by buttons on an arduino or via serial. Here is a video of the leg in action <http://www.youtube.com/watch?v=Q8i1nrPIJvo> Leg Materials: Popsicle sticks-make sure that all of them are



flat..... Listed under: [Motor Projects](#), [Projects](#)

367. [A Study in Non-Standard Distributed Computer Architecture using Arduino](#)



In the following tutorial, directions are given for creating a single node for the DoHas (Distributed Optical Harvard Architecture System). After constructing two of these nodes, a small distributed computer can be implemented which uses one node for sending instructions, mimicking input and the instruction..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#), [RTOS – OS Projects](#)

368. [BOXZ](#)



BOXZ is an open source robot platform for interactive entertainment! We connected Arduino, Plexiglass(or cardboard) Origami and your idea together, so we can easily and quickly build a remote robot by ourself! You can assembled it like LEGO! We can use it to playing football..... Listed under: [Game – Entertainment Projects](#), [Robotics – Automation Projects](#)

369. [Arduino – Getting my LCD Screen to work](#)



I've gotten hold of what I assumed was a compatible 16x2 LCD screen with my Arduino board – it's a Powertip PC1602F and uses a compatible display driver for the Hitachi HD44780 display chip. This is essentially what the Arduino LCD libraries are built around,..... Listed under: [LCD Projects](#)

370. [Hacked roomba and arduino snowballs into a Eurobot 2013 entry.](#)



It all started as a weekend project with my kids and soon enough I got sucked into a 4 month project with their school ! The idea was to get a small group of kids aged 6 to 9 to participate to a robotics contest..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

371. [DIY Driving Simulator using an Arduino](#)



If you haven't noticed, as soon as you clicked into this instructable, you are now following me if you weren't already, you Favorited the instructable, and you voted for this instructable in all contests it is entered in. Then the buttons all disappeared. It's okay..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#), [How To – DIY – Projects](#),

[Projects](#)

372. [BIKEDUINO – Stopping Point Predictor for bike riders](#)



The project consists in a Arduino that gets the speed of the bike from a dynamo and it controls a laser which points always to the point where the bike is gonna stop if it continues going at the same speed. Used Hardware: Arduino mini..... Listed under: [Car Projects](#)

373. [Version 2.0 Arduino Controlled Car Tracking System based on SMS](#)



This system is upgraded version of previous project... You will be able to track your car after you build this system, you will call the device then it will send you an sms which includes LAT, LON and Google Map link for just one touch..... Listed under: [Car Projects](#), [Phone Projects](#), [Projects](#)

374. [Building a Doodle Bot kit from DAGU](#)

Doodle Bot is a very simple beginners robot that can write messages using white board markers, jumbo chalk or crayons. The kit comes with all parts including an Arduino compatible controller and a screwdriver. You will need to supply 4x AAA batteries and a suitable.....

Listed under: [Robotics – Automation Projects](#)

375. [Algorithmic noise machine](#)

This project is a part of experiments done while doing an artist in residence at Instructables. You can see the other projects here. You can use bit-shifting as an alternative way of creating "music". This principle enables you to squeeze as much processing power as..... Listed under: [Sound – Audio Projects](#)

376. [Arduino & Processing – Getting values from SRF05 ultrasound sensor & serial port](#)

I've started to delve into Processing and passing values between Processing and Arduino. If you're wondering what Processing is, basically its an open source programming language for vizualising data that can interface with Arduino either by reading values/pins or by setting them. Just remember..... Listed under: [Sensor – Transducer – Detector Projects](#)

377. [SMS controlled Wireless Irrigation System using an Arduino](#)

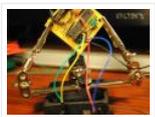
UPDATE 02/13/11 : Voting has started for the Sparkfun Microcontroller Contest. Please VOTE for me! UPDATE 02/26/11 : I won a second prize!! Huzzah! Thanks for all the votes guys! UPDATE 03/17/11: I would love to win a Laser cutter in the Epilog challenge as..... Listed under: [Phone Projects, Projects](#)

378. [Tissue Box Guitar – Light Strings using Arduino](#)

the idea of anything can be an instrumental music has been always in my mind so i made a wooden tissue box that i installed inside it a guitar of light strings Step 1: Building Box i made this wooden tissue box Step 2: Wiring..... Listed under: [Game – Entertainment Projects, LED Projects, Projects, Sound – Audio Projects](#)

379. [123D Scanner – Home made 3D Scanner](#)

Hey – have a look at my new project HERE In this project I built a 3D Scanner, that enables generating 3D models of physical objects. The files can later be viewed in 3D software (GLC Player, Sketchup, Rhino, or sites such as <http://3dfile.io>) and..... Listed under: [How To – DIY – Projects](#)

380. [Mint Tin Hero using Arduino](#)

A friend at work proposed a friendly competition between a few co-workers: to make something cool out of a Trader Joe's green tea mint tin. Anything – whatever our creative hearts desired. The prize? Nobody cared – we'd figure that part out later. I thought..... Listed under: [Game – Entertainment Projects, Projects](#)

381. [Track Honeybees With Temperature](#)

Data analysis coming soon! My school is kind of strange. We don't have a cafeteria, but we do have a four week course on "The Simpsons." We don't have a jungle-gym on the elementary playground, but we do have a half-buried firetruck. We don't have..... Listed under: [Temperature Measurement Projects](#)

382. [Arduino – \(Very\) Basic motion tracking with 2 PIR sensors](#)

Took me a little while to get started but I've managed to wire 2 PIR infrared sensors with an Arduino to sense motion either on the left or on the right side. The result will trigger an LED to represent each PIR sensor then I..... Listed under: [Sensor – Transducer – Detector Projects](#)

383. [Pachube Client using Strings with Arduino](#)

This example shows you how to answer a HTTP request using an Ethernet shield. Specifically, it connects to pachube.com, a free datalogging site. The example requires that you set up a pachube.com account, as well as a pachube feed (for more information on setting up..... Listed under: [Internet – Ethernet – LAN Projects, Projects](#)

384. [Making a Better Mouse Trap](#)

There are a lot of things this world needs at the moment. One of them is a better mouse trap. Mice are getting smarter every day and if we're not careful we'll end up with Planet of the Mice. Luckily, with the help of a..... Listed under: [Home Automation Projects](#)

385. [Arduino – motion triggered camera](#)

So having worked out that I can make a remote for my Nikon D80 to do some timelapse photography. I started thinking of things I can do to trigger the remote, below video shows it working but you'll need sound to hear the shutter going..... Listed under: [Sensor – Transducer – Detector Projects, Video – Camera – Imaging Projects](#)

386. [Accelerometer Table using Arduino Esplora](#)

This example simplifies the task of collecting data from the Esplora's accelerometer and graphing it with your computer. The Esplora sends keypresses to a connected computer about the state of the accelerometer. If you open a spreadsheet application, you can log the data from the..... Listed under: [Development Board – Kits Projects, Metering – Instrument Projects, Projects](#)

387. [Arduino Esplora Kart](#)

This example demonstrates how to turn your Esplora into a customized computer game pad. It uses the analog joystick and the four switches as inputs to a video game. The Esplora will appear to the computer as a standard keyboard, the computer will see joystick..... Listed under: [Development Board – Kits Projects, Game – Entertainment Projects, Projects](#)

388. [Arduino text'in](#)

Arduino text'in. Key Features: 24 relays controlled by 4 I/O lines! Cell phone text using your Arduino. This project hacks a cell phone to text using normally open relays. After investigating cellular modules on the internet I decided it looks not only rather pricy, but..... Listed under: [Phone Projects](#)

389. [Arduino – IR remote/ intervalometer for Nikon D80 DSLR](#)

I'm cheap and skint, yet I want to do timelapse photography with my Nikon D80 DSLR. Unfortunately that requires spending some cash on an intervalometer for time lapse photography which will set me back a sizeable chunk of cash. Or I could get a remote..... Listed under: [Video – Camera – Imaging Projects](#)

390. [My hat with full of stars](#)

Top hats are cool; just like bow ties. Not only are they stylish, but they give you a lot of room for incorporating techno goodness. I recently had cause to buy a tuxedo, which necessitated a kilt, and then a top hat. You know how..... Listed under: [Game – Entertainment Projects, Home Automation Projects](#)

391. [Arduino – Sonic range finder with SRF05](#)

A guide to using the SRF05 Distance Sensor with Arduino in order to calculate distances from objects. In this case I'm also altering the output of an LED with PWM according to how close an object is to the sensor. So the nearer you are..... Listed under: [Metering](#)

[– Instrument Projects](#)392. [Arduino Esplora Temperature Sensor](#)

This sketch shows you how to read the Esplora's temperature sensor. You can read the temperature sensor in Fahrenheit or Celsius. Circuit Only your Arduino Esplora is needed for this example. Connect the Esplora to your computer with a USB cable and open the Arduino's..... Listed under: [Projects](#), [Temperature Measurement Projects](#)

393. [Knock Block using an Arduino board](#)

Knock Block: a modern knocking framework Man has long wrestled with Time. Also, with knocking on things and not getting the time of day. We propose a knocking platform through which these fundamental needs are met. This is illustrated with the Knock Block KUI and..... Listed under: [Home Automation Projects](#), [Projects](#)

394. [Arduino Analog Inputs](#)

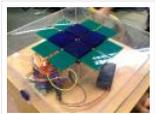
This week is all about analog inputs for the arduino. I'll show you how you can use a voltage divider circuit (see episode 3) and a variable resistor to make an analog sensor. [box type="note" color=" #202020 " bg=" #ffbb00 " font=" verdana" fontsize="14" radius="20 " border=" #000" Listed under: [Projects](#), [PWM Projects](#)

395. [Intervalometer for Sony NEX 5n](#)

This intervalometer used infrared LED To built intervalometer you need: Arduino Nano (or Arduino-compability). I used Nano V3 Serial LCD Joystick Module IR Led and resistor ~200 Ohm Switch Push Button Plastic enclosure Battery 9V Schematic is very simple Step 2: Connection Serial LCD has..... Listed under: [Metering – Instrument Projects](#)

396. [Arduino – Control a DC motor with TIP120, potentiometer and multiple power supplies](#)

A quick circuit showing how to control the speed of a DC motor with a potentiometer with your Arduino board. Also shows how to use a TIP120 transistor to allow the Arduino control a larger power supply. Transistors are 3 pin devices, which via the..... Listed under: [Metering – Instrument Projects](#), [Motor Projects](#)

397. [Combo Blocks using an Arduino](#)

Project by CU Boulder Thinks That Think students: Michelle Bourgeois, Charles Dietrich, and Ben Link Imagine having a safe in which the combo is any small object of your choosing. Perhaps it's your favorite coffee mug, or a bat man figurine. This project is based..... Listed under: [Home Automation Projects](#), [Projects](#), [Security – Safety Projects](#)

398. [Fart Operated Random Channel TV Remote using an Arduino](#)

OK, I know that sounds weird, but bear with me for a moment. My Pops really enjoys two things; 1) channel surfing and 2) farting. So one day I was over at <http://hackaday.com/> and read about a guy who used his Arduino to turn a..... Listed under: [Home Automation Projects](#), [Projects](#)

399. [Haptic Proximity Module \(HPM\) for Low Vision users](#)

The Haptic Proximity Module (HPM) seeks to enable people with low vision, or other vision impairments, to engage with their direct surroundings through vibration feedback from a range detector, and do so cheaply with readily available components. The aim of this instructables is to share..... Listed under: [Development Board – Kits Projects](#)

400. [Control a DC motor with Arduino and L293D chip](#)



This is a quick guide with a bit of extra info (pin configurations etc..) that I've learnt along the way on how to use the L293D with the Arduino, showing that we can: A) Use a supplemental power source to power the DC motor B).....

Listed under: [Motor Projects](#)

401. [Reaction Timer using an Arduino](#)



I am new to Arduino and wanted a project which would teach me different things. This got me involved with sound and the use of a LCD. This project is based on the Instructable posted by bertus52x11 which you can find here

<http://www.instructables.com/id/After-Dinner-Reaction-Time-Tester/> . While..... Listed under: [Clock – Timer Projects](#), [Projects](#)

402. [Buzz Wire Alarm Clock](#)



Does it happen to you to slide your finger across your phone's screen and turn the alarm off ... just because you have automated this task and don't even need to open your eyes? Well, let me present to you the alarm clock that WILL.....

Listed under: [Clock – Timer Projects](#)

403. [Making a 9v Battery DC power supply](#)



Rather than use the USB to power my Arduino board with a handy trip to the electronics store with some more knowledgeable people than I, I have constructed a 9Volt DC power supply. Taking a 9 volt battery, a 9v battery holder and a 2.1mm..... Listed under: [Battery Projects](#)

404. [Simple Ipod Controller using an Arduino](#)



This instructable will help you understand the iPod serial protocol, and how to send commands to an iPod using an Arduino. This instructable is only meant to show the basics of the protocol and is by no means complete. I only had enough hardware space..... Listed under: [Projects](#), [Sound – Audio Projects](#)

405. [3 LED Crossfade with PWM and Arduino](#)



This ones quite simple, just mix/ crossfade 3 separate LEDs using Phase Width Modulation (PWM) and Arduino. You will need 3 LEDs, I'm using a 5mm Red, Green and Blue so I can make the full light colour spectrum (When all combined they make white..... Listed under: [LED Projects](#), [PWM Projects](#)

406. [Making a Mayan Tzolkin Calendar](#)



OK, I will admit that I am a little obsessed with things Mayan at the moment, which explains why I wanted to make a Mayan Tzolkin calendar. I modeled the general layout and fabrication on the very nice Sleek Word Clock by scottbez1 which you..... Listed under: [Clock – Timer Projects](#)

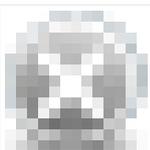
407. [Small form factor DIY Arduino on stripboard](#)



This board needs FTDI cable to program it. It is not Arduino compatible in the meaning of taking shields (just like every small form factor board isn't). But it has all the same pins (except 3.3V power and Vin*) available as female headers.

The input..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#), [Projects](#)

408. [Robot Snake](#)



Purpose This project was built for the Things that Think undergraduate/graduate class CSCI 4830-7 and CSCI 7000-7 for the University of Colorado at Boulder. Our group consisted of one graduate and two undergraduate students. We worked on the project for 8 weeks, most of the time trying..... Listed under: [Game – Entertainment Projects](#), [Robotics – Automation Projects](#)

409. [Controlling a Servo with Arduino](#)

Very simple basics of building a circuit to control a servo using Arduino and PWM For this you will need: Arduino Board – I'm using a Duemilanova ATMEGA328 Arduino Sketch software – I'm using version 0015 Arduino Servo Library found here save it to lib/targets/libraries..... Listed under: [Motor Projects](#)

410. [Use your android phone sensors on the arduino](#)

Hello, this is my very first step-by-step instructable, and today, we're going to learn how the sensors in your android smartphone can communicate with your arduino. In modern smartphones, there are a lot of useful sensors for an ingenious arduino project. I have a motorola..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

411. [Two ways to reset arduino in software](#)

If you want to RESET Arduino from the beginning without manually pressing the RESET button, there are a few ways. Here are two ways, using minimal wiring / circuitry. Step 1: Using 1 wire connected to the RESET pin 1. electronically, using only 1 wire..... Listed under: [Arduino Programmer Projects](#)

412. [Siduri – An Arduino Control Smart Coaster](#)

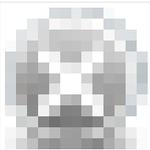
Siduri named after the Sumerian god of happiness and merriment, is a smart coaster for your drinks. It recognizes when a glass is near empty and then glows yellow to alert waiters that you will be in need of a refill soon. Designed specifically for..... Listed under: [Home Automation Projects](#)

413. [How I'm building my bi-copter with Android and Arduino](#)

Last year I was fascinated by the "How to build your own Quadrocopter" by Lenz Grimmer and decided that somehow I should try to do a similar thing. This talk is about the way I'm building a bi-copter using lessons learned for last year's talk..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#), [Robotics – Automation Projects](#)

414. [Discreet Data Logger using Arduino](#)

There is no better way to hide a covert device than to stick it inside a larger conspicuous device. That said... Essentially, this is a guide for making a data logging system for use with the breathalyzer microphone. To accomplish this, an Arduino and a..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#), [Projects](#)

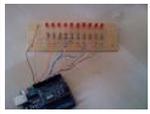
415. [A DVD Player Hack](#)

This is a description of an open source/open hardware project of a remotely controlled Arduino (Freeduino) based clock/thermometer utilising power supply and VFD panel from a broken DVD player in a custom made acrylic enclosure. The aim of the project was to demonstrate what could..... Listed under: [Video – Camera – Imaging Projects](#)

416. [Texting mat using arduino](#)

Lusha and May created a "Text-Mat". This surface can allow the user to write and send messages using one's feet. This text-mat is designed to send secret messages during meetings or classes. The design utilizes conductive fabric and thread, as well as a flora-board. The..... Listed under: [Home Automation Projects](#)

417. [The KITT-duino, DIY Larson Scanner with an Arduino](#)



IMPORTANT: CODE IS NOW UPDATED. FIXES INCLUDE ADDING AN INTEGER VALUE TO MANIPULATE TIMING AND FIXING A DOUBLE-BLINKING LED. Thanks. It is my understanding that many Larson Scanners can only pulse from side to side. I felt that that needed to be changed, seeing as..... Listed under: [CNC Machines Projects](#), [How To – DIY – Projects](#)

418. [Low cost digital microscope with automated slide movement using arduino](#)



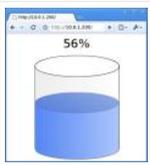
This is an easy-to-implement product modification that will be extremely useful for clinicians, pathologists, researchers or other microscopy enthusiasts interested in capturing whole slide images or creating virtual slides for later use. The device allows one to take multiple images of the slide under high..... Listed under: [Medical – Health based Projects](#)

419. [Obstacle avoidance Arduino robot – build your own larryBot](#)



So after 5 previous versions that had various flaws, I now have an Arduino robot that actually works and although basic is very cheap – although there a probably a few more flaws so please point them out to me but this is a good..... Listed under: [Robotics – Automation Projects](#)

420. [Water Tank Depth Sensor using Arduino](#)



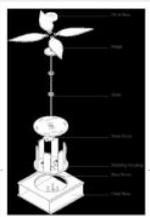
Water is a precious resource in many parts of the world, and many people rely on water tanks to supplement their water supply by storing collected rainwater or water pumped from a well or bore. But how do you measure how full a tank is?..... Listed under: [Sensor – Transducer – Detector Projects](#)

