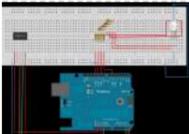
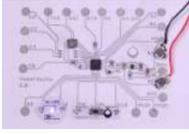
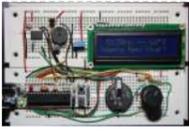




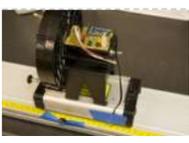
## Use Arduino for Projects

### Advanced View Arduino Projects List

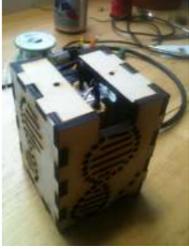
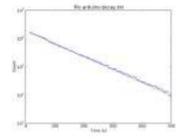
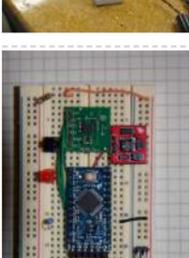
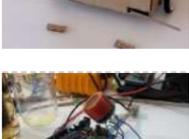
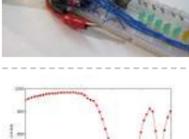
#### List of Projects using arduino with advance view:

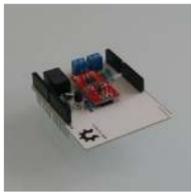
1.  [Controlling your trains with an Arduino](#) A quick introduction to the Arduino Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software. It's intended for artists, designers, hobbyists, and anyone interested in creating interactive objects or environments. Arduino can sense the environment by receiving input from a..... Listed under: [How To – DIY – Projects](#)
2.  [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](#)
3.  [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](#)
4.  [Pachube Client using 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: [Ideas](#), [Internet – Ethernet – LAN Project Ideas](#)
5.  [Graphing values in Arduino, the EASY Way!](#) 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](#)
6.  [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](#)
7.  [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](#)
8.  [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](#)
9.  [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](#)
10.  [Alarm Clock Overkill Using Arduino](#) 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](#)
11.  [The Clamshell Stompbox](#) This is a DIY variable resistor I created as an interface for live performance-- like a stomp 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..... Listed under: [LED Projects](#)
12.  [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](#)
13.  [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](#)
14.  [Cylon Pumpkin Using Arduino](#) 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 ---

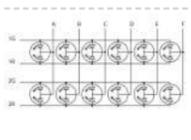
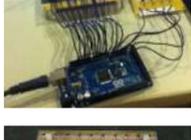
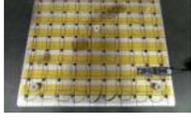
Listed under: [Game – Entertainment Projects](#)

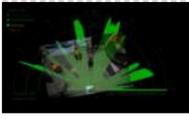
15.  [Build Your Own Programmable LED Matrix](#) QR codes are addicting. Smartphones are smart enough to read them from virtually any angle or orientation. But imagine taking it a step further. I had dreams of a digital LED array that I could program with QR codes, and I wanted it really big!..... Listed under: [LED Projects](#)
16.  [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](#)
17.  [Arduino-Controlled Physics Lab Fan-Cart](#) A "fan cart" is a roughly constant-force device used in introductory physics labs. It consists of a fan (usually a model airplane propeller on a brushed DC motor) mounted on top of a low-friction cart. Students use it to pretend they're learning something about force,..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)
18.  [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](#)
19.  [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](#)
20.  [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](#)
21.  [Improved Fan Cart Using Arduino](#) In an earlier post I described an Arduino-controlled fan cart. The driver I used was an L293D quad half-H chip, because I had one handy and was out of simpler parts at the time. It's always bugged me that I was just controlling speed on..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)
22.  [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](#)
23.  [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](#)
24.  [Remote key-switch operation Using Arduino](#) 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](#)
25.  [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](#)
26.  [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](#)
27.  [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](#)
28.  [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](#)
29.  [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](#)
30.  [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 abilitie