421. [Arduino Dragon Wings](#)



Hello World!! I am making this Instructables on how to make arduino controlled dragon wings. XD I planned on wearing these dressed as Smaug to 'The Hobbit Desolation of Smaug' premier but I didn't complete the entire outfit in time, but I will continue working..... Listed under: [Game – Entertainment Projects](#)

422. [Augmenting Plant Behavior Through Robotics using Arduino](#)



The PhytoBot is a semi-intelligent plant which responds to external stimulus (light intensity and light location) and responds to it as a phototropic plant would. Essentially it is designed as a piece of interactive artwork for operation over a long period of time. The motivation..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

423. [Rabbit Ears on a Cap using Arduino](#)



We are students from Singapore Polytechnic. After looking at the famous Nekomimi Arduino Cat Ears, we decided to give it a try to help us familiarise ourselves with the accelerometer and the arduino. Using the materials that we had on hand, we managed to produce..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

424. [Geoweaver: A Walking 3D Printer Hexapod using arduino](#)



Geoweaver is a student designed (team members Jia Wu, Mary Sek, and Jeff Maeshiro) robot created in the Creative Architecture Machines advanced options studio at the California College of the Arts (CCA) in San Francisco, California, taught by Jason Kelly Johnson of Future Cities Lab..... Listed under: [CNC Machines Projects](#)

425. [Programmable auto filter interface for C64 using Arduino](#)

Overview A software / hardware combo that allows for control of the analog filter inside a Commodore 64 that is running Cynthcart from a host computer (eg, Macbok, PC). Software • 16-step filter sequencer • Set the speed of the filter sequence (with intervals between..... Listed under: [Arduino Programmer Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

426. [Control Access of Arduino YÚN with MySQL, PHP5 and Python](#)

Hello Friends! Well, as you know, in September the new premiere shield of Arduino, Arduino YUN. This little friend has a Linux embedded system with which we can run anything you can think of (at least so far). While there is very little information on..... Listed under: [Robotics – Automation Projects](#)

427. [All in one Remote using Arduino](#)

Introduction August, 2007 One of my other hobbies is photography, and, about a year ago, I purchased a new digicam – a Panasonic FZ30. I joined the Panasonic forum on the dpreview site. One of the posters, a programmer and electronic hobbyist, designed a nifty wireless..... Listed under: [Projects](#), [Radio Projects](#)

428. [Simple Arduino Wing Shield](#)

I buy a lot of these stackable Arduino header sets because they are handy for a lot of things. I make some breakout boards with them, I use them to add some clearance between a taller shield and the next shield that I am stacking..... Listed under: [Development Board – Kits Projects](#)

429. [Polar Plotter on Arduino and MakerBeams](#)

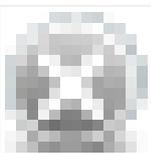
The project A polar plotter is a plotter with a rotating, extendable arm. Its characteristics differ greatly from those of a traditional plotter, which in most areas have a superior design. You could say the polar plotter is more portable or something, but mainly I..... Listed under: [CNC Machines Projects](#), [Projects](#)

430. [Build the Remote Control Bobble-head Bobbler! using arduino](#)

Bobble-heads!!! Every sports fan loves em, but they're kind of boring, just sitting frozen on your shelf 😞 I thought it might be fun to create an Automatic Bobble-head Bobbler something that can wake that old bobble-head up and get him nodding away. I finally found..... Listed under: [Robotics – Automation Projects](#)

431. [Clock with Meggy Jr RGB using Arduino](#)

There is a saying: "If all you have is a hammer, everything looks like a nail". Well, when I see a display, I think of clocks 😊 I will show you here how to easily make a simple digital clock by hacking Meggy Jr RGB..... Listed under: [Clock – Timer Projects](#), [Projects](#)

432. [Let's cook: 3D scanner based on Arduino and Processing](#)

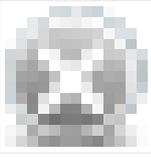
Ever wonder of cypaste method, usable in real life, not only in virtual reality? Me too. It is 21th century, and those are nearer than most of all can imagine! This is possible thank to 3d scanners and printers. So let's try to scan something!..... Listed under: [How To – DIY – Projects](#)

433. [Motion Sensing Eye using arduino](#)



I have always wanted to make something with my LED dot matrix display, and so when I found a old alarm motion sensor I knew just what to make, a Motion Sensing Eye! This instructable will hopefully finish with you having a working dmd, that..... Listed under: [LED Projects](#), [Sensor – Transducer – Detector Projects](#)

434. [LED Clock](#)



A 24-hour clock with hour, minute, and second indicators. Here's the catch, despite being a digital media (LED's) it is still displaying using an analog method (circles!). I finished making this clock months ago but did not bring it with me to school so I..... Listed under: [Clock – Timer Projects](#), [LED Projects](#)

435. [Arduino Webserver Control Lights, Relays, Servos, etc....](#)



In this project using only an Arduino with an Ethernet shield. I'll be controlling one LED and a servo, but you can apply this method to control a DC motors, buzzers, relays, stepper motors, etc.. Overview: When you upload the the code provided in this..... Listed under: [Internet – Ethernet – LAN Projects](#)

436. [Vehicle Telemetry Platform using Arduino](#)



Ever wondered what goes on under the hood of your car? Wish you could peek inside the engine management system and read values from it? Annoyed that your dashboard displays a cryptic "Check Engine" light (yep, the engine is still there) but gives absolutely no..... Listed under: [Car Projects](#)

437. [Weather Station Receiver using Arduino](#)



The incredible popularity of home weather stations shows that it's not just farmers who are interested in the weather. Many people want to be able to track and record weather events within their local environment rather than relying on a state or national weather service..... Listed under: [Sensor – Transducer – Detector Projects](#)

438. [Arduino Beer Pong Arcade](#)



We are going to be making a flashy beer pong table. The table lights up as cups are eliminated and old style arcade sounds are played. This games elevates the subtle art of BEER PONG to a new level. A sporting level. A competitive,..... Listed under: [Game – Entertainment Projects](#)

439. [Lunch Decider Wheel using arduino](#)



The lunch decider wheel is basically a carnival-style wheel that spins every day at 11:45am and selects what is for lunch. It came about on account of my perpetual indecision on this very important culinary matter. In fact, this device does more than just decide..... Listed under: [Game – Entertainment Projects](#)

440. [Arduino: Making a set of traffic lights](#)



THIS PROJECT IS STILL A WORK IN PROGRESS FEEDBACK APPRECIATED!!!This tutorial will step you through the process of creating a set of controlable and configurable traffic lights whilst also teaching you the basics of Arduino. Some knowledge is needed and I highly recommend reading and..... Listed under: [Car Projects](#), [Projects](#)

441. [3D Printed Webcam Controller](#)



The camera controller box is an easy way to rotate a webcam from a PC or remotely through the internet. Step 1: Materials and 3D files In this project I used a Teensy 2.0 micro-controller since it was available, but you can use any other MCU like an ATtiny85..... Listed under: [Internet – Ethernet – LAN Projects](#), [Video – Camera – Imaging Projects](#)

442. [Woooshing leds – Rotated animation by arduino](#)

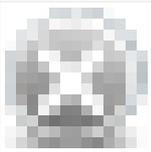
This project allows you draw in the air letters, symbols or other shapes – as you like. Controlled by the Arduino, the 7 simple leds blinking on and off – creating the illusion of floating text in the air. This combination of simple components with..... Listed under: [LED Projects](#)

443. [UnDecima Audio Output from Arduino](#)

I already have one project where arduino outputs audio signal to USB speakers via software 10-bits PWM. In first, I was not satisfied with quality of sound generated via PWM. There are just not enough speed in arduino engine to run PWM well. For example for..... Listed under: [Projects, Sound – Audio Projects](#)

444. [Security / Automation Sensors using Arduino](#)

Security system sensors such as motion detectors, reed switches, pressure mats, glass-break detectors, infra-red beams, and conductive film can be very handy for all sorts of things including home automation systems, interactive art installations – and sometimes even security systems! Almost all security system sensors..... Listed under: [Security – Safety Projects, Sensor – Transducer – Detector Projects](#)

445. [Interval Long Exposure Camera](#)

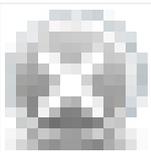
There's a real beauty in long exposure photography. Hours and days and weeks and months and even years can be condensed onto a single frame, and that frame will catalog the constants in our fast paced and forever changing lives. However, the issue is that..... Listed under: [Video – Camera – Imaging Projects](#)

446. [Lego Technic Car with Arduino + XBee Wireless Control](#)

I was perusing Instructables one fine winter Saturday, when my 8 yo son came in and peered over my shoulder and saw this: <http://www.instructables.com/id/RC-Lego-Car/> by sath02. My son is a huge fan of all things Lego, and loves robots and cars, and this was right..... Listed under: [Game – Entertainment Projects](#)

447. [Visual Navigator Making it MOBILE using Arduino](#)

Obstacle avoiding vehicle, continue in "3D Laser Range Finder" series (project 1, project 2). The basic idea is the same, measuring distance using red laser pointers, CCD analog camera and Arduino UNO. Modification was made in geometry. Two lasers were set for "far field"..... Listed under: [Game – Entertainment Project Ideas, Projects, Robotics – Automation Projects, Sensor – Transducer – Detector Projects](#)

448. [The Adventure of Electricity: An interactive light diorama](#)

Where does electricity come from? Who invented the light bulb? How do cities use this technology today? These are just a few questions that we hope to address in this interactive diorama, The Adventure of Electricity! This project was designed for educational purposes so that..... Listed under: [Game – Entertainment Projects](#)

449. [8x8x8 LED Cube with Arduino Mega \(+Sound +PS controller +Game\)](#)

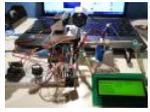
This is a instructable which is based on the Cube by Chr, (<http://www.instructables.com/id/Led-Cube-8x8x8/>) by SuperTech-IT, (<http://www.instructables.com/id/CHRs-8X8X8-LED-Cu...>) and by das-labor.org, (http://www.das-labor.org/wiki/Borg3d_Bauanleitung...) but i think its better and easier. I started this Project without any skills from soldering to programming. First of..... Listed under: [Game – Entertainment Projects](#)

450. [Tears of Rainbow using an Arduino](#)



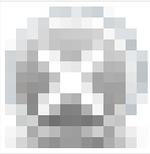
It's time to release new updates for my first (ever) project with Arduino, "Color Light Music". From artistic perspective, VU BarGraph style (IMHO) is the best one for spectral dynamic representation, and not much could be improved on this side. But this time, it cross my..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

451. [Joystick controlled Camera using Arduino](#)



Hi, First of all, my English is not perfect =) I've seen many projects with Arduino that describes how to control 2 servo's with a joystick or use a lcd screen. All of the projects that i have seen are all separate things. So i..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#), [Video – Camera – Imaging Projects](#)

452. [HandSight: A Glove for the Blind to Feel Shapes and Navigate Obstacles](#)



HandSight is a prototype glove to aid the blind. It can sense the lightness or darkness of a surface with tactile feedback from a vibration motor for each individual finger. It can also sense distance from physical objects or obstructions and indicate direction and distance..... Listed under: [Medical – Health based Projects](#)

453. [Arduino IR Musical Stairs](#)



This is a small scaled musical stairs! It was a project that had a deadline; had only two days to build it. So, it is a very small scaled project, but still serves its purpose! IR Sensor (receiver) that I used is TSOP38238 from Adafruit,..... Listed under: [Home Automation Projects](#)

454. [Gyro Camera for Motorcycle using Arduino](#)



As seen in MotoGP Race, the rider is seen riding through corners while laying aside his bike to the left and right. But there is an interesting moment when the motor looks to collapse sideward, the front views remain horizontally. How could that be? Such..... Listed under: [Car Projects](#), [Projects](#), [Video – Camera – Imaging Projects](#)

455. [Building a device that clips to your belt](#)



Our goal in this step-by-step instructable is to build a device you can clip to your belt and wear throughout the day. This device will log data that, when downloaded to a back-end server system, will provide a report showing the location history of your..... Listed under: [Clock – Timer Projects](#)

456. [Hidden Wall Outlet Safe \(w/Arduino Lock\) using arduino](#)



Stash your valuables where no one will ever suspect. Wall outlets are perfect for stashing valuables since you have tons of them at home. You must be crazy enough to search every household outlet for a secret stash. Probably, no one would even think of..... Listed under: [Home Automation Projects](#)

457. [Power Arduino with a cellphone](#)



Old cellphones are easy to acquire and they have built in lithium charging circuitry. What a wonderful base for a power supply for small mobile things. I hooked up a cellphone to the arduino with the ability to charge the cellphone when you plug the..... Listed under: [Phone Projects](#)

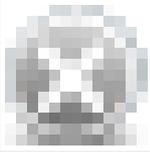
458. [DIY Arduino Motor Shield \[for only \\$8!\]\(L298N 2x4A\)](#)



Today, I'm going to show you how to make an Arduino motor shield (driver) at a low cost. It works splendidly, it posses almost all the characteristics of the original Arduino motor shield. It's almost considered as a clone. The original Arduino motor shield has the..... Listed under: [How To – DIY – Projects](#), [Motor Projects](#)

459. [Intermediate Arduino: Inputs and Outputs using arduino](#)

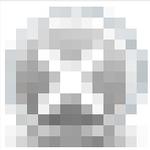
Continuing from my Intro to Arduino post, this Instructable will go over some slightly more advanced topics with Arduino, specifically relating to controlling and managing many inputs and outputs. The next class covers how to connect the Arduino's inputs and outputs to MIDI. Parts List:..... Listed under: [LED Projects](#)

460. [EL Wire Hat: Sequenced and Sound Activated with Remote Control](#)

Welcome to the Instructable guide of my EL Wire hat with some fun features. The concept is an EL Wired hat with 8 sequenced EL wires controlled by a wired remote. Multiple speed controllable sequence modes are pre-programmed into an Arduino UNO, including a sound..... Listed under: [Game – Entertainment Projects](#), [Sound – Audio Projects](#)

461. [Earth Globe Rotating With Arduino Or Raspberry Pi Controlled Stepper Motor using arduino](#)

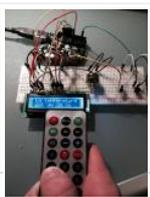
This instructable describes how to upgrade your globe to a motorized version. It looks amazingly better on the shelf when it is slowly rotating, and any demonstration with your kids (to explain the day/night cycle or the seasons) will gain in interest. No need to..... Listed under: [Motor Projects](#)

462. [TV Remote Controlled Car](#)

Nothing is worse than losing the controller that came with your remote control car. Replace that sucker with an arduino and the one remote that always seems to be around, the TV remote! Remove these ads by Signing Up Step 1: Materials The materials for..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#)

463. [Arduino Solar Cell Tester](#)

When I'm building Solar Shrubs and other solar-powered creations, I often scavenge cells from various off-the-shelf devices such as solar garden or security lights. But these cells are rarely labeled as to their voltage, current, and power output. So it's off to my bread-boarding station. First, I put each cell under..... Listed under: [Battery Projects](#), [Metering – Instrument Projects](#), [Projects](#), [Solar energy projects](#)

464. [Capteur temperature choix du type de degres par infrarouge using arduino](#)

ENGLISH VERSION HERE Dans ce programme nous allons voir comment capter une température et afficher sa valeur sur un lecteur LCD en choisissant si on veut l'afficher en°C ou °F grâce à une télécommande infrarouge. Dans ce tuto j'utilise: -Une carte SainSmart (similaire à Arduino..... Listed under: [LCD Projects](#)

465. [A World of Possibilities with Java ME + Bluetooth + Arduino](#)

"This presentation shows how to easily go from user stories to automated integration tests that themselves read like user stories. You can accomplish this by using custom domain-specific languages. Too often our automated integration tests rely on coding and intimate technical knowledge of our systems,..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

466. [Smart Snow Globe \(gives snow day alerts\) using arduino](#)

What does a smart snow globe do? It tells you if tomorrow's going to be a snow day! Is it snowing tonight? Will you have the day off from school or work tomorrow? Put this snow globe next to your bed when you go to..... Listed under: [Radio Projects](#)

467. [4x4x4 interactive LED-cube with Arduino](#)

To explain my 4x4x4 interactive LED-cube published before, a bit more clear, I will try to make my first step by step instructable. This 4x4x4 cube is interactive by using the top four corner LEDs both as LEDs and as sensors that will react on..... Listed under: [LED Projects](#), [Projects](#)

468. [IR Remote Controlled Color Changing Cloud \(Arduino\)](#)

CLICK HERE FOR THE UPDATED INSTRUCTABLE: <http://www.instructables.com/id/IR-Rainbow-Cloud-ver-1/> This is a project I created for a Digital Art and Installations class. The class covered basics of several types of programming, and our projects were meant to be an interactive cross between art and technology. This was a fun..... Listed under: [Game – Entertainment Projects](#)

469. [A Voice Shield for Arduino Board](#)

The objective of this project is to build an Arduino voice shield to empower thousands of voice related applications! All this mostly thanks to an integrated ISD1790PY chip. This particular voice/TTS feature can be useful to integrate voice messages in alarm systems, to implement generic..... Listed under: [Projects](#), [Sound – Audio Projects](#)

470. [Open Bitcoin ATM using arduino](#)

The world's first completely open-source Bitcoin ATM for Education and Experimentation. <http://openbitcoinatm.org> for more information. Step 1: Fabricate Box and Faceplate Out of a piece of 12"x12" aluminum sheet metal, cut two rectangles and drill six rivet holes and four holes to attach the bill acceptor..... Listed under: [Robotics – Automation Projects](#)

471. [Arduino Wii nunchuck and Wii motion plus with updated code for IDE 1.0.2 and LEDs](#)

So, I was trying to hack my Wii nunchuck because I want to control motors and lights with the Wii nunchuck. The first problem that I found was how to connect the control without an adapter, I was planning to make one, but when I..... Listed under: [LED Projects](#)

472. [LED Dawn / Sunrise Alarm Clock, Nightlight & Security Light – Arduino Compatible](#)

As the nights gradually lengthened in autumn 2011, I discovered the joys of Arduino and thought that it would be a great way to implement something that I have wanted for a long while – a gentle way to wake up on a winter's morning. Listed under: [LED Projects](#), [Security – Safety Projects](#)

473. [Programming the Arduino I/O pins](#)

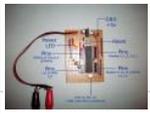
Overview The Arduino Uno is a microcontroller board based on the ATmega328 (datasheet). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header,..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

474. [Arduino, Sensors, and MIDI](#)

Now that you're up to speed on using Arduino's inputs and outputs, this Instructable will give you everything you need to get started using sensors to trigger MIDI notes from Arduino. This post is the last installment in a series of workshops I led at..... Listed under: [Home Automation Projects](#)

475. [Stripboard Arduino](#)

In this, my first Instructable I'm going to show you how to make a stripped down Arduino for a fraction of the price, using Stripboard/Veroboard. Material List: 1x Atmel ATmega168 = \$2.65 1x Stripboard = 72p 1x 7805 Voltage regulator = 26p 2x LEDs =.....



Listed under: [Development Board – Kits Projects, Projects](#)

476. [Control an Arduino With a Wristwatch \(TI eZ430 Chronos\)](#)



The watch The Texas Instruments eZ430 Chronos is a cool gadget. It has bidirectional radio communication, and a whole bunch of sensors: temperature, pressure, acceleration. In fact, it is a development kit for the MSP 430 (a low-power microcontroller), that TI packaged as a watch..... Listed under: [Clock – Timer Projects](#)

477. [SuperScope: Circuit Simulation through Arduino-Processing Interface](#)



into the program where you can physically manipulate them. Arduino tests for the value of the component (a capacitor, inductor, resistor, or waveform of specific frequency) then sends the data to Processing. Imported components can then be plugged into circuit schematics. SuperScope builds upon the..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects](#)

478. [Improved Simple Wing Shield using arduino](#)



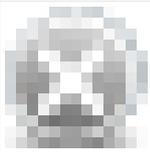
Not too long ago, I made my own version of the popular Wing Shield out of some spare parts and scraps of perf board I had laying around. Instead of the screw terminals that the regular wing shield uses, I used some female headers that..... Listed under: [Home Automation Projects](#)

479. [A credit card sized Ethernet Arduino compatible controller board](#)



I love the Arduino as a simple and accessible controller platform for many varied projects. A few months ago, a purchased an Ethernet shield for my Arduino controller to work on some projects with a mate of mine – it was a massive hit -..... Listed under: [Development Board – Kits Projects, Internet – Ethernet – LAN Projects, Projects](#)

480. [Make Your Own GRBL CNC Pendant](#)



So you just finished your DIY CNC machine, set up GRBL and even cut your first part. Now what? Well, did you know that as of GRBL v0.8 there are pinouts some really useful commands such as Cycle Start, Feed Hold and a Soft Reset?..... Listed under: [CNC Machines Projects](#)

481. [How to access 5 buttons through 1 Arduino input](#)



Using this method, I'll show you how you can access 5 (or even more) inputs through 1 Arduino pin. These buttons will only be read correctly if only one is pushed at any time though. As we go through it I'll explain whatever background info..... Listed under: [How To – DIY – Project Ideas, LED Projects, Projects](#)

482. [LittleBitty Joe using arduino](#)



Say Hello to littleBitty Joe! Joe is my school's mascot! Speak to Joe and watch his eyebrows lift, whiskers vibrate, eyes illuminate, heart spin and hear him ROAR! Not only does his roaring affect work with our project, but it can definitely work with your..... Listed under: [Game – Entertainment Projects](#)

483. [Digispark DIY: The smallest USB Arduino](#)



Digispark is an ATtiny85 based microcontroller development board come with USB interface. Coding is similar to Arduino, and it use the familiar Arduino IDE for development. Digispark is copyrighted by Digistump LLC (digistump.com) and the full license is here: <http://digistump.com/wiki/digispark/policy> Specification: Support for the

Arduino IDE..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects](#)

484. [3D-Printed Biologically-Inspired Robotics](#)



I have been spending the last few months doing research into biologically inspired robotic structures. While my approach may seem formalistic in nature, these devices were simply a means for ultimately conducting social research. This desire stems from my experience building Simple Bots, and their..... Listed under: [Robotics – Automation Projects](#)

485. [Light Clapper using arduino](#)



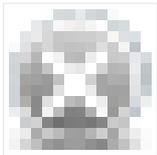
This is a project that I quickly made one night because I wanted to 'clap' to turn off and on the light in my room! I have a small room for myself, so I basically have no other noise around. So, I was able to..... Listed under: [Home Automation Projects](#)

486. [RC Car Anti-Crash System Using Arduino](#)



Hi guys! So for my electronics class this year we were tasked with creating some kind of electronic gadget in order to demonstrate what we learned over the semester. Being a car-loving type of guy, I decided to get a cheap RC car and see..... Listed under: [Car Projects, Projects, Security – Safety Projects](#)

487. [Arduilay](#)



Arduilay is an 8 channel AC relay box for use with Arduino, Max/MSP, Processing, etc. I designed this system as an alternative to the USB>DMX 4 channel relay option. While DMX gives you dimming control, the setup is easily 5 times as expensive as this..... Listed under: [Development Board – Kits Projects](#)

488. [ARDUINO Laser 3D Tracking or Range Finder](#)



The idea of using triangulation for distance measurements is well known since Pythagorean time, when his brilliant formula become available for mathematicians. What is new in this design, is lasers power control via "blooming" effect of CMOS camera. Here this "negative" effect was put to..... Listed under: [Metering – Instrument Projects, Projects, Sensor – Transducer – Detector Projects](#)

489. [Cheap and effective Sous Vide cooker \(Arduino powered\)](#)



Sous-vide cooking is a great new way of cooking food. I will not explain why and how it works here... for great recipes and explanations, you can check out those guys : <http://modernistcuisine.com/2013/01/why-cook-sous-...> Unfortunately, a good (and I mean precise to the half °C) sous-vide..... Listed under: [Home Automation Projects](#)

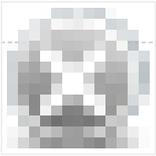
490. [2 player Pong using Arduino](#)



I started with the Instructable from Kyle Brinckerhoff; <http://www.instructables.com/id/Ardu-pong-the-Arduino-based-pong-console/> Thanks Kyle! and the following at Make magazine <http://blog.makezine.com/archive/2007/08/arduino-pong.html> and I see the original code is attributed to Pete Lamonica Thanks Pete!! I am using the paddles instead of the joy stick and I have made..... Listed under: [Game – Entertainment Projects, Projects](#)

491. [Arduino Step Sequencer](#)

I was wondering about on making a sequencer, a big 16 step sequencer was what I wanted to make. To it's full extension with lots of features including single leds for each step, midi input and output, etc. Then I realised that I should start from a..... Listed under: [Sound – Audio Projects](#)

492. [ASCII Table using Arduino](#)

Demonstrates the advanced serial printing functions by generating a table of characters and their ASCII values in decimal, hexadecimal, octal, and binary. For more on ASCII, see asciitable.com Circuit image developed using Fritzing. For more circuit examples, see the Fritzing project page [None, but the Arduino has to.....](#) Listed under: [How To – DIY – Projects, Projects](#)

493. [A Simple and Very Easy Inverted Pendulum Balancing Robot](#)

Let's make a simple inverted balancing robot, and operate it. You need only half a day to do them, if you have an arduino and some materials. [a video of a robot you would make] introduction: After a few work with arduino, I have thought..... Listed under: [Robotics – Automation Projects](#)

494. [Wii Nunchuck Arduino Spirit Level](#)

Thanks to: <http://jeonlab.wordpress.com/> Since I have read an article on todobot blog, I bought a couple of Wii Nunchucks from ebay. I don't remember how much I paid for them, but it was much cheaper than buying the accelerometer breakout boards. With the nunchuck data reading..... Listed under: [Development Board – Kits Projects, Projects](#)

495. [Nama Instrument 1.0](#)

A motion sensing soft-circuit interface. The following instructable will guide you through the construction of your own personalized Nama Instrument. I'd love to hear some feedback. Hope you like it and it serves you somehow! :) Access <http://www.viraseres.com/nama> to download the project's open source files..... Listed under: [Game – Entertainment Projects, Home Automation Projects](#)

496. [Wex, the One Eyed Watcher using an Arduino](#)

Wex detects your location with ultrasonic sensors then follows you with his one flashing eye. His red "heartbeat" can be seen through his mouth. Step 1: Parts needed include: Arduino Two ping ultrasonic sensors Futaba s3103 servo Radio Shack 276-0016 7 color led Radio Shack Listed under: [Projects, Robotics – Automation Projects](#)

497. [OpenSquare – Write big with a RC car](#)

Hi there, You're going to transform any RC toy car into a big message writer that can be used to transform your city squares into witty messages, political statements or beautiful drawings, and for less than 20\$. The idea is to drop a trail of..... Listed under: [Car Projects](#)

498. [Building a Sentry Gun with Laser Trip Wire System and Arduino](#)

NOTE THIS PROJECT IS DONE BY A GROUP OF STUDENTS FROM SINGAPORE POLYTECHNIC. Concept: Trigger gun when laser is blocked by intruding object. Note: Tilting is included for expandability but not used in this project. Skill Level: Basic soldering and basic metal works Things You..... Listed under: [Home Automation Projects, Projects, Security – Safety Projects](#)

499. [I just wanna hold your hand](#)



Conducting energy through people to stimulate tangible public interactions <http://ijustwannaholdyourhand.com/> <http://vimeo.com/56350598> What did we do? We put together an Arduino, some wire, a Mac mini and a DLP Projector, then created a pair of hands out of aluminum. We additionally 3D printed some wall plates..... Listed under: [Game – Entertainment Projects](#)

500. [How to Control a Ton of RGB LEDs with Arduino & TLC5940](#)



This video explains how to use the 16 channel PWM controller TLC5940 The CODE: //Texas Instruments TLC 5940 with Arduino //www.kevindarrah.com #include <SPI.h>//Serial Peripheral Interface Library byte ch=0, chbit=0, spibit=0, spibyte=0;// variables used by tlc sub routine int SINData;//variable used to shift data to the..... Listed under: [LED Projects, Projects, PWM Projects](#)

501. [Forget Me Not- Remote Flower Watering](#)



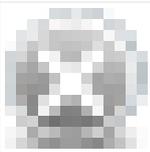
Hi everyone, Lucy Matchett, Nicole Yi Messier, and Joselyn McDonald (Snax_and_Macs) made a remote flower-watering device so you can water your loved ones' plants when you water your own. We used Arduinos, a photoresistor, a servo, Arduino and Processing sketches, Spacebrew, and a little elbow..... Listed under: [Home Automation Projects](#)

502. [How to build an Arduino synth](#)



This is a super simple and easily customizable little synthesizer. This is my first time using the Arduino and also with acrylic, both I found very fun to work with though. This is also my first Instructables so hopefully I have explained this well enough..... Listed under: [How To – DIY – Projects, Projects](#)

503. [Palm Arduino V3](#)



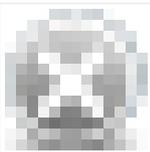
I design and create this Palm Arduino V3 prototype PCB, as I was tired of recreating Arduino Compatible on perf board every time I prototyping a new project, especially when I had to spend a lot of time tracing the wiring to see that I..... Listed under: [Development Board – Kits Projects](#)

504. [Smart Distance Measuring Tape v2](#)



After posting up the v1 of my project many people requested an more detailed instructable. So i decided to start with a new one with a little upgrades to my previous instructable. What does this thing do? Well its quite simple it is just an..... Listed under: [Metering – Instrument Projects](#)

505. [2 Ways to Papercraft Stopmotion](#)



Good morning, please take a seat and watch that tofu wobble. This is not CGI, it is honest work of a papercraftsman. These are, in fact, 16 different papercubes that switch places in each frame. That technique is commonly known as replacement stopmotion. Problem: It only..... Listed under: [Game – Entertainment Projects](#)

506. [Building an Open Archival Scanning Robot Using Python and Arduino](#)



Project Gado is an initiative which aims to create an open-source archival scanning robot which small archives can purchase for \$500 and use to autonomously scan their photographic collections. This talk presents the Gado 2, a prototype... Listed under: [Internet – Ethernet – LAN Projects, Projects, Robotics – Automation Projects](#)

507. [Bird cage LED daylight simulation system](#)



Sometimes you get a chance to combine helping out your family with a nice hobby project.. In this case my father in law was looking for a lighting system for his bird breeding cages. A daylight simulation system to be exact. He asked me to..... Listed under: [Home Automation Projects, LED Projects](#)

508. [Arduino Solar Shield – A DIY solar source for your projects without waiting for PCBs](#)

This instructable is a basic version of Bley Joel's ("It's nine o'clock on a Saturday, the regular crowd shuffles in") Solar Shield, and it should work for most arduinos. I've tested it with SparkFun's Arduino Pro, and the new Leonardo. Myself and the other Solar..... Listed under: [How To – DIY – Projects](#), [Projects](#), [Solar energy projects](#)

509. [Audio Input to Arduino](#)

The easiest way to connect an audio signal to your arduino, is to build a simple 3 components (2 resistors plus cap) circuitry shown on the first drawings on right side. Disadvantage: there is no amplifier, and consequently sensitivity would be low, hardly enough to..... Listed under: [Projects](#), [Sound – Audio Projects](#)

510. [Burn Arduino Bootloader on Atmega-328 TQFP and DIP chips on Breadboard](#)

Parts required (Hardware) Arduino Uno Board (1) TQFP 32 to DIP 28 Adapter (1) Link Atmega TQFP 32 pin chip (1) Atmega DIP 28 pin chip (1) 10K resistor (1) 16MHz crystal (1) 18pf – 22pf capacitor (2) Tact Switch (1) Jumper wires (few) LED..... Listed under: [Development Board – Kits Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

511. [How to make a LED 7-segment display with or without Arduino](#)

I'm going to show you how to make a 7 segment display with LEDs. Combine with Arduino to create countdown timers, simple text, and more. I like to make original projects. I searched the whole of instructables and didn't find one like this. In fact,..... Listed under: [LED Projects](#)

512. [Ariadne – a 1st person maze on a 16x2 LCD using Arduino](#)

This game is a homage to Ariadne, the maze-generator from Inception 😊 If you haven't seen the movie yet – watch this video again after you do (you can also watch it now – it's not a spoiler, it's just funnier for inception-vets). The nice thing about..... Listed under: [Game – Entertainment Project Ideas](#), [LCD Projects](#), [Projects](#)

513. [Arduino Control DC Motor via Bluetooth](#)

Hi guys, In this project we will control a DC motor with a smartphone via bluetooth. This project is great to learn more about: -DC motor -Interfacing Arduino with your smartphone -Bluetooth module -L293D you can visit my website for more electronic projects, interesting news..... Listed under: [Internet – Ethernet – LAN Projects](#), [Motor Projects](#), [Phone Projects](#), [Projects](#)

514. [Arduino Powered 3-zone thermostat](#)

I was looking at all those swoopy-zoomy internet connected and controllable thermostats. "Self," I told myself, "we should make one of those." He didn't seem all that excited about that – I mean, what do we know about hardware, firmware, electronics or HVAC? Well, now's..... Listed under: [Temperature Measurement Projects](#)

515. [DIY BioPrinter](#)

Bioprinting is printing with biological materials. Think of it as 3D printing, but with squishier ingredients! There's a lot of work being done at research labs and big companies like Organovo on print human tissues and human organs, with an eye towards drug testing, and..... Listed under: [How To – DIY – Projects](#)

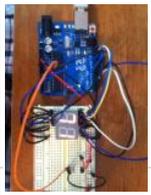
516. [Simple RC car for beginners \(Android control over Bluetooth\)](#)

This is a simple project of Android Bluetooth Car with Bluetooth control. Arduino controller is used To control the car used Android-device with a built-in accelerometer. Tilt forward – car goes forward, tilt to the left – car turns to the left, tilt back – car..... Listed under:



[Car Projects](#), [Game – Entertainment Projects](#), [Internet – Ethernet – LAN Projects](#)

517. [Arduino Digital 7-Segment Thermometer](#)



This a guide for an Arduino version, but I am working on a mini ATtiny84 version. Once I get that working, I will post another Instructable on how to make it. I'm sure you could make this same thermometer with an LM35 also, if that's..... Listed under: [Temperature Measurement Projects](#)

518. [Wi-Fi Body Scale with Arduino Board](#)



In this post we present the design of a scale that connects to the Internet and automatically sends weight info on a Google Document. The project is composed of Arduino Uno board Wi-Fi shield additional shield that we used to manage data collection and I/O with..... Listed under: [Internet – Ethernet – LAN Projects](#), [Medical – Health based Projects](#), [Projects](#)

519. [Playing Wave file using arduino](#)



This is a simple circuit to play wav files using arduino Nano V3.0 ,it consist from 4 buttons ,each one play specific wav file loaded to SD card. Step 1: Parts 1- Arduino Nano V3.0 (I used the chines version called Funduino Nano). 2- SD..... Listed under: [Sound – Audio Projects](#)

520. [Paint Pulse: Digital Water Marbling](#)



Paint Pulse is a project which seeks to build upon the water marbling crafts of Ebru and Suminagashi with digital behavioral additions. The idea is to design intricate, flowing patterns of paint directly on the surface of water which you can capture on the surface of paper. Expert..... Listed under: [Other Projects](#)

521. [Bubblesteen Bubble Machine using an Arduino](#)



Is it a 3D Spherical Atmosphere Encapsulated Phosphorous Printer? YES! Is it a CNC Anti Gravity transparent Orb Machine! YES! Its The Bubblesteen Bubble Machine! The spherical miracle that kids and cats have been waiting for. It comes complete with robotic edge detection(when a bubble hits an..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

522. [Cheap and Easy MP3 Shield for Arduino](#)



This is a follow up to an earlier Instructable for attaching the guts of a cheap clip MP3 player to an Arduino. <http://www.instructables.com/id/MP3-Interface-for-Arduino-Cheap-and-Easy/> The previous Instuctable showed how to use the Arduino to control all of the functions of the MP3 player: volume increase and decrease,..... Listed under: [Projects](#), [Sound – Audio Projects](#)

523. [Charlieplexed Arduino 8x8 LED Grid Display Shield made and simulated in 123D Circuits](#)



edit: Wow, this won an awesome prize! Very many thanks guys! Charlieplexing (<http://wealoneonearth.blogspot.nl/2013/03/design-note-charlieplexing-led-matrices.html>) is a powerful method for driving a large number of LEDs from a relatively small amount of IO pin and without using any extra components. The technique makes use of the fact..... Listed under: [LED Projects](#)