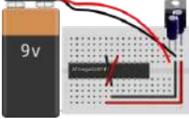
processing to create a dynamic instrument that..... Listed under: [Sound – Audio Projects](#)

31.  [Arduino datalogging accelerometer with  \$\mu\$ -SD storage](#) Thanks to Will Greiman's Fat16 library for the Arduino, I finally got a useful version of this datalogger working! Here's the schematic: And here's the code. The code is highly configurable: it can save raw A/D values or converted values, it allows software-defined gain, it..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#), [Memory – Storage Project Ideas](#), [Metering – Instrument Project Ideas](#)
32.  [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](#)
33.  [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](#)
34.  [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](#)
35.  [RGB LED Color Selector / Picker / Chooser](#) 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](#)
36.  [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](#)
37.  [Make A 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](#)
38.  [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](#)
39.  [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](#)
40.  [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](#)
41.  [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](#)
42.  [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](#)
43.  [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](#)
44.  [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](#)
45. [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](#)

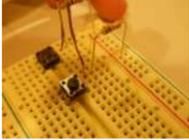
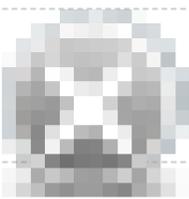


46.  [More Humane Moisture sensor](#) Recently I got a project from Titan industries, who were in search of something as an interactive plant pot which could bridge this gap of emotional communication, in mins this reminded me of brilliant projects done by people where the plant could tweet and..... Listed under: [Sensor – Transducer – Detector Projects](#)
47.  [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](#)
48.  [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](#)
49.  [ATtiny85/45/25 LED dice \(Super Simple and CHEAP!\)](#) 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](#)
50.  [Morse-Code Trainer Using Arduino](#) 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](#)
51.  [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](#)
52.  [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](#)
53.  ["Ayrduino" 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](#)
54.  [Build A Fijibot A Self-Charging Photovore Using Arduino](#) 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](#)
55.  [Network-status indicator Using Arduino](#) 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](#)
56.  [Make A 4x4x4 LED Cube Using 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..... Listed under: [LED Projects](#)
57.  [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](#)
58.  [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](#)
59.  [Build A Full Binary Clock Using Arduino](#) 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](#)
60.  [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](#)
61. [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](#)

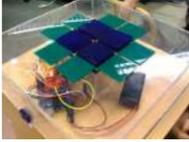
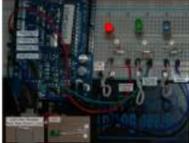
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62.  [Cwik Clock v1.0 – An Arduino Binary Clock](#) Overview This is a guide to building an Arduino-powered clock that uses LEDs to display a 24-hour clock (hours and minutes) as binary digits, an analog meter to display the seconds, a switch to toggle between time-display and time-setting mode, and 2 knobs for setting..... Listed under: [Clock – Timer Projects](#)
63.  [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](#)
64.  [Clusterbot A Small Arduino Powered Robot](#) 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](#)
65.  [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](#)
66.  [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](#)
67.  [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](#)
68.  [SPEAKR \(Singing Portable Electronic Arduino Kite – Remix!\)](#) 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](#)
69.  [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](#)
70.  [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](#)
71.  [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](#)
72.  [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](#)
73.  [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](#)
74.  [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](#)
75.  [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](#)
76.  [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](#)

77.  [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](#)
78.  [Arduino – Using a Sharp IR Sensor for Distance Calculation](#) Well, looks like my sonar sensor (SRF05) is a just a tad inaccurate for precise measurement as I found from my radar screen I made (Arduino Radar Sscreen). So I've got hold of a Sharp GP2Y0A02 series infrared distance sensor. It'll detect and measure anything..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)
79.  [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](#)
80.  [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](#)
81.  [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 an interpret the values from the servo and the sensor. If the readings are to 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](#)
82.  [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](#)
83.  [Vibration Motor Foam Speaker Using Arduino](#) 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](#)
84.  [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](#)
85.  [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/lisence. 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](#)
86.  [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](#)
87.  [Build A Color Changing LED Tree Using Arduino](#) 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](#)
88.  [Arduino – Basic Theremin meets Processing!](#) My last theremin involved a small speaker. Now I've replaced the speaker with my PC, using processing to pick up the values from the SRF05 ultrasound sonar distance sensor and play different notes accordingly – which gives multiple possibilities and far better sounds. So to..... Listed under: [Sound – Audio Project Ideas](#)
89.  [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](#)
90.  [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](#)
91.  [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](#)
92.  [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](#)