524. [How to make a multi-layered acrylic and LED sculpture with variable lighting levels using Arduino](#)

Here you can find out how to make your very own one as made for the exhibition www.laplandscape.co.uk curated by art/design group Lapland. More images can be seen at flickr This exhibition runs from Wednesday 26 November – Friday 12 December 2008 inclusive, and had..... Listed under: [LED Projects](#), [Projects](#)

525. [Remote control via GPRS/GSM SMS\(Arduino\)](#)

Remote control, especially when this no ethernet or Wifi in the outdoor, has been a very profound thing in the past. When I was a child, I always imagine that I have an equipment which can control all home appliances. Now, this becomes a reality, with..... Listed under: [Home Automation Projects](#), [Phone Projects](#)

526. [Fairly Simple Simon – the evolution of an Arduino game](#)

Important notice: Final (i.e. relevant) version is at the last step of this instructable. If you want to build a Simon, that is the recommended version. The rest of the steps show how this evolved from a bare-bones game for LED 13 and Serial (i.e..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

527. [LilyPad Arduino Totoro Plush with Umbrella](#)

Materials: For Totoro: Felt: 1 black, 3 grey, 1 white, 1 beige Needle Black Thread Poly-fil stuffing Cardstock Scissors Pins Pen or chalk DIY Totoro Plush Tutorial HERE Totoro Pattern HERE For Umbrella: 3 or 4 different types of fabric Felt: 1 grey, 1 black..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#)

528. [Arduino GSM shield](#)

This is a very low cost and simple Arduino GSM and GPRS shield. We use the module SIMCom SIM900 . It's the cheaper module now available in the market. The module is not simple to mount by a hobbyist, so we use the Breakboard TDGSM_900..... Listed under: [Development Board – Kits Projects](#), [Phone Projects](#)

529. [Compact 3-in-1 Stripboard DIYduino with Integrated Sensor and L298N Motor Shield](#)

I am presenting a compact design of a stripboard Arduino board (DIYduino) that includes a 2A motor driver and has additionally the functionality of a sensor shield. The 2-channel version cost approximately \$29.43 and is more affordable compared to \$39.00 for a commercially available system..... Listed under: [Motor Projects](#), [Sensor – Transducer – Detector Projects](#)

530. [Dogduino: The Automatic Dog Feeder using Arduino](#)

Tired of having to find the dog food to feed the dog? Tired of having to get up early so your dog doesn't attack you for his food? Are just plain lazy? If you answered yes to any of these questions, this instructable is for..... Listed under: [Arduino Programmer Projects](#), [Projects](#), [Sound – Audio Project Ideas](#)

531. [Easy Programmable EL-Wire Wall Art Project with Cool-Neon using arduino](#)

Blank space, what to do?, what to do? Our hackerspace has a blank brick wall above the fireplace. It's been a cold winter so we've had a fair number of fires, but there is just something wrong about a blank brick wall. Well in this..... Listed under: [Home Automation Projects](#)

532. [The Arduino OctoSynth](#)

What is the OctoSynth you may ask? The Octosynth is a polyphonic synthesizer that is able to produce eight Pulse Width Modulated tones that form together a musical scale. In English terms, it is a 8 key electronic organ that can play more than one..... Listed under:



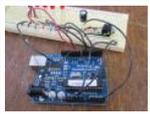
[Projects, Sound – Audio Projects](#)

533. [Microcontrolled AC switch using arduino](#)



Always wanted to take total control of your electric appliances even without being at home? Well, thanks to this instructable you will be able to do that and much more. Some friendly suggestions before starting: Electricity is very dangerous, read and follow the "DANGER:" advices..... Listed under: [Home Automation Projects](#)

534. [Representing audio through vibration with Arduino](#)



This project functions to display sound using vibration. You plug your iPod, computer, or TV into it and get tactile feedback representing the loudness of the audio. It can help deaf people to experience sound. Stuff you need: Arduino USB Cable Computer running Arduino software..... Listed under: [Sound – Audio Projects](#)

535. [How to Build a Robot – The BeetleBot](#)



Welcome! I have been in robotics since I was a kid and I am very passionate by robotics. I learn BEAM robotics around 1997-98 and started building robots for a science faire project call "Insectroides" in 2001.
http://robomaniac.solarbotics.net (they change server and the website..... Listed under: [Robotics – Automation Projects](#)

536. [Psycho Scooter Scramble using an Arduino](#)



Psycho Scooter Scramble is a blind-driving electric wheelchair game. It consists of two riders, strapped into electric wheelchairs, and two blindfolded pilots, who remotely control the wheelchairs from the sidelines based on information given over headset by their driver. The basic mechanic is simple: players..... Listed under: [Game – Entertainment Projects, Projects](#)

537. [Mug Music: Turn Water Into an Instrument with Arduino and Chuck](#)



What if you could turn any conductive surface into an instrument? Like, say...a mug of water? Best of all, it's cheap; you'll only need \$1 worth of extra electrical components (not including the Arduino). For this project, my friend Harvest and I combined Disney's Touché..... Listed under: [Home Automation Projects](#)

538. [Making Robots Using Android and Arduino](#)



udar Muthu gives a talk on Making Robots Using Android and Arduino at Droidcon India 2011 by HasGeek. ... Listed under: [Arduino Android, Projects, Robotics – Automation Projects](#)

539. [PORTABLE FORCED-AIR COOLING UNIT](#)



here is growing interest in the commercial production of high-value specialty fruit such as strawberries, blackberries, raspberries, and blueberries. Much of the small fruit grown in North Carolina is currently marketed through pick-your-own establishments or roadside stands. A strong demand for these small fruit items..... Listed under: [Home Automation Projects](#)

540. [Perfboard Hackduino Arduino-compatible circuit](#)

Never again will you have to dismantle a finished project just to reuse an Arduino board! This tutorial will go through the steps involved in fabricating your own Arduino-compatible circuit using just ~\$8 of parts (this includes the ATmega chip!). This is perfect for installing and embedding..... Listed under: [Development Board – Kits Projects, Projects](#)



541. [A solar tracking automatic motorized window blind retrofit using Arduino](#)



Buildings account for 20-40% of total energy use in developed countries. Window shades (or blinds) can help to reduce building energy use and improve visual comfort (i.e., reducing glare and increasing daylighting). A recent study showed that occupants are fairly inactive when operating manual roller..... Listed under: [Motor Projects](#)

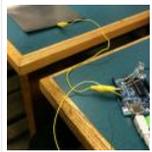
542. [Flashlight tag using an Arduino board](#)



You probably know the game of flashlight-tag. You just run around in the dark on a campsite. You hold your flashlight and try to shine it on one of the other kids, without the other kids shining their lights on you. I wanted to make.....

Listed under: [Game – Entertainment Projects](#), [Projects](#)

543. [Fish Sensing](#)



Overview Once again, my project was motivated by my curiosity to explore interesting and unfamiliar territory. I decided to see if I could make my own capacitive sensor and then use it in a project of some sort. After numerous fiascoes with Arduino and computers, I was..... Listed under: [Sensor – Transducer – Detector Projects](#)

544. [StopIt! LED Game \(powered by arduino\)](#)



This project was inspired by this video from YouTube and the Pendulum Challenge Kit from Makershed.com. Its a simple game consisting of five LED lights and one pushbutton switch. The LEDs flash in a sequence and the player must press the button when the middle..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#)

545. [Arduino 3-axis Mini Lazer Paper-Cutter](#)



Updated : 16/3 Add step 4, about using the stage. Updated : 18/3 Add photos (cutting vinyl adhesive sheet) Updated : 19/3 Add step 5, acting as pen plotter Updated : 20/3 Add laser engraving video (Wood) and photo Updated : 22/3 Add 2 drawings..... Listed under: [Home Automation Projects](#)

546. [Arduino: an easier way to work with seven segment displays](#)



Ever have trouble programming code for seven segment displays? Well they made the 4511 to make things a whole lot easier. What the 4511 does is takes a 4 digit binary input value (ones and zeros), and converts it to a decimal value on a..... Listed under: [LCD Projects](#), [Projects](#)

547. [Buddy the on-screen seal Robot](#)



I've made a video documentation of my midterm project for my 544 class. To keep it shorter, I didn't detail in the video that this is only a completed phase of a larger project: an autonomous robot seal. I was originally going to incorporate a..... Listed under: [Robotics – Automation Projects](#)

548. [Arduino Joystick Breadboard with LCD Output](#)

Want to be able to control a couple of servos with a thumb-joystick? But don't know where to start? I don't have servos, but I can put you on the right track on how to do stuff when you move the thumbstick around. This instructable..... Listed under: [Game –](#)



[Entertainment Projects](#), [LCD Projects](#), [Projects](#)

549. [LilyPad Arduino Stuffed Fox Toy](#)



For a class on technology in libraries, I had to create a project that used the LilyPad Arduino, and I chose to create a stuffed animal that sings "Jesus Loves Me" while lights flash with the notes. I made a fox, but the pattern to..... Listed under: [Home Automation Projects](#)

550. [PCB on a Box using Arduino Board](#)



Sorry, but I hate cleaning windows, is one of my unfinished business as usual, but I had to do (at least) every time I wanted to etch a circuit board printed by traditional (and perhaps unorthodox) of stick it in cellophane and let natural light..... Listed under: [Development Board – Kits Project Ideas](#), [Projects](#)

551. [Arduino Candygrabber](#)



I've seen a lot of ways to communicate to arduino over the net, but none of them could handle pushing back the messages from arduino to the client(you) in real time and vice versa. In this instructable you will learn how to connect to your..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

552. [Arduino Hardware PWM for stepper motor drives](#)



With our new project, JustAddSharks, we are very keen to support the development of open source control software for laser cutters. We are more than happy for people to modify our laser cutters, replace the control system with something suitably open source and then let..... Listed under: [Motor Projects](#)

553. [How to build your very own Time Fountain using Arduino](#)



We have all seen the sweet videos on the tube! You know the magical water fountains that seems to "freeze" the water droplets in mid air, or even make them go backwards! I've been fascinated by these "magical" thingamabobs for quite some while now, and a..... Listed under: [Clock – Timer Projects](#), [How To – DIY – Projects](#)

554. [MMAE Graduate Robotics](#)



This page provides general information to students enrolled in the EML 6808 course, Analysis and Control of Robot Manipulators. Prerequisites for the course are: EML 4312C, EML 5271, or C.I. Kinematics and dynamics of multibody systems. The topics to be covered include: basic components of..... Listed under: [Robotics – Automation Projects](#)

555. [Control your motors with L293D and Arduino](#)



After long research and trial and error, I have came up to a new walkthrough regarding this nice chip, the L293D. Each project is one project and each one has its own unique power configurations, so you must be aware of the best battery choice..... Listed under: [Motor Projects](#), [Projects](#)

556. [Barista championship brewing stopwatch • Introduction using arduino](#)



Upon the needs of the (2014) World Barista Championship Rules and Regulations, an adequate and precise time measuring is needed during the competition. These measurements are usually done by regular stopwatches with all the benefits (ease of use, common availability) and drawbacks (two stopwatches needed..... Listed under: [Home Automation Projects](#)

557. [Arduino browser based remote control \(linux\)](#)



We have kids. I love them to bits but they keep hiding the remote control for the satellite and TV when they put the children's channels on. After this happening on a daily basis for several years, and after my darling wife allowing me to..... Listed under: [Home Automation Projects](#), [Projects](#)

558. [Tiich System – Prototype Final Report](#)



Introduction: Our main goal with the Tiich system is to design a teaching aid/tool which would replace the conventional whiteboard in a classroom environment. We want our system to be used as an electronic based white board, having all the written information easily be saved..... Listed under: [Sensor – Transducer – Detector Projects](#)

559. [Lilypad Arduino Rocket Ship Cape](#)



I am taking a Children and Technology course for my MLS this semester, and one of our assignments is to create a toy using the LilyPad Arduino development board. The LilyPad Arduino is used to create e-textiles that you can program to do various things..... Listed under: [Home Automation Projects](#)

560. [Web-controlled Twittering Roomba using an Arduino](#)



I wanted to see if I could operate my Roomba remotely and get it to report its status via Twitter while I was away from home. I also wanted to make the device independent of a computer. This is the solution I came up with..... Listed under: [Internet – Ethernet – LAN Project Ideas](#), [Projects](#), [Robotics – Automation Projects](#)

561. [DIY Arduino Nebulophone Synth](#)



I originally wanted to purchase a Nebulophone but, my El-Cheapo price range didn't like the tag. I realized that I could program my own AtMega 328 by using ArduinoISP Then I found out that if the code was Arduino compatible, why not just use the..... Listed under: [How To – DIY – Projects](#), [Phone Projects](#), [Projects](#)

562. [Social Alarm Clock](#)



What it is: Sometimes we want to send special messages to the ones we love but they are sleeping. Soci Alarm Clock allows you to record a message from your browser and send to your beloved's alarm clock. They just have to put it near..... Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#)

563. [Cookies administrator box \[Electronics only\] using arduino](#)



At home the cookies disappear relatively fast. ¿Why? Well, principally because of me and my father. That's why my mother and my sister have to hide some to eat them later. It's embarrassing, I know, but it's because we are like "Oh, I want to..... Listed under: [Home Automation Projects](#)

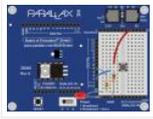
564. [Arduino Fart-O-Meter](#)



OH NO! He didn't! Yes I did! My project is simple: Farting in a chair and sending the signal wirelessly to a panel that shows the intensity of the fart! Words of caution: Please do not force yourself to fart, you might shit in your..... Listed under: [Metering – Instrument Projects](#), [Projects](#)

565. [One Touch Wardrobe using an Arduino](#)

I use Arduino Duemilanove With Motor Driver Shield Microcontroller ATmega168 Operating Voltage 5V Input Voltage (recommended) 7-12V Input Voltage (limits) 6-20V Digital I/O Pins 14 (of which 6 provide PWM output) Analog Input Pins 6 DC Current per I/O Pin 40 mA DC Current for..... Listed under: [Home Automation Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

566. [Controlling an LED using a switch](#)

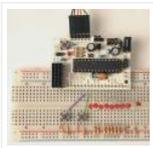
Concepts So you know what a switch is, but what can you do with it? One of the uses of a switch is to tell the controller to activate/deactivate different components. In this case we are going to use the switch to turn on and..... Listed under: [LED Projects](#)

567. [Nursery Rhyme Hat using arduino](#)

I created the Nursery Rhyme Hat for a class on youth and technology. I'm new to instructables and e-textiles, so please bear with me! This is the first time I have used the LilyPad Arduino or any kind of soft circuit technology, so my coding..... Listed under: [Home Automation Projects](#)

568. [Rainbow Mega Pong Clock using Arduino](#)

This is my take on the classic Pong clock with an RGB back light that changes every time the date is displayed. A big thanks to mnick1234567 and his <http://www.instructables.com/id/Pong-Word-Clock/> I did want the light to change randomly through the day but it made a mess of..... Listed under: [Clock – Timer Projects](#), [Projects](#)

569. [Artist's Machine](#)

Tutorial 1 Part One Materials needed for tutorial Working BBB, RBBB, Arduino, or other Arduino compatible (BBB shown in photos) Solderless breadboard 22 gauge solid wire for use with breadboard 3 6mm momentary switches 8 LED's, any color 8 1k resistors, (470 ohm or 220..... Listed under: [Video – Camera – Imaging Projects](#)

570. [LilyPad Arduino e-Reader Case](#)

For a youth and technology class, we were assigned the creation of an Arduino LilyPad project. I liked the idea of connecting the LilyPad project to literacy, so I chose to make a Kindle case that would play music [Hedwig's Theme from the Harry Potter..... Listed under: [How To – DIY – Projects](#)

571. [NESBot: Arduino Powered Robot beating Super Mario Bros for the NES](#)

This guide will take you through the steps to build an NES playing robot You will need: An Arduino Duemilanove (other boards will probably work, but you will have to adjust the steps for your device) Working NES Console Super Mario Bros. (Note: this must..... Listed under: [Game – Entertainment Projects](#), [Projects](#), [Robotics – Automation Projects](#)

572. [Arduino V-Twin Flux Capacitor](#)

I SHALL CALL HIM " PEE-WEE " Personal Electronics Entertainment With Embedded Education. Basically a project that is fun and I learn a hole lot of stuff from it. . This project started out as just a small robot so I could learn more about..... Listed under: [Robotics – Automation Projects](#)

573. [Tweeting Cat Door using an Arduino](#)



Note: to see everything on one page, please go to: www.tweetingcatdoor.com After receiving many emails requesting Instructions and Kits for building the "Tweeting Cat Door ", I decided to make a version that is stand-alone and doesn't need a computer to be run and that..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

574. [The Photometric Camera and the CCDs](#)



The Photometric System The photometric camera for the SDSS consists of two TDI scanning CCD arrays, one, using 30 Tektronix/SITe 2048 x 2048 CCDs in a 5 by 6 array for five-color photometry, and the other using 24 2048 x 400 chips for astrometry and..... Listed under: [Video – Camera – Imaging Projects](#)

575. [Mechanical Led Matrix Display](#)



First of all we would like to thank everybody that helped organizing the 2nd edition of Arduino Jam, and especially the Jo3ri, who supplied us with some quite cool goodies and kept us safe during the weekend. (Video will come soon!) This project is a..... Listed under: [LCD Projects](#)

576. [Simple and Impressive Business Card Printer](#)



At some point most tinkerers and makers have to take the plunge into the real world – the world of suits and dividends and business cards. Without going completely "American Psycho" on your asses: business cards are important. In many ways they are our keys..... Listed under: [How To – DIY – Projects](#)

577. [Interactive Logo using an Arduino](#)



first of all we would like to thank the organisation and especially the main sponsor, Capgemini, which made all of this possible. This project is a contribution to the first belgian Arduino Jam (2012). During the Arduino Jam 2012, me and two other colleagues put our heads together..... Listed under: [LED Projects](#), [Projects](#)

578. [Vacuum form an Arduino](#)



If you have access to a vacuum former, or have constructed a DIY one to use, simply vacuum form a compact case to house your standalone electronics or arduino project. I made this at techshop! www.techshop.ws Step 1: Bill of materials Material to vacuum form..... Listed under: [How To – DIY – Projects](#), [Projects](#)

579. [Scratch 4 Arduino and Cybot Control.\(Rover basics\)](#)



I've had a couple of Cybots as well as the Tom robots for a number of years – every so often they get dragged out and tinkered with. Now is this years turn. I have decided to try my hand at Arduino control of the..... Listed under: [Robotics – Automation Projects](#)

580. [\[Arduino\] Linefollower with photoresistors](#)



I built a linefollower robot that could be used in many different ways, and I summed up my project in some steps. To begin with, all you need is the following parts: Step 1: Robot frame Parts List: -Robot frame -Two wheels -Two DC motors..... Listed under: [Robotics – Automation Projects](#), [Sensor – Transducer – Detector Projects](#)

581. [Gas Cap using an Arduino board](#)



Since you've gotten into electronics, haven't you wondered if there is a fart sensor out there? I sure did. I discovered that if you use a methane sensor, especially the MQ-4, even at very low concentrations, it reads farts. What if you combined that into..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)

582. [CrEST](#)

Let's Set Up Your Arduino and Breadboard! Yep, for real: Let's Set Up Your Arduino and Breadboard! (use the instructions here, or flip to page 12 in your book) Step one: Dig through your kit and pull out your: Arduino Wooden Base Breadboard and Jumper..... Listed under: [Other Projects](#)

583. [New animatronic Eyes: Rock On!](#)

Someone had seen Peter Penguin or my Instructables on Animatronic Penguin Torso or Animatronic Eyes, and was working on a sculpture. He wanted to animate the sculpture when someone walked into the room and asked if I could do it. I thought about it for..... Listed under: [Game – Entertainment Projects](#)

584. [Multifunction Digital Thermometer using an Arduino](#)

This instructable will show you how to create a multifunction platform with a thermometer, chronograph (count up timer), count down timer, and light display. It is also intended to be a platform for other analog sensors or any other functions you can think of. Multifunction_Digital_Thermometer.zip71..... Listed under: [Projects](#), [Temperature Measurement Projects](#)

585. [Twitter Controlled Pet Feeder using an Arduino](#)

A great project for busy pet owners. This Twitter-Controlled pet feeder automatically dispenses food in response to activity on your Twitter account. The project is controlled by an Arduino and uses the Arduino Ethernet shield to receive data from Twitter. I hacked this automatic Pet..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

586. [Singing Olaf Bag_\(Frozen\)](#)

For my children and technology class, we were challenged to make a product using a LilyPad Arduino. I am currently obsessed with the movie Frozen, so I decided to create something using one of the most iconic characters of the movie, Olaf. I used a..... Listed under: [Game – Entertainment Projects](#), [Sound – Audio Projects](#)

587. [Arduino MicroControllers, Card Readers, 3D Printing, GS4, Flip Camera!](#)

Episode 3 of AndroidTec, Formed by members thamind (Jon) chaotic (Lewis) & Computer Whiz (Jim) and introducing GuyCothal, who discusses about the amazing abilities of Arduino micro controller boards and how they can be used with Androids! Jason also made a guest appearance!... Listed under: [CNC Machines Projects](#), [Development Board – Kits Projects](#), [Memory – Storage Projects](#), [Projects](#), [Video – Camera – Imaging Projects](#)

588. [Randomized Arduino Drum Machine](#)

I like drum machines. However they are not always the easiest to build. I wanted one that is: A. Simple, Yet Powerful-If it uses lots of components then it is too complicated B. Sound-It's not a a drum machine if it "beeps" C. Easily Modifiable-If..... Listed under: [Projects](#), [Sound – Audio Projects](#)

589. [Arduino Automatic Temperature& Humidity Controller for Pets](#)

Jack and Jose, a pair of beautiful hamster, has accompanied me over 100 days and nights. Their soft white fur makes me quiet and warm, especially when I coding in the winter. But the very tragic things happened in the last week. As the cold..... Listed under: [Temperature Measurement Projects](#)

590. [9 Volt battery adapter for Arduino](#)



This is super simple but very useful if you are in a hurry or just like to do things yourself and on the off chance you didn't know, this is about the easiest way to add mobile power to your Arduino. After looking at a..... Listed under: [Battery Projects](#)

591. [Touch Sensitive Audio Desk Trays- Arduino](#)



After having completed my first Arduino project (which can be found here) I wanted to try and create something that had more of a practical use. My idea behind this project was a way of aiding the visually impaired. By the end of this project..... Listed under: [Sensor – Transducer – Detector Projects](#)

592. [RGB lamp with Custom Moodlamp Library using Arduino](#)



I wanted to have an easily programmable RGB light to toss into a Jack 'O Lantern for Halloween. Who really wants a dull pumpkin in these days of pumpkin pimping madness. So I set to work building a pocket tin sized RGB lamp that could..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#), [Projects](#)

593. [Homemade Magic Lamp Card Box using an Arduino](#)



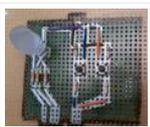
A robot is a virtual or mechanical artificial agent. In practice, it is usually an electro-mechanical machine which is guided by computer or electronic programming, and is thus able to do tasks on its own (<http://en.wikipedia.org/wiki/Robot>). Well, today you will learn exactly how to build..... Listed under: [Home Automation Project Ideas](#), [How To – DIY – Projects](#), [Projects](#)

594. [High Five Camera](#)



Can I tell you a secret? I don't like handshakes. I really don't. Handshakes just make me feel dirty. It's too impersonal. It's a gesture with no soul and reeks of a corporate entity. Why must we limit ourselves to this one boring interaction? Of..... Listed under: [Game – Entertainment Projects](#), [Video – Camera – Imaging Projects](#)

595. [Twitter Mention Mood Light using Arduino](#)



Twitter Mention Mood Light — a mood light that alerts you when @username is mentioned on Twitter. This is a simple intro in how to control your Arduino from Twitter. If you are new to Arduino Twitter / Arduino Processing Twitter / Arduino Python Twitter..... Listed under: [Internet – Ethernet – LAN Projects](#)

596. [Arduino makes 2D Level](#)



This is a project for Arduino to make a 2D Level, aimed at beginners. Arduino draws a circle on an LED Matrix that moves around according to readings from a 2D Accelerometer. Objectives: * Learn how to draw a circle using simple Maths * Learn..... Listed under: [CNC Machines Projects](#), [LED Projects](#), [Projects](#)

597. [CSCE 236 Embedded Systems](#)

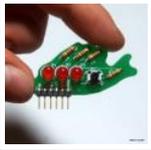


1 Instructions This is a group assignment for you to work on during class. You only need to hand in one copy of this, but make sure that the names of all of your group members are on this sheet to receive credit. Complete all of..... Listed under: [Other Projects](#)

598. [Arduino Etch-A-Sketch Clock](#)



I've seen various Arduino driven Etch-A-Sketch clocks on the web , but none with instructions (is it some kind of secret? Is someone planning on making it rich in the Etch-A-Sketch Clock global market?). I've used Arduino, but never used stepper motors, real time clocks,..... Listed under: [Clock – Timer Projects](#)

599. [Blinky Fish using an Arduino](#)

Assembly instructions for an add-on board for the Arduino. **** FOR INSTRUCTIONS FOR MARCH 2013, KICKSTARTER PROJECT GO HERE <http://www.instructables.com/id/Blinky-Fish-Kickstarter-Project/> ***** It has some LED's and a button. It connects to digital pins 9-13 and ground. My hope is that this will be useful to people that want to..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#), [Projects](#)

600. [Second degree equation solver with Arduino](#)

This instructable is about making sort of a calculator that enables the user by using an analog 12-digit keyboard and 4 buttons to input the a,b,c variables into a equation and get the solution for it if there is any.(well if u don't know what..... Listed under: [Calculator Projects](#), [LCD Projects](#), [Projects](#)

601. [Home Alert: Arduino + Cloud Messaging On A Large Display](#)

In the age of mobile phones, you would expect that people would be responsive to your call 24/7. Or... not. Once my wife gets home, the phone stays buried in her hand bag, or its battery is flat. We don't have a land line. Calling..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#)

602. [Simple Arduino Book clock](#)

This book clock was inspired by florinc and the impressive selection of clocks like the wise clock3 etc <http://www.instructables.com/member/florinc/> My girlfriend likes reading books and there is always a pile of them around the house, however to be able to build this for her birthday..... Listed under: [Clock – Timer Projects](#), [Projects](#)

603. [DNA Melting Part 2: Lock-in Amplifier and Temperature Control](#)

In Part 2 of the DNA Melting Lab you will make revisions to allow greater control of your instrument and to reduce the effects of noise. You will add a pulse-width modulation (PWM) heater controller to enable careful control of the heating and cooling rates..... Listed under: [Temperature Measurement Projects](#)

604. [Control Any Circuit With a TV Remote \(and an Arduino\)](#)

Most of the buttons on a remote control are never used. So why not use them to control appliances and other electronics around your house. In this project, I am going to show you how to use an Arduino to decode the signal from your..... Listed under: [Home Automation Projects](#), [How To – DIY – Projects](#)

605. [ElectroFried electronic shock game using Arduino](#)

The ElectroFried is a game with a shocking fun level. ElectroFried is developed for the Global Game Jam 2011 in Antwerp in design center the winkelhaak. The Team Jekkos/ Cinezaster decided to make a simple game based on colliding electrons. With a nasty side effect, a..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

606. [Reginald: a UDP surveillance bot; control via the Internet using Arduino](#)

Reginald started from the simple, yet bold idea to control a bot from anywhere in the world with a live video feed. What I wasn't expecting was for Reginald to develop into an involved, feature rich project. With my work and money, I was able..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#), [Robotics – Automation Projects](#)

607. [Hacking a Powerglove using Arduino](#)

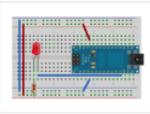
First of all lets get this out of the way... It's so bad This is going to be showing how to hack the Nintendo Powerglove. By hack I mean tap into the flex sensors and use the buttons and d pad and add anything you want. In..... Listed under: [Game – Entertainment Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

608. [Chur-Robot](#)

Electrical Components The electrical components are the five motors and their associated circuits, the buttons, and the thermocouple. The Circuit We are controlling two stepper motors, three servos, a thermocouple, and a set of buttons using an Arduino. Our final circuit diagram looks like this:..... Listed under: [Robotics – Automation Projects](#)

609. [Build a Complete AVR System and Play Mastermind using Arduino](#)

The game Mastermind has been around a long time, and I remember getting a board version with colored pegs when I was a kid. I love this game, as it is solvable simply by pure logic. One player (or a computer/microcontroller) chooses a sequence of..... Listed under: [Game – Entertainment Projects, Projects](#)

610. [Sensor Arduino Lab 2013](#)

This lab most recently revamped by Edgar Berdahl and Wendy Ju. Chris Carlson, possibly Bill Verplank, and others have likely contributed. For this lab you need your Satellite CCRMA kit, a laptop computer with Ethernet adaptor to program it, and some headphones with a mini..... Listed under: [Sensor – Transducer – Detector Projects](#)

611. [Universal Remote Laser Tag](#)

Blast away your friends for hours on end with this custom laser tag system. Who needs to pay to play in an arena when you can make your very own game? Best of all, no special equipment is required, because the “guns” are regular universal..... Listed under: [Game – Entertainment Projects](#)

612. [Arduino from Evil Mad Scientist ATmegaxx8 Target Board](#)

I have been making my own Arduino's on strip-board but recently bought some of the Evil Mad Scientist ATmegaxx8 Target Boards. While they weren't designed as an Arduino board they are perfect to use as they have: - places for the crystal and capacitors (XTL..... Listed under: [Development Board – Kits Projects, Projects](#)

613. [Computer Controlled Aiming Method](#)

Design: The rotational motion produced by the motor is transformed into linear motion through the use of a standard 1/2"-13 threaded rod as a lead screw. To account for angular misalignments in the rod the motor is not attached to it directly, but rather through..... Listed under: [CNC Machines Projects](#)

614. [Arduino based Etch A Sketch Laser Cutter](#)

In this project I take an Arduino Mini Pro connect it to a custom made Etch A Sketch panel and use it to control a Blacknose laser cutter. The result is hours of crazy laser cutting fun, which we will be taking round most of..... Listed under: [CNC Machines Projects](#)

615. [Roll-A-Way Rover using an Arduino](#)

Age Group: 13 – 18 My experimental rover that I built from a Roll-A-Way alarm clock that was on clearance for \$5. It can be controlled via the numeric section of a keyboard when the serial port is connected to a computer or a Wii..... Listed under: [Clock – Timer Projects, Projects, Robotics – Automation Projects](#)

616. [The Pick and Place Machine for Surface Mount Devices](#)



¿What questions need to be resolved? ¿How to recognize the origin of the table? — The table is the piece of the machine where you place your board, and is critical for the pick and place operation. I've thinking in a limit switch system. Will..... Listed under: [Other Projects](#)

617. [Beginner Arduino](#)



The Arduino is a pocket-sized computer (also called a "microcontroller") that you can program and use to control circuits. It interacts with the outside world through sensors, leds, motors, speakers... even the internet; this makes it a flexible platform for lots of creative projects. Some..... Listed under: [Development Board – Kits Projects](#)

618. [Design of small scale smart home system](#)



DESIGN OF A SMALL SCALE SMART HOME SYSTEM Gabriel Johnson and Chance Kelsoe INTRODUCTION Design of a smart home system with a LabView/Arduino interface In this project we made use of an Arduino Duemilanove and LabView to design an easy to use graphical interface to represent..... Listed under: [Home Automation Projects](#)

619. [Arduino WiFi Garage Door Opener](#)



Ever come home in the rain to find the door locked and your keys elsewhere? No? Lucky you then! For those who have had such an experience or never wish to, this project will let you open your garage door with nay but a smartphone/tablet/laptop/WiFi-thing..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#)

620. [Auduino Lo-fi Synth for Arduino](#)



Hello again. Today I'd like to show you the Auduino. That's right, the Auduino is a Lo-fi Granular Synth that works on arduino. It uses some analog pins and a digital pin. I had loads of fun making and playing with it so I'd love..... Listed under: [Projects](#), [Sound – Audio Projects](#)

621. [Ambient Etch-a-Sketch](#)



We built a pseudo Etch-A-Sketch emulator that modifies its appearance based on the user's environment – the temperature and light conditions. Instead of only drawing horizontal and vertical lines, we can draw curved lines by changing the slope of the current line to be drawn..... Listed under: [Game – Entertainment Projects](#)

622. [The iDial – Critical Making Personal Identity Augmentation Device](#)



In this critical making project, we will be making a personal iDial, which will give you, the wearer, the ability to reflect on your personal identity in a private space, and then spatially and temporally dislocate your 'private self' into public conversation! You might be..... Listed under: [Sensor – Transducer – Detector Projects](#)

623. [Using a laser pointer and a matrix LED as a two-dimensional input device](#)



Laser Command is a game which I build using a 8x8 matrix LED and an Arduino Mini. This game was developed as a "sample" class project in S10-05833 Gadgets, Sensors and Activity Recognition in HCI. The class is taught by Scott Hudson at Carnegie Mellon..... Listed under: [LED Projects](#)

624. [Arduino Model Rocket Launcher for 3D Printed Rockets](#)



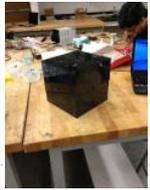
When I was a kid, I loved playing with Estes Rockets, so I decided to get back into the hobby but using all of my maker skizzls. So here's a really cool Arduino Rocket Launcher launching 3D Printed rockets from my MakerBot Rep2! Enjoy! Fully..... Listed under: [Game – Entertainment Projects](#)

625. [LED Super Mario Piranha Plant using an Arduino](#)



We are going to make an Arduino control LED Piranha Plant :) Step 1: What you'll need Arduino Uno 9 Resistors 9 LEDs – Red, Yellow, Orange is best since they need less amperage PIR sensor 9v battery arduino wall plug (you'll be cutting the connection..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

626. [THE CUBE: A 3D Vibration Jigsaw Puzzle](#)



“THE CUBE” is a 3D jigsaw puzzle, with the added feature that a puzzle piece vibrates for approximately a second when it is placed in the correct place in the puzzle. We accomplished this by building an electrical design such that a circuit delivering power..... Listed under: [Game – Entertainment Projects](#)

627. [DIY handmade Hexapod with arduino \(Hexdrake\)](#)



Hello, I'm David and in this instructable I'll show how I made this hexapod whose name is Hexdrake. Since I was 16 I became interested in electronic and later in robotics. After getting some level and programming skills using arduino I decided to build a..... Listed under: [How To – DIY – Projects](#), [Robotics – Automation Projects](#)

628. [Relay Motor Control Circuit](#)



Connect the Arduino outputs with 5 volt power to the relay coils. Use a separate 9 or 12 volt battery for powering the motor. Connect the 9 or 12 volt power to the relay contacts and the motor. Be sure to avoid connecting the 9..... Listed under: [Motor Projects](#)

629. [NFC Computer Unlocker](#)



Quit pulling your hair out over incorrect passwords. Using an Arduino Leonardo and Adafruit's NFC shield, you can unlock your computer with an NFC card. The Arduino reads the NFC card's unique identifier and once it receives the correct one, it uses the Arduino Leonardo's..... Listed under: [Arduino Programmer Projects](#), [RFID – NFC projects](#)

630. [Arduino Mini-Shields](#)



This is a set of simple, small form-factor, mini-shields that I created almost by accident. As I made more and more of them, I realized that they could be really useful. What started out as a way to use some spare parts, turned into a..... Listed under: [Development Board – Kits Projects](#)

631. [Making a program start using a switch](#)



Connecting the Switch To connect the switch to the Arduino, you will need the switch, two jumper wires, and a 10kΩ (brown-black-orange) resistor. Once you have all the required parts, you will need to wire the switch to the Arduino using the breadboard. NOTE: The..... Listed under: [Arduino Programmer Projects](#)

632. [ArduinolSP Bootloader/Programmer Combination Shield](#)



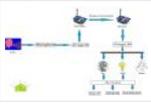
I started recently to get interested in building Arduino based robots. Since it is a traumatizing process to take any creation apart, I am opting to keep mine alive and kicking. To lower the cost of this strategy it seems obvious to switch from the..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

633. [Arduino Light Following Robot](#)



Overview This instructable will use three photoresistors (light dependent resistors) and an Arduino to control the motion of a robot. Any common robot chassis can be used for the robot. The light sensors will be mounted on the left side, right side and front of..... Listed under: [Robotics – Automation Projects](#)