93.  [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](#)
94.  [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](#)
95.  [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](#)
96.  [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](#)
97.  [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](#)
98.  [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..... Listed under: [Game – Entertainment Projects, Robotics – Automation Projects](#)
99.  [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](#)
100.  [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](#)
101.  [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](#)
102.  [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](#)
103.  [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](#)
104.  [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](#)
105.  [larryBot – Arduino robot versions 0.1 to 0.5 lessons learned](#) So I've decided to build a robot using Arduino to control the sensors. Here's my progress so far – I am hoping that my mistakes here and over the coming posts will guide people in more detail about what to avoid. Also I won't provide..... Listed under: [Robotics – Automation Project Ideas](#)
106.  [Construct An Algorithmic Noise Machine Using Arduino](#) 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](#)
107.  [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 visualising data that can interface with Arduino either by reading values/ pins or by setting them. Just remember..... Listed under: [Sensor – Transducer – Detector Projects](#)

108.  [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](#)
109.  [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](#)
110.  [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](#)
111.  [Arduino – making a basic drum machine](#) Had a quick look round at turning a piezoelectric speaker in to a sensor that will detect a tap or knock. I also then had a search around for setting the output of a speaker to a different note. Combining this has given me a..... Listed under: [Sound – Audio Project Ideas](#)
112.  [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](#)
113.  [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](#)
114.  [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](#)
115.  [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](#)
116.  [Making a Better Mouse Trap Using Arduino](#) 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](#)
117.  [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](#)
118.  [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](#)
119.  [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](#)
120.  [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](#)
121.  [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](#)
122.  [Make Your Hat With Full Of Stars Using Arduino](#) 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](#)
123.  [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](#)

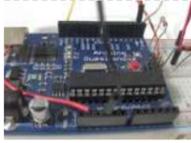
124.  [Arduino Esplora Temperature Sensor](#) This sketch shows you how to read the Esplora's temperature sensor. You can read the temperature sensor in Fahrenheit or Celsius. Circuit Only your Arduino Esplora is needed for this example. Connect the Esplora to your computer with a USB cable and open the Arduino's..... Listed under: [Projects](#), [Temperature Measurement Projects](#)
125.  [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](#)
126.  [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](#)
127.  [Intervalometer for Sony NEX 5n](#) This intervalometer used infrared LED To built intervalometer you need: Arduino Nano (or Arduino-compatibility). 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](#)
128.  [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](#)
129.  [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](#)
130.  [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](#)
131.  [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](#)
132.  [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](#)
133.  [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](#)
134.  [Buzz Wire Alarm Clock Using Arduino](#) 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](#)
135.  [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](#)
136.  [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](#)
137.  [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](#)
138.  [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](#)
139.  [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](#)
140. [Build A Robot Snake Using Arduino](#) 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..... Listed under: [Game – Entertainment Projects](#), [Robotics – Automation Projects](#)



141. [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](#)



142. [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](#)



143. [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](#)



144. [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](#)



145. [How I'm building my bi-copter with Android and Arduino](#) Last year I was fascinated by the "How to build your own Quadcopter" 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](#)



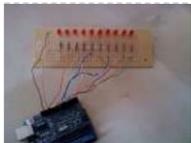
146. [Discreet Data Logger using Arduino](#) There is no better way to hide a covert device than to stick it inside a larger conspicuous device. That said... Essentially, this is a guide for making a data logging system for use with the breathalyzer microphone. To accomplish this, an Arduino and a.....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



147. [A DVD Player Hack](#) This is a description of an open source/open hardware project of a remotely controlled Arduino (Freeduino) based clock/thermometer utilizing 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](#)



148. [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](#)



149. [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](#)



150. [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](#)



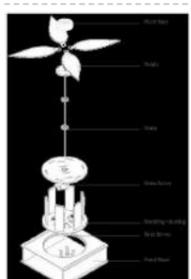
151. [Obstacle avoidance Arduino robot – build your own larryBot](#) So after 5 previous versions that had various flaws, I now have an Arduino robot that actually works and although basic is very cheap – although there a probably a few more flaws so please point them out to me but this is a good.....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



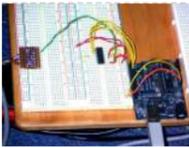
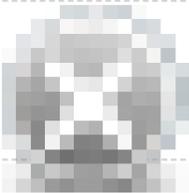
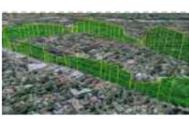
152. [Water Tank Depth Sensor using Arduino](#) Water is a precious resource in many parts of the world, and many people rely on water tanks to supplement their water supply by storing collected rainwater or water pumped from a well or bore. But how do you measure how full a tank is?..... Listed under: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



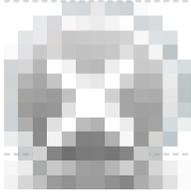
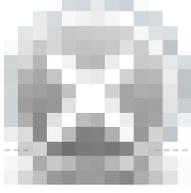
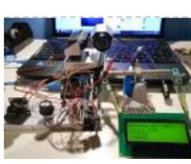
153. [Arduino Dragon Wings](#) Hello World!! I am making this Instructables on how to make arduino controlled dragon wings. XD I planned on wearing these dressed as Smaug to 'The Hobbit Desolation of Smaug' premier but I didn't complete the entire outfit in time, but I will continue working..... Listed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

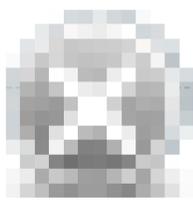


154. [Augmenting Plant Behavior Through Robotics using Arduino](#) The PhytoBot is a semi-intelligent plant which responds to external stimulus (light intensity and light location) and responds to it as a phototropic plant would. Essentially it is designed as a piece of interactive artwork for operation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

155.  [Rabbit Ears on a Cap using Arduino](#) We are students from Singapore Polytechnic. After looking at the famous Necomimi 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](#)
156.  [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](#)
157.  [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](#)
158.  [Control Access of Arduino YUN 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](#)
159.  [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](#)
160.  [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](#)
161.  [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](#)
162.  [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](#)
163.  [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](#)
164.  [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](#)
165.  [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](#)
166.  [Make An LED Clock Using Arduino](#) 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](#)
167.  [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](#)
168.  [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](#)
169.  [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](#)
170. [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](#)



171.  [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](#)
- 
172.  [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](#)
- 
173.  [Brickduino \(2. Parallel connector\)](#) This instructable is part of the "Brickduino" series. [Brickduino 1. LED] - I expect that you did the Brickduino LED before you start with this instructable - Mainly this instructable is the same as the Brickduino LED! So if you want to skip all the..... Listed under: [Arduino LED Project Ideas](#)
- 
174.  [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](#)
- 
175.  [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](#)
- 
176.  [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](#)
- 
177.  [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](#)
- 
178.  [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](#)
- 
179.  [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](#)
- 
180.  [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](#)
- 
181.  [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](#)
- 
182.  [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...](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](#)
- 
183.  [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](#)
- 
184.  [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 seperate things. So i..... Listed under: [Interfacing\(USB – RS232 – I2c –ISP\) Projects](#), [Projects](#), [Video – Camera – Imaging Projects](#)
- 
185. [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 dark 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](#)

186.