634. [A wireless voice-controllable household system](#)



Motivation top We design a smart home control system which allow people control their home devices by voice command at home. This is a wireless, voice control system. People could control almost all the facilities at home including lights, fans or even back ground music..... Listed under: [Home Automation Projects](#)

635. [Arduino desktop application on java in LAN](#)



Description: here we have created an java desktop application using neatbeans. this application turn on led on arduino. this application also work in your LAN. Step 1: Assigning MAC and IP to Arduino board UPLOAD THIS PROGRAM TO ARDUINO. ALSO CHANGE YOUR MAC AND IP..... Listed under: [RTOS – OS Projects](#)

636. [Magpi: The Micro Arduino Gaming Platform Interface](#)



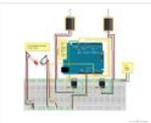
Here's a retro hand-held gaming console I built with my son. It uses an Arduino micro-controller, a small LCD screen, push-buttons, a 3D printed case and home-grown "PC" board. It's really pretty easy to solder and put together. My son & I wrote two games..... Listed under: [Game – Entertainment Projects](#)

637. [Arduino Double Dice Jewelry Box w/ Secret Switch](#)



This was a fun project. Push the red button, watch the dice "ROLL " then stop on a random roll most every time. The hart of this game is the ATMEL ATmega328P on a stand alone board. Powered by 4 AA NiMD batteries. Can you..... Listed under: [Arduino Programmer Projects](#), [Home Automation Projects](#), [Projects](#), [Security – Safety Projects](#)

638. [D.I.Y Pneumatic Linear Actuators](#)



The D.I.Y. movement has many implications for the future of creativity and commerce. The impact of inventing what one needs rather than purchasing it promises to be empowering, fun, and inspirational. In a long term effort to develop dynamic computer controlled surfaces, I began exploring..... Listed under: [How To – DIY – Projects](#)

639. [Flashing LED Top Tube Pad for your bike using Arduino](#)



Well it's that time of year again. That's right, the sun is going down early, and it's getting hard to avoid logging some miles on your bike after dark. You likely have great lights front and rear already, but what about on the sides of..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#), [Home Automation Projects](#), [LED Projects](#), [Projects](#)

640. [Sugarcube MIDI Controller](#)



This project is a portable, Arduino-powered, grid-based MIDI controller that boots up into a variety of apps to do lots of things with sound. It has 16 backlit buttons, used as both inputs and outputs to give the controller some visual feedback. 2 potentiometers give..... Listed under: [LED Projects](#)

641. [Fun Shway Display using an Arduino](#)



Build a nice looking LCD display with buttons for mounting on the wall. Key Features: 2 line by 24 character LCD display controlled with 4 I/O's (74HC164). Back light control of LCD. 6 Buttons connected to 1 analog pin. LM335 and LM334Z temp sensors. Adjustable..... Listed under: [LCD Projects](#), [Projects](#)

642. [Build Your Own Sourcemeter](#)



This is an explanation and set of building plans for a USB-powered sourcemeter with a personal computer interface. The sourcemeter uses an open-source Arduino microprocessor and the user interface uses the open-source Processing environment. The sourcemeter was designed as a homemade current-voltage (IV) tester to measure the IV..... Listed under: [Metering – Instrument Projects](#)

643. [Build a Controllable Coffee Roaster from an Air Popcorn Popper](#)



I have a passion for coffee. I also have a passion for electrical engineering. Why not combine them? This Instructable describes how I transformed a hot air popcorn popper into a completely controllable coffee roaster! Follow these instructions to re-purpose and hack your West Bend..... Listed under: [Home Automation Projects](#)

644. [Xtreme Buzzwire-4-2 Arduino Jam project](#)



This project is part of the Arduino Jam 2012. First of all we would like to thank the organization and especially the main sponsor, Capgemini, which made all of this possible. At the Arduino Jam, during the brainstormsession, we came with the idea to make a classic..... Listed under: [Game – Entertainment Projects, Projects](#)

645. [ESM – ExternalSerialMonitor](#)



Sometimes I needed an external serial monitor like the Serial Monitor in the Arduino Editor, to see what is going on. So I made one. The first picture shows an example how could be it designed. For the ESM I used an Atmel Atmega328 (based..... Listed under: [LCD Projects](#)

646. [Arduino USB](#)



LOG: Made a correction/modification Step 3 and added a picture step 5. So many Arduino users have RBBBs (Really Bare Bones Board (Arduino)) or Anarduinios or Boarduinios that could use a USB interface to program and power them but don't want to spend \$15-20 for a..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

647. [Control TV functions using Analog input and Arduino](#)



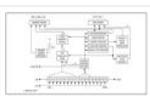
Have you ever wanted to use a good old knob to control your TV volume instead of repeated button pushing? Or make it controlled by light? Do you want your remote to be replaced by an awesome arduino and let it do the hard work..... Listed under: [Home Automation Projects, Projects, Radio Projects](#)

648. [DC Motor Control Using an H-Bridge using arduino](#)



Overview In this tutorial, you'll learn how to control a DC motor's direction using an H-bridge. To reverse a DC motor, you need to be able to reverse the direction of the current in the motor. The easiest way to do this is using an..... Listed under: [Motor Projects](#)

649. [Digital Clock](#)



Introduction This design project utilizes an Arduino MEGA2560 with an ATMEGA1280-16AU microcontroller to create a digital clock. The clock will be able to save time when disconnected from power, and it can be powered from a USB connection or from the wall outlet. The clock..... Listed under: [Clock – Timer Projects](#)

650. [AVR Programming Tutorial](#)



This tutorial introduces programming for AVR microcontrollers. It uses the ATmega328p found on Arduino boards, but works with straight AVR C and a bare microcontroller. It covers the basic information you need to get started, whether or not you've used Arduino or other microcontrollers previously..... Listed under: [Arduino Programmer Projects](#)

651. [Sound Reactive LED Strip](#)



THERE MAY BE 9 STEPS BUT I PROMISE THIS ONE IS QUICK AND EASY! In this Instructable I will be showing you how to create a light reactive LED system. In this clip, I used a single color LED strip, but you you can use..... Listed under: [LED Projects](#), [Sound – Audio Projects](#)

652. [Power your Arduino with a Hand-Cranked Battery](#)



If you've ever wanted to power your Arduino or AVR from a battery for development testing (batteries have different power delivery qualities than, say, transformed AC or even a regulated wall wart in DC) testing but were tired of going through batteries (Hey, I admit..... Listed under: [Battery Projects](#), [Projects](#)

653. [Heat-Seeking Desk Fan \(using Arduino\)](#)



Summary: The following is a step by step guide on how to make a Heat-Seeking Desk Fan from an Arduino microcontroller, a computer fan, a servo, and an infrared temperature sensor. The device scans the room periodically, automatically pointing itself in the hottest direction (ideally towards..... Listed under: [Home Automation Projects](#)

654. [Proximity sensing mouse wheel scroller using Arduino](#)



List of tools: 1. Exacto 2. Arduino Nano / USB chord (Mini-B) 3. Dremel / Drill 4. Paper & Pencil 5. Sharp IR Sensor (2Y0A21 F) 6. Hot glue gun 7. Solder gun / Solder 8. A small mirror Ok so you might ask, why..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

655. [Make a Desktop Tamagotchi](#)



One day I was sitting behind my desk at work and I got that weird need to build something, after looking around for a bit I got my eye on an LED matrix and that sparked an idea in my head : "I WANNA MAKE..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#)

656. [Twitter Enabled Text to Speech using an Arduino](#)



Let the world know what you're eating for breakfast with an 80's style vocal synthesizer! This project uses an Arduino to send your Twitter stream to a voice generator chip called the SpeakJet. The setup that I use here can also be extended to other..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#), [Sound – Audio Projects](#)

657. [Microcontrollers: The Basics](#)



Different kinds of computers are designed for different purposes. The computer at the heart of your laptop is optimized for different purposes than the one in your phone or the one in your mouse. The simplest computers are those that are designed to take inout..... Listed under: [Development Board – Kits Projects](#)

658. [Arduino Lilyypad Slipper Automatic Foot Massager](#)



I made a little automatic slipper foot massager with the Lilyypad Arduino and some of the Lilyypad Vibe Boards for the actual massager. The sensor it uses is a Lilyypad Accelerometer that I'm only using as a basic tilt sensor. Essentially it detects when the..... Listed under: [Home Automation Projects](#), [Medical – Health based Projects](#)

659. [Holiday Dreidel Light Display for Roof using Arduino](#)

This Instructable details how to build a holiday dreidel display for your roof. It uses coat hanger wire, rope light, and an Arduino controller to control a fading demo mode and a "spin" mode. In the demo mode, the symbols fade in and out, going..... Listed under: [Home Automation Projects](#), [Projects](#)

660. [John Doherty's Lab Notebook](#)

January 9, 2013 (1 hour): Met as a team after class to discuss preliminary project proposal. January 10, 2013 (2 hours): Met as a team after class to finish writing preliminary project proposal. WEEK 01 SUMMARY Accomplishments: Submitted preliminary project proposal. Weekly Work Total: 3..... Listed under: [Internet – Ethernet – LAN Projects](#)

661. [Arduino Robot V2 \(Fast\) Also Voice Controlled](#)

This is my second version of my arduino robot after "Build your first robot". My Second version is slightly complicated as compared to my first one but offers better features. In this instructable I'm going to show you how to build a fast robot which..... Listed under: [Robotics – Automation Projects](#)

662. [Breathalyzer Microphone using an Arduino](#)

The breathalyzer microphone is a system for the inconspicuous collection of blood-alcohol content level data sets. In other words, you can measure a person's sobriety with a device, that for all intents and purposes, looks no different than a standard microphone. This tool adds new..... Listed under: [Medical – Health based Projects](#), [Projects](#), [Sound – Audio Projects](#)

663. [PowerBox: The Safe AC Power Meter](#)

Introduction We designed a device that measures and graphs various aspects of AC power and acts as a computer-controlled remote switch. With the recent push for green energy and environmental friendliness, more and more people are concerned about their personal daily power usage. We developed..... Listed under: [Motor Projects](#)

664. [Make an Oscilloscope Using the SainSmart Mega2560 with the TFT LCD shield and the 3.5 "color touch screen](#)

This instructable will show you how to build a portable Touch Screen Oscilloscope for less than 40 U\$! The oscilloscope is one of the most powerful electronic instruments that is available to electronics hobbyist, experimenters, and engineers. It is mainly used to measure time-varying signals..... Listed under: [LCD Projects](#), [Medical – Health based Projects](#)

665. [Robot shield for Arduino Board](#)

The idea behind this post is to bring together some robot designs and transform them in a new device with new hardware and standard software (arduino of course) and so easier to use. These robots have three things in common: a mechanical structure, the hardware..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

666. [Small DC Motor Pwm Speed Controller](#)

The photo depicts a speed controller, wired on a breadboard which allows you to vary the resistance in the potentiometer in order to, in effect, control the speed of the small DC motor. The big picture problem is creating an efficient PWM motor controller that..... Listed under: [Motor Projects](#)

667. [Capacitive Sensing + Open Frameworks + SPACEBREW](#)

This is a step-by-step on how to connect Arduino to OpenFrameworks using Spacebrew. More specifically our project focuses on the awesomeness of Capacitive Sensing to alter OF projections to create an awesome tactile experience! What the process will involve:



Arduino -> Processing -> SpaceBrew ->..... Listed under: [Sensor – Transducer – Detector Projects](#)

668. [Arduino Personal Soundtrack Hoodie](#)



This was inspired by Raj's personal soundtrack shirt in Big Bang Theory S3, E16, "The Excelsior Acquisition". You can now buy them online but it's much more fun to make your own and it's possible now that buttons designed for use in electronic clothing are..... Listed under: [Home Automation Projects](#), [Projects](#), [Sound – Audio Projects](#)

669. [Programming an ATtiny w/ Arduino 1.0](#)



This tutorial shows you how to program an ATtiny45, ATtiny85, ATtiny44 or ATtiny84 microcontroller using the Arduino software. These are small, cheap (\$2-3) microcontrollers that are convenient for running simple programs. The ATtiny45 and ATtiny85 have eight legs and are almost identical, except that the..... Listed under: [Arduino Programmer Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

670. [Charliexploded LED Clock – Arduino](#)



One of my clocks stopped working – and it happened to be a clock my wife likes a lot. Went to the repair shop and the guy said that he didn't have the spare parts and could not repair this. So – I thought –..... Listed under: [Clock – Timer Projects](#), [LED Projects](#)

671. [Star Jar Geiger counter triggered LED decoration using Arduino](#)



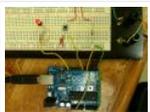
This instructable builds on top of the Geiger counter triggered LED decorations I made last year. This version powers the Geiger counter from the Arduino (itself now powered from a mains adaptor, so I no longer need to keep feeding them batteries) and the LEDs..... Listed under: [Calculator Projects](#), [Game – Entertainment Projects](#), [Home Automation Projects](#), [LED Projects](#), [Projects](#)

672. [Arduino Cat Detector SD Card Logger](#)



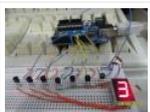
I used: an Arduino Uno a Parallax PIR Motion Sensor and a Saeed Studio SD Card Shield Arduino, shield, sd card, logging shield, storage, logger Check out This instructable on PIRs in case you didn't know what it is: <http://www.instructables.com/id/PIR-Motion-Sensor-Tutorial/> Step 1: Connect your PIR..... Listed under: [Memory – Storage Projects](#), [Security – Safety Projects](#), [Sensor – Transducer – Detector Projects](#)

673. [Physical Computing with Arduino](#)



Digital pins 1-7 are generally used as input pins and Digital pins 8-13 are used as output pins. Digital pins 9-11 can be used as analog output pins. That is, they can send they can send signal of variable voltage. 5/15/2012 Getting started with Arduino..... Listed under: [Calculator Projects](#)

674. [Pi...In A Single Digit using an Arduino](#)



Ah yes. It has been a long time since I posted an Instructable...well here goes: It has been a while since I have been motivated to write an 'ible. During this idle time I have been writing, rewriting and editing code as well as designing..... Listed under: [LED Projects](#), [Projects](#)

675. [Printer to vinyl cutter hack](#)



Vinyl cutters are used in the sign writing industry, and are great for making stickers, signs and graphics. I would like to thank Instructable members silverjimmy and Groover for their fantastic laser cutter instructables, without which I would not of been able to complete this..... Listed under: [CNC Machines Projects](#)

676. [Auto reset stuff with Arduino](#)

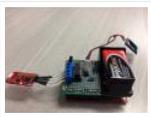
Have a problem with my wireless bridge. It works for a some time then, despite it saying everything it fine, refuses to connect wirelessly. All it needs is to be turned off and on again and it works again (for a while!). I decided that.....

Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

677. [Automatically water your small indoor plant using Arduino + pump](#)

Have you ever wanted a little plant to brighten up your desk or home, but you're afraid that you'll forget to water it? Fear no longer! Using an Arduino, a scavenged wall-wart, and a peristaltic pump, you can set up your plant to be watered.....

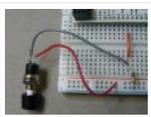
Listed under: [Home Automation Projects](#), [Motor Projects](#)

678. [Solar Module](#)

This page maintains the necessary documentation (hardware & software) for recreating the Solar Hardware Module ("Solar Module") using either Arduino UNO or TI Launchpad. Prior to creating the solar module, we performed several experiments using a custom built solar panel fixture. For more information on..... Listed under: [Solar energy projects](#)

679. [Arduino Vocal Effects Box](#)

This Arduino-powered vocal effects box pitch shifts and distorts incoming audio signals to produce a wide variety of vocal effects. This project is my first experiment with real-time digital signal processing using Arduino. It samples an incoming microphone signal at a rate of about 40kHz, manipulates..... Listed under: [Projects](#), [Sound – Audio Projects](#)

680. [Momentary Switch as Digital Sensor](#)

In many cases switches are just switches. They directly control the flow of electricity to an appliance, flashlight or mains-voltage lamp. An example of this is the switch on the wall in your living room. In many cases nowadays

however, switches are digital sensors, meaning..... Listed under: [Sensor – Transducer – Detector Projects](#)

681. [Simple and reasonably accurate pedometer system](#)

Our final project for ECE 4760 provides a simple but effective exercise monitoring system of the user's walk or run.

With an increase of the number of health conscious individuals hoping to remain fit, we designed a system that allows the user to keep track..... Listed under: [Metering – Instrument Projects](#)

682. [Smart Thermal + Arduino](#)

Many times we are faced with a heat containing coffee and don't know if the fluid is at the proper temperature and it is impossible to know just by looking at the bottle ended up losing time with a coffee that is cold and we..... Listed

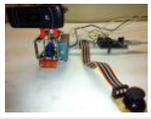
under: [Temperature Measurement Projects](#)

683. [Bacon Alarm Clock – Arduino](#)

This is a project I came up with that was inspired by my love for bacon! This is an alarm clock that is designed to wake you up with the smell of bacon. With the help of an arduino the alarm clock will already have..... Listed under: [Clock –](#)

[Timer Projects](#), [Home Automation Projects](#)

684. [Arduino controlled webcam panner](#)



This is an instructable to show how to mount a webcam on a servo in a meccano frame and controlling it via an Arduino board. For a while now I was looking to do something more than blinking LEDs with my Arduino. This idea came..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#), [Video – Camera – Imaging Projects](#)

685. [Robotic Arm Trifecta \(Science Olympiad\)](#)



In the fall of 2012, we set out to construct a robotic arm for the Science Olympiad competition that would be capable of performing the required set of tasks efficiently and to perfection. This instructable will attempt to guide you through the thought processes used..... Listed under: [Robotics – Automation Projects](#)

686. [Arduino FIO Tutorial](#)



Overview The Arduino Fio is a microcontroller board based on the ATmega328P (datasheet) runs at 3.3V and 8 MHz. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 8 analog inputs, an on-board resonator, a reset button, and holes..... Listed under: [Battery Projects](#)

687. [The Motivational Moody Workout T-Shirt using an Arduino](#)



I call this project “The Motivational Moody Workout T-Shirt” . Basically what I wanted to do was a t-shirt that makes you want to get out in the open and work out. To make that work, I sewed a LilyPad arduino onto a t-shirt and..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)

688. [Self-Balancing Robot](#)



First of all I want to apologize for my English, if you don't understand something, please, ask. I know that a self-balancing robot is not new, but when i started this project i found a lot of information, but never in the same site, i..... Listed under: [Robotics – Automation Projects](#)

689. [Interface and Application Programming](#)



My sensors have not been functioning too well with my computer, as every time I try to connect the hello.light or hello.mic boards and run python through my terminal, I either get the error “resource busy”, or my computer completely freezes! Therefore, I decided to..... Listed under: [Arduino Programmer Projects](#)

690. [Arduino+Stepper Motor Camera Slider](#)



This is a trial and error / design and development process which I followed in developing a camera slider for creating time-lapse video clips on my DSLR camera. The idea came from using standard Aluminium extrusions I have available at hardware stores, and create a..... Listed under: [Motor Projects](#), [Video – Camera – Imaging Projects](#)

691. [Urban Sensing Networks using Arduino](#)



Often government data sets available to us online are taken from major nearby metropolitan areas or infrastructural centers. With an easy to follow introduction to new softwares and technologies the “urban sensor kit” allows anyone to obtain location specific information and share that information with..... Listed under: [Sensor – Transducer – Detector Projects](#)

692. [FINAL Touch sensor with arduino](#)



The tutorials we used. <http://www.instructables.com/id/Touche-for-Arduino-Advanced-touch-sensing/?ALLSTEPS>
<http://www.instructables.com/id/Calm-Relaxed-Interaction-Plant-Plus-1/?ALLSTEPS> Download arduino software and the processing software. From their respective websites. Processing.org arduino.cc All of the supplies we used: (we didn't include the water bottle as a sensing object, and used an inductor instead of a coil) Arduino..... Listed under:

[Sensor – Transducer – Detector Projects](#)

693. [RFID touch screen Automated Bar – Barduino v2.0 with Facebook Integration!](#)



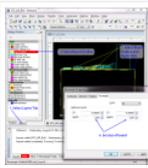
Got an Arduino? Like parties / alcohol? Can't be bothered to make your own bar quality cocktails? Make a Barduino! Its back, with new features in v2.0: Facebook integration – Facebook registration Page to track and graph drink consumption Touchscreen with gesture support RFID user..... Listed under: [Internet – Ethernet – LAN Projects](#), [RFID – NFC projects](#), [Sensor – Transducer – Detector Projects](#)

694. [Stripboard Arduino shield for programming ATtiny45 and ATtiny85](#)



This instructable (entered in the Arduino Challenge contest – you can vote for it above) shows how to make a stripboard Arduino shield for programming either ATtiny45 or ATtiny85 microcontrollers with an Arduino, as per these tutorials from the High-Low Tech group at MIT: Arduino..... Listed under: [Arduino Programmer Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

695. [Schematic Entry and PCB layout](#)



In this lab you will be using a program to enter a schematic and lay out a printed circuit board (PCB) that will then be manufactured. At this point of the semester you don't know enough to design your own circuit, so I am giving..... Listed under: [How To – DIY – Projects](#)

696. [Binguino: An Arduino-based Bingo Number Generator](#)



Bingo! My granddaughter enjoys playing Bingo, so I went out and bought her a cheap set at a local discount store. The cards and the markers are fine, but the spinner disk for selecting the numbers is a piece of garbage. It flew apart about..... Listed under: [Clock – Timer Projects](#), [Projects](#)

697. [Intuitive Vibrotactile Feedback Educational Feedback Devices](#)



The goal of the project is to come up with an affordable yet generic vibrotactile feedback device to be used for educational purposes. A chemistry learning environment is developed to demonstrate a specific application of our device, in which users can manipulate ions and feel..... Listed under: [Internet – Ethernet – LAN Projects](#)

698. [Bird Proof Squirrel Feeder & Solar Powered Camera using Arduino](#)



The Solar Powered-Bird Proof Squirrel Feeder w\ Camera will allow squirrels to retrieve seeds, nuts, and corn kernels without worrying about those pesky birds stealing all their food. While your squirrel enjoys the spoils of your feeder, you'll enjoy lovely digital photos to entertain and..... Listed under: [Home Automation Projects](#), [Video – Camera – Imaging Projects](#)

699. [Arduino mood lighting](#)



This instructable will show you who to build a rgb lighting system with an arduino. You can also control it with an ipod/iphone/ipad using touchOSC. In my previous instructable I showed how to control one rgb led in this you can control heaps with a single chip..... Listed under: [LED Projects](#), [Projects](#)

700. [Combination Circuit for Digital and Analog](#)

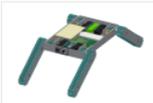
Goals Understand the Analog Signals and use your knowledge to program your Arduino and let it play music Get known of the Seven-segment display and use your Arduino Board together with the Shift Register to control the number. In the Second Week you will be..... Listed under: [CNC Machines Projects](#)

701. [LilyPad Arduino Sensor Demo Mat](#)

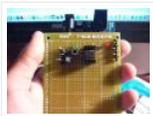
This tutorial shows you how to create a sensor demo mat for the LilyPad Arduino. I wanted a place where I could experiment with the different sensors, but also something that I could use to show examples of what can be done without constantly uploading..... Listed under: [Sensor – Transducer – Detector Projects](#)

702. [Build Your Own BARBOT using Arduino](#)

Ever wanted a robotic liquor server? I purchased a Lynxmotion robotic arm last year and an Arduino (deci) to play around with. I had it serial controlled with a joystick and it was a great way to start in robotics. More recently I wanted to..... Listed under: [Robotics – Automation Projects](#)

703. [Highly maneuverable search and rescue robot](#)

Finalized Prototype Shown below is the finalized prototype. The purpose of the prototype was to demonstrate the feasibility of a small, highly maneuverable search and rescue robot. As such, the completed prototype was successful. Capabilities include a ground speed of 10 inches per second, battery..... Listed under: [Medical – Health based Projects](#), [Robotics – Automation Projects](#)

704. [How to make and use the arduino as an Isp for an ATtiny85](#)

In this instructable I will show you how you can make your own Atting programming shield for the arduino and then use the arduino as a programmer. Usually If you don't have a shield you can do a breadboard version to program the ATtiny. (Step1)..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

705. [DIY Super Bright LED Skate Lights](#)

You might remember my first set of lights that I put on my dad's skates. Well those weren't bright enough and they were a lot of work because I didn't know how to make PCBs. In this i'ble I'll cover how to make your own..... Listed under: [LED Projects](#)

706. [Interactive LED box](#)

Project Goal The goal of this project is to create a low resolution display of graphical art that interacts with people who are handling it. My basic idea is to create such a "magic box" with a LED matrix on one side. It should be..... Listed under: [LED Projects](#)

707. [Brushless Gimbal with Arduino](#)

This is a Spring 2014 Electronics project at Pomona College created by Andreas Biekert and Jonah Grubb. Thanks to Professor Dwight Whitaker, Tony Grigsby and the Pomona Physics Department. Our goal with this project was to create a 2 axis brushless gimbal controlled solely by..... Listed under: [Video – Camera – Imaging Projects](#)

708. [Biometric Sensing Computer Mouse](#)



In the past five weeks, we have considered and built three projects, ranging from: optical sensing, electromyography (EMG), and galvanic skin response detection. Initially, our project was using an optical sensor and EMG to detect finger movement for applications, such as: playing piano and Morse..... Listed under: [Sensor – Transducer – Detector Projects](#)

709. [BabyTrackr](#)



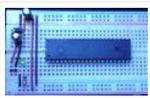
I found a pressure sensor matrix that we could adapt to a pressure sensor patch on the stomach of the women in labor on this webpage (see below). It gives instructions how to build a pressure sensor by using two pieces of cloth and conductive..... Listed under: [Medical – Health based Projects](#)

710. [Custom Arduino Shield and Sensors](#)



Overview: This instructable will construct a series of custom sensor modules and an Arduino shield. Such modules are available from many different sources, but fans of the Instructables website would probably find satisfaction in making their own. Each module will be a set size of..... Listed under: [Sensor – Transducer – Detector Projects](#)

711. [How To Make The Easiest Breadboard Arduino-Compatible Sanguino-Equivalent](#)



Okay so the Title is indeed a bit of a mouthful lol ! Ive been needing to mess around with a desire for MORE Input/Output pins than the Arduino UNO and nowadays the UNO uses an Atmega328 microcontroller, & its limited to only about 20..... Listed under: [Development Board – Kits Projects](#)

712. [Head Mouse – Game controller or disability aid using Arduino](#)



My kids wanted to have a head controlled mouse for playing Minecraft – they wanted to move their heads and have the field of view move. I decided that was a challenge I couldn't resist, so I decided to build a movement controlled mouse using..... Listed under: [Game – Entertainment Projects](#), [Medical – Health based Projects](#)

713. [Build Your Own Arduino Web server](#)



The Arduino Ethernet Shield is a sweet toy!!! Everybody, from the beginner who got their Arduino yesterday and hasn't slept since, to the hard core pro who learned c as a second language, can learn how to use the Ethernet Shield and have lots of..... Listed under: [Arduino Programmer Projects](#)

714. [Connect 4 Binary Clock using an Arduino](#)



Welcome ladies and gents! As an entrepreneur, I'm always looking for great projects to share. Myself and two other classmates recently put together a project for our Master's of Engineering program in Technical Entrepreneurship, and we're thrilled to share our vision with you. Remember that..... Listed under: [Clock – Timer Projects](#), [Projects](#)

715. [Speech-controlled Game Boy Advance using arduino](#)



This is a project I worked on for my electronics class at Pomona College. Thanks to Professor Dwight Whitaker and Tony Grigsby for their help and guidance throughout this project, and credit to Jonathan Wong for the idea for this project! Also, here's a list..... Listed under: [Game – Entertainment Projects](#)

716. [Sign Language Translator using Arduino](#)



First of all, this project is not finished. We're still trying to improve and fix some problems. Right now, we're only able to translate letters from "A" to "E". The program still have problems while identifying those letters, the values for each of them match..... Listed under: [Other Projects](#), [Projects](#)

717. [AC Dimmer Circuit: 46](#)

Green wire is zero_cross signal, goes to Arduino digital pin 2 in. Yellow wire is light dimming signal, comes from Arduino digital pin 11. The LED on board should dim or fade along with the AC light source. Fading will not work until AC power..... Listed under:

[Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

718. [Extra inputs for Arduino with a keyboard](#)

The Arduino is perhaps the coolest thing on earth. There are many types, the Uno, the Mega, the Pro, the Pro Mini, etc. etc. But one thing that often can be a problem is that you only have a limited number of inputs and outputs.....

Listed under: [Game – Entertainment Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

719. [Motion Sensing Digital Camera & Alarm using Arduino](#)

Welcome to my instructable on how to make an Arduino-controlled motion sensing camera and alarm! The motivation behind this project, which I worked on in my electronics class at Pomona College, was the need to keep away varmints (particularly raccoons) that were digging up my..... Listed under: [Sensor – Transducer – Detector Projects](#), [Video –](#)

[Camera – Imaging Projects](#)

720. [Easy Electronics Organization using Arduino](#)

Like many other electronic enthusiasts I need to have a constant supply of materials in order for us to keep building, hacking, or just playing around with electronics. However as probably any of us have come to realize we need a lot of space and..... Listed under: [Home Automation Projects](#)

721. [A Planar 2-DOF Haptic Device for Exploring Gravitational Fields](#)

For our project, we built a planar, 2 degree-of-freedom haptic device for educational use. The design is based on a 5-bar mechanism. We wanted to build a device that would have the versatility to teach various concepts, but would still be relatively affordable (as the..... Listed under: [Sensor – Transducer – Detector Projects](#)

722. [Make a Musical Bench using Arduino](#)

The Musical Bench is an exhibit which makes music when people touch, kiss, or hold hands. It uses a micro-controller to detect changes in resistance, via the copper armrests, and plays high or low notes depending on how much current flows through you and a..... Listed under: [Sound – Audio Projects](#)

723. [Portable Haptics System Hardware](#)

Mobile Phone There is a wide selection of mobile phones on the market. For our development, we chose Nokia 6210 Navigator due to its ability to run Java, accompanied by Bluetooth communication, and its small form factor. The phone mainly acts as a remote control..... Listed under: [Sensor – Transducer – Detector Projects](#)

724. [Robo-Mobile – A Homemade Bluetooth Robot using arduino](#)

Background This robot is one I built to learn. Before this project I did get my feet wet with a few small scale Arduino projects like an ultrasonic robot, (that would move backwards until it was a certain distance away from the wall,) and I..... Listed under: [Robotics – Automation Projects](#)

725. [Knockdown Warning Indicator \(Redux\)](#)



This week I continued developing a device that warns of the potential of a knockdown – the process by which an over-canvased sailing ship is lain over on her beam-ends during a squall. The potential for sinking at this point is high, especially if there..... Listed under: [Security – Safety Projects](#), [Sensor – Transducer – Detector Projects](#)

726. [Smartphone controlled Arduino tank using Annikken Andee](#)



Hi guys, I am Robin, one of the developers of Annikken Andee. Just a few weeks back we were invited to be a part of Arduino Day Singapore 2014. On the day of the event, we showcased a missile-firing lego-crushing smartphone controlled Tank built using..... Listed under: [Phone Projects](#)

727. [Bitcoin Price Ticker \(almost\) from scratch using Arduino as ISP](#)



Hello everyone! I decided to create this tutorial on how to make a Bitcoin Price Ticker. Well, this is only a prototype and I will make a smaller edition with a more pleasant design and some other features at a later time. However, this serves..... Listed under: [Internet – Ethernet – LAN Projects](#)

728. [Machine Design](#)



The assignment for this week is to automate the machine assembled two weeks ago. For this Roxanna milled the Arduino's shield for controlling the steppers, but Alejandro found that we haven't all the components for stuffing, specially the A3982 – stepper motor driver, so as..... Listed under: [How To – DIY – Projects](#)

729. [Tracking Cat Eyes via Kinect using Arduino](#)



This instructable was made as part of the CS graduate course “Tangible Interactive Computing” at the University of Maryland, College Park taught by Professor Jon Froehlich. The course focused on exploring the materiality of interactive computing and, in the words of MIT Professor Hiroshii Ishii,..... Listed under: [Game – Entertainment Projects](#)

730. [Simon Game](#)



High Level Description: For part 3 of the lab, our group decided to build a “Simon” game. Our game setup uses 3 buttons and 4 LEDs. Each button corresponds to one LED and the 4th LED is used to indicate an error. The game starts..... Listed under: [Game – Entertainment Projects](#)

731. [Musical Exercise: Workout Shirt MP3 Player Powered by Exercise using Arduino](#)



People love listening to music while exercising. Music provides the motivation needed for individuals to keep exerting energy and get in shape. So, because people enjoy listening to music while exercising, what if an MP3 player only played an individual's music while they are active?..... Listed under: [Game – Entertainment Projects](#), [Sound – Audio Projects](#)

732. [ANDROID BASED ROBOTICS](#)



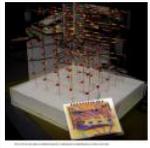
While the field of robotics is continuously expanding at a remarkable rate and better performing robots are created every year, robotics still remains out of reach for many students and researchers. The main reasons for this difficulty are the high complexity of the hardware and..... Listed under: [Robotics – Automation Projects](#)

733. [Bird Feeder Monitor using Arduino](#)



This is a project to monitor the number of birds that visit my bird feeder, as well as record the amount of time spent feeding. I used an Arduino Yún and a capacitive touch sensor, Adafruit CAP1188, to detect and record the birds feeding. On..... Listed under: [Home Automation Projects](#)

734. [5x5x5 LED Cube – Orientation Independent 3D Display](#)



Introduction Our project, in one sentence, is an orientation independent 3D LED display. We were inspired by various videos on youtube of similar cubes but also by the idea of creating an interactive 3-dimensional display. We built a 5x5x5 LED cube display and controller..... Listed under: [LED Projects](#)

735. [Talking Arduino Heart Rate Monitor](#)



My partner and I wanted to make heart rate monitor that does more than simply measure a user's heart rate. Our heart rate monitor talks! Each button gives a verbal description of its functionality and makes the measurements visible on the screen. This monitor will..... Listed under: [Medical – Health based Projects](#)

736. [SoundBox](#)



Group #1 Avneesh Sarwate (asarwate@) John Subosits (subosits@) Joe Turchiano (jturchia@) Kuni Nagakura (nagakura@) Yaared Al-Mehairi (kyal@) Ideas and Sketches Squat Coach – Detects the depth of your squats and assesses your form. Flex sensor is positioned to run up the back of knee..... Listed under: [Sound – Audio Projects](#)

737. [Digital I/O with Arduino Boards](#)



Readings in Physical Computing Ch 6. pgs 87-136 (this week and next week) Ch 7: Serial Communication [137-143; 149-150; 153-161] Before the lab You should have already successfully installed the Arduino environment on your laptop, built the LED circuit, and successfully load/run the “blink” program to..... Listed under: [Development Board – Kits](#)

[Projects](#)

738. [The Creepy Doll using Arduino](#)



Here at Mikamai, we often organise events and hackathons. After the last hackathon, someone left an old doll, and it was kinda creepy... so why not make it even creepier? I decided to put two red LEDs instead of the eyes, and a vibration sensor..... Listed under: [Game – Entertainment Projects](#)

739. [Capture the image of a falling object](#)



The aim of this project is to create a setup to capture the image of a falling object or any object in motion at a precise time using a DSLR and Arduino microcontroller. It can be done in many different ways, but the method I..... Listed under: [Video – Camera – Imaging Projects](#)

740. [Catchin' time using Arduino](#)



This tutorial will show you how to build an interactive toy for children. This toy wants to give a boost to children to move and play with friends at home or in a park, instead of watching TV and playing videogames. Catchin' time is a..... Listed under: [Game – Entertainment Projects](#)

741. [Sleep n' Tweet](#)



Step 1: The Sleep n' Tweet Now I am lucky enough to work at the greatest company in the world as a University of Waterloo, co-op student. It might not even be a company you've heard of yet. They're named Upverter and we are trying..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#)

742. [Password access with arduino](#)

~~ The complete kit for this tutorial is now for sale at www.razvantech.com Get one! ~~ This instructable will show you how to make a pass-code lock system using the Arduino Mega board. When you type the right code, an LED lights up on the servo..... Listed under: [Security – Safety Projects](#)

743. [Make your pet dishes tweet](#)

You give your pets everything: Food, water, a home, toys, and love. Why not give them a twitter account? This project allows you to monitor your pets' eating habits and receive alerts when their supplies are low. It's also a cute, fun way to learn..... Listed under: [Internet – Ethernet – LAN Projects](#)