[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](#)

187.



[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](#)

188.



[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](#)

189.



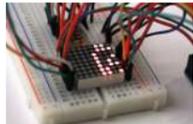
[Hidden Wall Outlet Safe \(w/Arduino Lock\) using arduino](#) Stash your valuables where no one will ever suspect. Wall outlets are perfect for stashing valuables since you have tons of them at home. You must be crazy enough to search every household outlet for a secret stash. Probably, no one would even think of..... Listed under: [Home Automation Projects](#)

190.



[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](#)

191.



[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](#)

192.



[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](#)

193.



[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](#)

194.



[Construct A TV Remote Controlled Car Using Arduino](#) 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! Step 1: Materials The materials for this project are pretty straight forward..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#)

195.



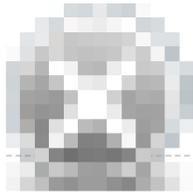
[Arduino Solar Cell Tester](#) When I'm building Solar Shrubs and other solar-powered creations, I often scavenge cells from various off-the-shelf devices such as solar garden or security lights. But these cells are rarely labeled as to their voltage, current, and power output. So it's off to my bread-boarding station. First, I put each cell under..... Listed under: [Battery Projects](#), [Metering – Instrument Projects](#), [Projects](#), [Solar energy projects](#)

196.



[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](#)

197.

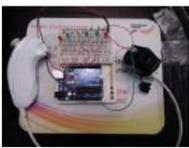
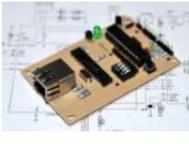
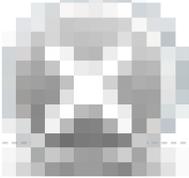


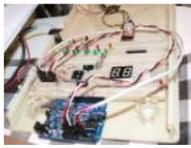
[Attiny serial monitor using arduino walkthrough](#) AIIIIIIIIright dudes and dudets. Here is whats up, we're going to make attiny and arduino bestest of friends. If you have ever worked with capacitive switches you know how much it makes you want to smash your face into a wall...Now imagine you have no..... Listed under: [Development Board – Kits Project Ideas](#), [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)

198.



[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](#)

199.  [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](#)
200.  [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](#)
201.  [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](#)
202.  [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](#)
203.  [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](#)
204.  [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](#)
205.  [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](#)
206.  [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](#)
207.  [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](#)
208.  [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](#)
209.  [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 (pure..... Listed under: [Clock – Timer Projects](#)
210.  [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](#)
211.  [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](#)
212.  [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, I 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](#)
213.  [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](#)
214. [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. The 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: [Home Automation Projects](#), [DIY – Project Ideas](#), [LED Projects](#), [Projects](#)



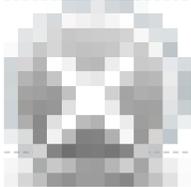
215. [LittleBitty Joe using arduino](#) Say Hello to littleBitty Joe! Joe is my school's mascot! Speak to Joe and watch his eyebrows lift, whiskers vibrate, eyes illuminate, heart spin and hear him ROAR! Not only does his roaring affect work with our project, but it can definitely work with your..... Listed under: [Game – Entertainment Projects](#)



216. [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](#)



217. [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](#)



218. [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](#)



219. [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](#)



220. [Arduilay is An 8 Channel AC Relay Box For Use With Arduino](#) 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](#)



221. [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](#)



222. [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](#)



223. [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](#)



224. [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](http://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](#)



225. [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](#)



226. [Wii Nunchuck Arduino Spirit Level](#) Thanks to: <http://jeonlab.wordpress.com/> Since I have read an article on todbot 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](#)

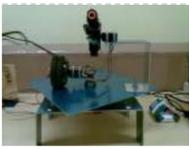
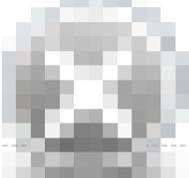
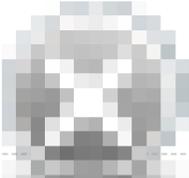


227. [Construct Nama Instrument 1.0 Using Arduino](#) A motion sensing soft-circuit interface. The following instructable will guide you through the construction of your own personalized Nama Instrument. I'd love to hear some feedback. Hope you like it and it serves you somehow! :) Access <http://www.viraseres.com/nama> to download the project's open source..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#)

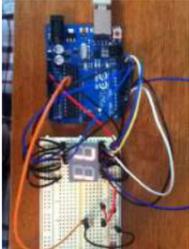


228. [Wex, the One Eyed Watcher using an Arduino](#) Wex detects your location with ultrasonic sensors then follows you with his one flashing eye. His red "heartbeat" can be seen through his mouth. Step 1: Parts needed include: Arduino Two ping ultrasonic sensors Futaba s3103 servo Radio Shack 276-0016 7 color led Radio Shack ..... Listed under: [Projects](#), [Robotics – Automation Projects](#)



229.  [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](#)
230.  [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](#)
231.  [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](#)
232.  [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](#)
233.  [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](#)
234.  [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](#)
235.  [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](#)
236.  [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](#)
237.  [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](#)
238.  [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](#)
239.  [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](#)
240.  [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](#)
241.  [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](#)
242.  [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](#)
243.  [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](#)
244.  [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 incept

vets). The nice thing about..... Listed under: [Game – Entertainment Project Ideas](#), [LCD Projects](#), [Projects](#)

245.  [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](#)
246.  [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](#)
247.  [DIY BioPrinter With Biological Materials Using Arduino](#) 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](#)
248.  [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](#)
249.  [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](#)
250.  [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](#)
251.  [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](#)
252.  [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](#)
253.  [Bubblesteeen 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 Bubblesteeen 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](#)
254.  [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](#)
255.  [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](#)
256.  [How to make a multi-layered acrylic and LED sculpture with variable lighting levels using Arduino](#) Here you can find out how to make you very own n as made for the exhibition [www.laplandscape.co.uk](http://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](#)
257.  [Remote control via GPRS/GSM SMS\(Arduino\)](#) Remote control, especially when this no ethernet or Wifi in the outdoor, has been a very profound things in the past. When I was a child, I always image that I have an equipment which can control all home appliances. Now, this becomes a reality,with..... Listed under: [Home Automation Projects](#), [Phone Projects](#)
258.  [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](#)
259. [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](#)

260.



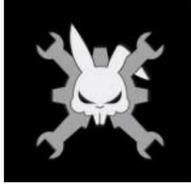
[Arduino GSM shield](#) This is a very low cost and simple Arduino GSM and GPRS shield. We use the module SIMCom SIM900 . It's the cheaper module now available in the market. The module is not simple to mount by an hobbyist, so we use the Breakboard TDGGSM\_900..... Listed under: [Development Board – Kits Projects](#), [Phone Projects](#)

261.



[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](#)

262.



[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](#)

263.



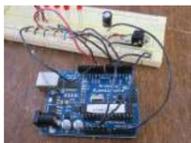
[The Arduino OctoSynth](#) What is the OctoSynth you may ask? The octosynth is a polyphonic synthesizer that is able to produce eight Pulse Width Modulated tones that form together a musical scale. In English terms, it is a 8 key electronic organ that can play more than one..... Listed under: [Projects](#), [Sound – Audio Projects](#)

264.



[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](#)

265.



[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](#)

266.



[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](#)

267.



[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](#)

268.



[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](#)

269.



[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](#)

270.



[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](#)

271.



[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](#)

272.