744. [Animatronic Green-Winged Macaw Papercraft](#)

Hello everybody! This macaw was part of a work of biology at the college of my daughter, who was attempting to educate people not to buy wild animals. This beautiful animal, natural tropical forests of South America, is highly coveted by smugglers. In captivity, unlikely..... Listed under: [Game – Entertainment Projects](#)

745. [AlarmingTweet](#)

This project will add tweeting capabilities to the GE 45142 Choice-Alert Wireless Control Center Alarm system. The alarm system allows you to connect up to 16 different sensors across 4 zones and with the addition of the Arduino powered AlarmingTweet you can enable it to..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

746. [Maze Solving Robot](#)

In this instructable I will be showing you how to build a maze solving robot. This is actually my 3rd attempt at making one. The first was a complete failure. The second was alright at finding the end of the maze, but it could not..... Listed under: [Robotics – Automation Projects](#)

747. [USB Mouse Made Out Of A Wii Nunchuck](#)

This instructable will describe how to convert a Nintendo Wii Nunchuck controller into a USB 2-button mouse using a Teensy USB. The Teensy USB is a very user-friendly development board that can be programmed in an Arduino environment. The Teensy USB development board and necessary..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

748. [Reddit Controller. USB Upvote/Downvote button](#)

Not too long ago I saw the "Awesome Button" video on the Make Magazine podcast. In the video Matt Richardson shows how you can take a Teensy development board and turn it into a simple USB keyboard. In his example everytime a button is pressed..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

749. [Electric Turtle Robot](#)

Be sure to check out my new instructable , the 'little Tank!' Really nice tracked design complete with cut files! update: I've had so much response on this instructable, thanks to all. If you end up making one, please let me know! I'd love to..... Listed under: [Robotics – Automation Projects](#)

750. [LED Microcontroller Debug Module](#)



When it comes to debugging a microcontroller circuit, there aren't a lot of simple options. Since a microcontroller circuit might have multiple things going on at the same time, measuring voltages with a DMM isn't an option. Using an computerized In-Circuit-Debugger solution is expensive and..... Listed under: [Development Board – Kits Projects](#), [LED Projects](#)

751. [Wise Clock 3 – Arduino-based geeky alarm clock](#)



Wise Clock 3 is an open-source, highly hackable geeky clock that shows a lot more than the time. Its main function is to display user-editable quotations retrieved from an SD card (like those used in photo cameras). In addition, Wise Clock 3 can show the..... Listed under: [Clock – Timer Projects](#)

752. [Giant Leaf Planetarium](#)



Have you ever wanted a mini-planetarium for your room? Well now you can! This instructable will help you create a fairly portable planetarium leaf that you can put over a bed, a couch, or anywhere else in your house. All you need is an IKEA..... Listed under: [Game – Entertainment Projects](#)

753. [Universal Gripper – Syringe Powered](#)



The "universal gripper" developed by researchers from Cornell University, the University of Chicago, and iRobot inspired me to create my own version. The YouTube video is quite impressive. The gripper can form around very asymmetrical and smooth shapes and still pick up the object. I..... Listed under: [Robotics – Automation Projects](#)

754. [Arduino Project Board](#)



The Arduino Project Board is basically a board to transfer your ATMEGA168/328 to when you have completed your project and no longer need to use the Arduino as a development board. Simply transfer the programmed chip from the Arduino board to the Arduino project board..... Listed under: [Development Board – Kits Projects](#)

755. [Turn your Arduino Uno into an USB-HID-Mididevice](#)



While building an Arduino Uno based Midi-Controller for Ableton Live, I came across the HIDUINO project (<http://code.google.com/p/hidduino/>). It allows you to turn your Arduino Uno (or any other device using an AVR-USB chipset like the 8u2) into a driverless HID/Midi device. It's much..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sound – Audio Projects](#)

756. [Rave Rover – Mobile Dance Stage](#)



Rave Rover was designed and built to be a portable dance platform for parties, raves, and any other trouble we can get into! I will go into as much detail as I can explaining the entire build process, and where to find parts and other..... Listed under: [Game – Entertainment Projects](#)

757. [How to hack EEG toys with arduino](#)



i had heard a few years back about the ability of hooking up toy EEGs so you can interface them with your computer. I was reminded of this for a project i wanted to do for a class (instructable coming soon ;-)), and i also..... Listed under: [Game – Entertainment Projects](#)

758. [Building a Portal Turret with motion controlled audio and lighting](#)

In this Instructable I'm going to show you how I went about building my very own life size talking Portal Turret from start to finish. This is a fairly in depth project that will cover every stage of construction and all the techniques I used..... Listed under: [Sound – Audio Projects](#)



759. [Pan/Tilt Motion System for Control Education](#)



Pan/Tilt Motion System for Control Education Ricardo G. Sanfelice, University of Arizona Project supported by Mathworks Website developed by Colin Lasharr, University of Arizona Contents Introduction Instructions for Building the System Installation Instructions The Arduino Board Simulink Initial Parameter Identification System Identification for Zenith..... Listed under: [Arduino Programmer Projects](#)

760. [Hack the Nabaztag using Arduino](#)



This is a Nabaztag – Armenian, apparently, for “hare”. It’s an adorable bunny rabbit packed with sensors and communication devices.... and it’s completely unusable. There’s people who wrote some interesting software to hack it, and I applaud them: however, I could never actually get my..... Listed under: [Game – Entertainment Projects](#), [Robotics – Automation Projects](#)

761. [DIY Parking Sensor using Arduino](#)



The last time I was home visiting my parents I noticed bumper imprints caused by my mother suburban on the stairs leading up from the garage. Their garage it turns out is just barely long enough to fit their gigantic vehicles. So I decided it..... Listed under: [Car Projects](#), [How To – DIY – Projects](#), [Sensor – Transducer – Detector Projects](#)

762. [Using Mozzi Library with 5 potentiometers using arduino](#)



Getting Started The goal of this project was to create filters and controls to that can manipulate sound that is being generated through an Arduino. Normally Arduino can only generate simple tones that are not useful if you are trying to achieve complex sounds and..... Listed under: [Metering – Instrument Projects](#)

763. [Arduino Quilting Machine](#)



The Arduino Quilting Machine combines the mechanics of a sewing machine, CNC technology and Arduino as an operating system. The project is designed to translate a vector file from a computer into G-code and subsequently into Arduino language which then moves the machine. The project..... Listed under: [CNC Machines Projects](#)

764. [Diy Xbox wireless controller adapter for Pc](#)



This instructable will go over the steps to connect a RF module from an RR0D xbox to your computer so you can use a wireless controller with your computer. *****DISCLAIMER***** DONT TRY THIS IF YOU DONT HAVE ANY EXPERIENCE WITH ELECTRONICS/SOLDERING OR COMPUTERS IM NOT..... Listed under: [How To – DIY – Projects](#), [Internet – Ethernet – LAN Projects](#)

765. [Make a digital “meow” from analog clock using arduino](#)



Is your analog clock just not doing enough stuff? Want to do digital things with an analog clock? This tutorial will show you how to make a Kit Cat Clock play a “meow” sound clip, at precise time intervals, using the Atmega 328P-PU via the..... Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#)

766. [DIY Telepresence Documentation](#)



This is the documentation page for the Spring 2012 DIY Telepresence project. Here you will find schematics, software, and guides for the robot. The goal of the project was to design a low-cost, easy to build telepresence robot. Some of the features include: Segway based..... Listed under: [Robotics – Automation Projects](#)

767. [Total Recall- Arduino Simon Says on steroids](#)



Total Recall is a Simon based game for the Arduino. Your basic Arduino Simon Game consists of 4 buttons, 4 LEDs, an Arduino, some code and maybe a speaker and sound effects. Total Recall takes things a step further by adding an LCD display and..... Listed under: [Game – Entertainment Projects, Projects](#)

768. [Voice Activated LED Lighting with Arduino](#)



This project is an extension to the Speech Recognition with Arduino by leandro4b (<http://www.instructables.com/id/Speech-Recognition...>). However, instead of using 3 separate colored LEDs, I used a multicolor 4-channel RGBW LED Emitter. I had the opportunity of working at LED Engin last summer, which is why I..... Listed under: [LED Projects](#)

769. [The Wondrous Weather Cube](#)



We created an Internet-enabled companion cube for your computer, which displays different kinds of information by glowing red or green. Depending on its orientation, and which labeled face is oriented upwards, our companion cube displays either stock readings of the NASDAQ or the outside temperature..... Listed under: [Home Automation Projects](#)

770. [Laser Pointer Switch using arduino](#)



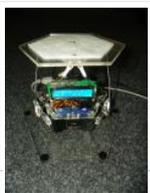
This instructable will detail how to make a switch that uses an arduino to sample light. When the light sample reaches a threshold it will trigger a relay that can be used to turn on/off a small appliance (light, radio, fan, etc...) The parts for..... Listed under: [Home Automation Projects, Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

771. [FabECG: a simple electrocardiogram board](#)



Technologies for rudimentary physiological sensing are getting cheaper and easier to implement. Consider, for instance, these non-contact sensors from UCSD which can be used to take an EEG through hair or an ECG through a T-shirt! One can even make a simple oscilloscope to digitize..... Listed under: [Medical – Health based Projects](#)

772. [Arduino controlled Rotary Stewart Platform](#)



This instructable is about building a Rotary Stewart Platform. It allows to position its moving platform in six degrees of freedom. This specific platform is designed to be able to position a DSLR or any other digital camera. This version of Stewart Platform uses instead..... Listed under: [Video – Camera – Imaging Projects](#)

773. [DC motors Relays](#)



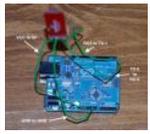
Let's get the math over right off the bat. There are a LOT of attempts to describe how Ohm's Law works, each one nerdier than the last. Here' one I like. Warning: SFWBN (safe for work but nerdy). $V =$ voltage measured in volts -..... Listed under: [Motor Projects](#)

774. [ATtiny85 POV Display using arduino](#)

The first time I saw a POV (Persistence Of Vision) display was on a show called FAQ on TV. The POV display consisted of an oscillating shaft with 6 LED's mounted on the end of the shaft. Since then I have always wanted to make..... Listed under: [LED Projects](#)

775. [making art interactive](#)

Unfortunately, due to my need to reclaim my arduino and breadboards, we don't have photographic documentation of our circuit. However, the structure of it was rather self-evident. Although we arranged the circuit in a such a way that we could program other functions, but we..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Phone Projects](#)

776. [Control Keyboard & Mouse Android app via Arduino](#)

This instructable will show you how to control your computer's keyboard and mouse with an Android app via bluetooth to an Arduino BACKGROUND Ever wanted to control your computer's mouse/keyboard functionality without having to actually sit in front of it? I do all the time..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

777. [Augmented Water using arduino](#)

The Augmented Water device helps you save water by turning red after one Liter. The device, built by @tamberg during a water hackathon, is made from an Arduino, a flow sensor and coloured LED pixels. Video <https://www.flickr.com/photos/tamberg/14346321456/> (thanks kiilo) In case you want to build..... Listed under: [Home Automation Projects](#)

778. [Blind Maze Navigation using 2-DOF Haptic Joystick](#)

The domain of haptics has immense potential as a technology to assist visually-impaired individuals with their navigation of the physical world. In this project, we sought to develop a 2-DOF haptic joystick to provide force-feedback to a user as she attempts to navigate a maze..... Listed under: [Game – Entertainment Projects](#)

779. [Temperature Displayed on 4 Digit 7 segment using Arduino](#)

In this project I'll display the temperature in a 4 digit 7 segment display (common anode). The sensor is the cheapest you can find so actually the temperature changes pretty easily which makes the display to show always different temperatures. But the idea is to..... Listed under: [Projects](#), [Temperature Measurement Projects](#)

780. [A compact, Arduino altimeter for RC Planes](#)

Please vote for this Instructable if you think it deserves it! Thanks! The Ultimate Altimeter is a super-compact, Arduino controlled altimeter capable of measuring the altitude with an accuracy of 0.3 meters, and saving the highest and lowest values it has measured. It is powered..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

781. [Wiring Harness for the LCD Panel](#)

Assembly of the Female Connector Block The wiring harness has a male and female end. The gender of electrical and mechanical parts is described on this Wikipedia page. The header pins that are soldered into the circuit board for the LCD panel are plugged into..... Listed under: [LCD Projects](#)

782. [Android Accessories Made Easy With Arduino](#)

The Android Open Accessory Protocol makes it possible for you to create custom Arduino-based accessories for your Android phone or tablet. Attend this session to learn how to get started, the hardware & software required and how Handbag makes development easier. Content will be useful..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)



783. [Huge Arduino Animatronic LED Eyeball using arduino](#)



I'm currently in the process of making a Halloween contraption that has a few components that are worth documenting. The Huge Arduino Animatronic LED Eyeball is one of them. Background Most animatronic eyeball projects that I found were more or less life-size. They were usually..... Listed under: [LED Projects](#)

784. [Brain-Computer Interface](#)



Introduction Our goal was to build a brain-computer interface using an AVR microcontroller. We decided that the least invasive way of measuring brain waves would be using electroencephalography (EEG) to record microvolt-range potential differences across locations on the user's scalp. In order to accomplish this,..... Listed under: [Medical – Health based Projects](#)

785. [Happy Androids with Arduino Video instructions](#)



Arduino + Android Normally smartphone events are tightly coupled to your phone device itself. When your cell phone is ringing, your phone speaker plays a ringtone. When you get a new text message, your phone displays it on its screen. Wouldn't it be thrilling to..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

786. [Hack an old iPod using an Android and an Arduino](#)



This tutorial shows you how to use an Arduino to turn that old dusty music player into a Bluetooth controlled docking station. Even if it has a cracked screen or a dead battery it can still be used. The following instructions will show you how..... Listed under: [Arduino Android](#)

787. [Finalized Prototype](#)



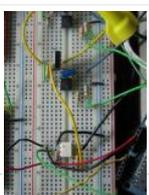
Shown below is the finalized prototype. The purpose of the prototype was to demonstrate the feasibility of a small, highly maneuverable search and rescue robot. As such, the completed prototype was successful. Capabilities include a ground speed of 10 inches per second, battery life of..... Listed under: [Development Board – Kits Projects](#)

788. [Line Following Robot using arduino](#)



This is a Line Following Robot. It follows a black line that is drawn. It is able to detect the black line through one photocell and one analog light sensor. There is an LED in between the two sensors that gives off red light when..... Listed under: [Robotics – Automation Projects](#)

789. [AC Dimmer Circuit](#)



Overview Simple AC Dimmer circuit for incandescent bulbs. 128 levels of brightness. Parts are relatively cheap! How it Works This is an AC Chopping Circuit. The dim level sets where the AC waveform gets chopped on. More of the cycle makes the bulb brighter, less..... Listed under: [Development Board – Kits Projects](#)

790. [Traffic Signal Wiring with Arduino Controller](#)



I always wanted an old traffic signal and finally got one recently. However, it was very simply wired so that all the lights were fixed on. What fun is that? I also wanted to try out an Arduino controller and thought this would be a.....
Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Other Projects](#), [Projects](#)

791. [Make a High-Altitude Balloon Tracker \(Arduino\)](#)



One of the coolest projects I have done so-far with my kids is a “near-space” balloon. That’s not quite into space itself (100Km+) but so high that the sky looks black and you can start to see the curvature of the earth below you. The.....
Listed under: [Other Projects](#)

792. [Zigbee Wireless Relay Control and Power Monitoring System](#)



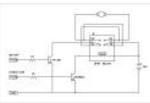
Introduction We designed a system for wirelessly controlling relays and monitoring current. This is used for a home load simulation. By wirelessly turning relays on and off by sending commands from a PC to a microcontroller we can change the total load (current) to our..... Listed under: [Metering – Instrument Projects](#)

793. [Balancing Instructable Robot using arduino](#)



In this Instructable I wanted to show to you how to make a self balancing robot. What makes it unique is that its exterior is made to look like the Instructables Robot. Internally it works in the principle of PID, it is a very popular.....
Listed under: [Robotics – Automation Projects](#)

794. [Bidirectional motor control](#)



One of the simplest ways to get a motor to turn in both directions is by using a double-pole, double-throw (DPDT) relay. Along with the relay, this hookup requires two transistors and two Stamp pins, one for on/off control and the other for direction control..... Listed under: [Motor Projects](#)

795. [Fab Lab Barcelona SuperNode](#)



[assignment] Add an output device to a microcontroller board and program it to do something. Class syllabus:: http://academy.cba.mit.edu/classes/output_devices/index.html [what i learned /am learning] _ Relearned Arduino installation. _ Work with DC motors and H-Bridge IC with Arduino; and its general concepts. _ About the various.....
Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

796. [LED Matrix Bike Safety Backpack using arduino](#)



Biking around cars can be a frightening thing, and staying visible at night is crucial for your safety. This tutorial will teach you how to make a custom LED Matrix Backpack that is much larger and brighter than traditional rear bike lights. Parts You’ll Need:..... Listed under: [LED Projects](#)

797. [An FTIR Touchscreen Device](#)



The DJ Touch is a portable turntable touchscreen and interactive LED display. Our end goal was to produce a low cost touchscreen device, and demonstrate its application in a common consumer application. Out of an interest in electronic music, and with the knowledge of deejaying’s..... Listed under: [Sensor – Transducer – Detector Projects](#)

798. [Arduino Scouting Robot](#)



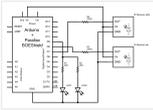
Summer Project: Arduino Scouting Robot [video id="P6PVLhjQ5FY" type="youtube"] Arduino Scouting Robot Part 1 * 12,9,5 volt power supply recharge it with a 12-volt charger keep power switch on to charge * 2 DC motors operate at 7.2V with a maximum current draw of 3 amps..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

799. [Rubik's Cube Solver using arduino](#)



This robot that can solve a Rubik's cube using Arduino. I learned how to solve a Rubiks cube last year, and I was also into Arduino, so eventually I ended up with an idea to make my own Rubik's cube solver. Like many people searching..... Listed under: [Robotics – Automation Projects](#)

800. [Connecting an IR Sensor](#)



Schematic Since the IR Sensor uses a light sensor, the schematic is very similar to that of the light sensor. The only difference is the addition of an IR LED and that the IR detector requires connection to 5V and ground. Breadboard Setup To setup..... Listed under: [Sensor – Transducer – Detector Projects](#)

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