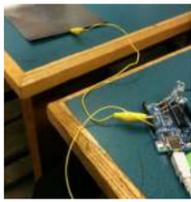
[A solar tracking automatic motorized window blind retrofit using Arduino](#) Buildings account for 20-40% of total energy use in developed countries. Window shades (or blinds) can help to reduce building energy use and improve visual comfort (i.e., reducing glare and increasing daylighting). A recent study showed that occupants are fairly inactive when operating manual roller..... Listed under: [Motor Projects](#)

273.

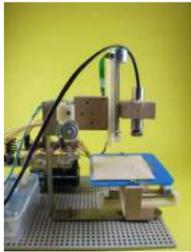


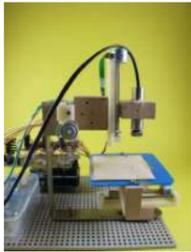
[Flashlight tag using an Arduino board](#) You probably know the game of flashlight-tag. You just run around in the dark on a campsite. You hold your flashlight and try to shine it on one of the other kids, without the other kids shining their lights on you. I wanted to make..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

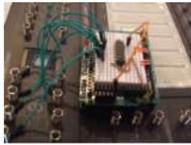
274. [Fish Sensing](#) Overview Once again, my project was motivated by my curiosity to explore interesting and unfamiliar territory. I decided to see if I could make my own capacitive sensor and then use it in a project of some sort. After numerous fiascoes with Arduino and computers, I was..... Listed under: [Sensor – Transducer – Detector Projects](#)

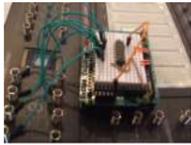


275.  [StopIt! LED Game \(powered by arduino\)](#) This project was inspired by this video from YouTube and the Pendulum Challenge Kit from Makershed.com. Its a simple game consisting of five LED lights and one pushbutton switch. The LEDs flash in a sequence and the player must press the button when the middle..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#)



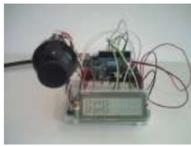
276.  [Arduino 3-axis Mini Lazer Paper-Cutter](#) Updated : 16/3 Add step 4, about using the stage. Updated : 18/3 Add photos (cutting vinyl adhesive sheet) Updated : 19/3 Add step 5, acting as pen plotter Updated : 20/3 Add laser engraving video (Wood) and photo Updated : 22/3 Add 2 drawings..... Listed under: [Home Automation Projects](#)



277.  [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](#)



278.  [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](#)



279.  [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](#)



280.  [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](#)



281.  [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](#)



282.  [Make A Arduino Candygrabber Machine](#) 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](#)



283.  [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](#)



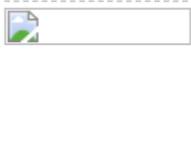
284.  [How to build your very own Time Fountain using Arduino](#) We have all seen the sweet videos on the tube! You know the magical water fountains that seems to "freeze" the water droplets in mid air, or even make them go backwards! I've been fascinated by these "magical" thingamabobs for quite some while now, and a..... Listed under: [Clock – Timer Projects](#), [How To – DIY – Projects](#)

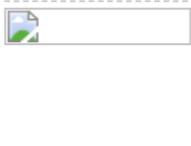


285.  [Arduino MMAE Graduate Robotics](#) This page provides general information to students enrolled in the EML 6808 course, Analysis and Control of Robot Manipulators. Prerequisites for the course are: EML 4312C, EML 5271, or C.I. Kinematics and dynamics of multibody systems. The topics to be covered include: basic components of..... Listed under: [Robotics – Automation Projects](#)



286.  [Control your motors with L293D and Arduino](#) After long research and trial and error, I have come 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](#)



287.  [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](#)

288. [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](#)



289.  [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](#)



290. [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](#)



291. [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](#)



292. [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](#)



293. [Make An Social Alarm Clock Using Arduino](#) 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](#)



294. [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](#)



295. [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](#)



296. [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](#)



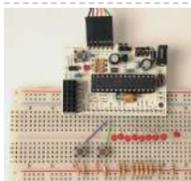
297. [Controlling an LED using a switch](#) Concepts So you know what a switch is, but what can you do with it? One of the uses of a switch is to tell the controller to activate/deactivate different components. In this case we are going to use the switch to turn on and..... Listed under: [LED Projects](#)



298. [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](#)



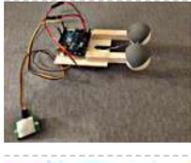
299. [Rainbow Mega Pong Clock using Arduino](#) This is my take on the classic Pong clock with an RGB back light that changes every time the date is displayed. A big thanks to mnick1234567 and his <http://www.instructables.com/id/Pong-Word-Clock/> I did want the light to change randomly through the day but it made a mess of..... Listed under: [Clock – Timer Projects](#), [Projects](#)

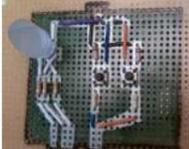
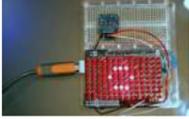
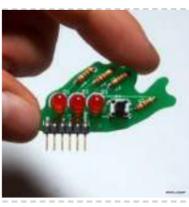


300. [Artist's Machine](#) Tutorial 1 Part One Materials needed for tutorial Working BBB, RBBB, Arduino, or other Arduino compatible (BBB shown in photos) Solderless breadboard 22 gauge solid wire for use with breadboard 3 6mm momentary switches 8 LED's, any color 8 1k resistors, (470 ohm or 220..... Listed under: [Video – Camera – Imaging Projects](#)

301. [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](#)

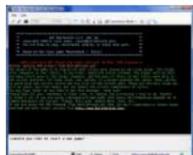
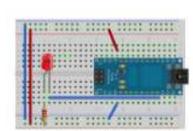


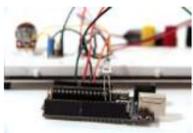
302.  [NESBot: Arduino Powered Robot beating Super Mario Bros for the NES](#) This guide will take you through the steps to build an NES playing robot You will need: An Arduino Duemilanove (other boards will probably work, but you will have to adjust the steps for your device) Working NES Console Super Mario Bros. (Note: this must..... Listed under: [Game – Entertainment Projects](#), [Projects](#), [Robotics – Automation Projects](#)
303.  [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](#)
304.  [Tweeting Cat Door using an Arduino](#) Note: to see everything on one page, please go to: [www.tweetingcatdoor.com](http://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](#)
305.  [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](#)
306.  [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](#)
307.  [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](#)
308.  [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](#)
309.  [Vacuum form an Arduino/Electronics Enclosure](#) 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](http://www.techshop.ws) Step 1: Bill of materials Material to vacuum form..... Listed under: [How To – DIY – Projects](#), [Projects](#)
310.  [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](#)
311.  [\[Arduino\] 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](#)
312.  [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](#)
313.  [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](#)
314.  [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](#)
315.  [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](#)

316.  [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](#)
317.  [Bedtime Board using LilyPad Arduino](#) For a class on youth and technology, we were assigned to a project using the LilyPad Arduino, a microcontroller board for making e-textiles. I decided to make a hanging board with a starscape that would light up and play a lullaby. I used cardboard, black cotton..... Listed under: [Game – Entertainment Project Ideas](#)
318.  [Singing Olaf Bag \(Frozen\) Using Arduino](#) 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 a..... Listed under: [Game – Entertainment Projects](#), [Sound – Audio Projects](#)
319.  [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](#)
320.  [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](#)
321.  [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](#)
322.  [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](#)
323.  [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](#)
324.  [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](#)
325.  [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](#)
326.  [High Five Camera Using Arduino](#) 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](#)
327.  [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](#)
328.  [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 Math's \* Learn..... Listed under: [CNC Machines Projects](#), [LED Projects](#), [Projects](#)
329.  [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](#)
330.  [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](#)
331.  [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](#)
332. [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](#),

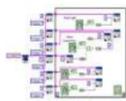
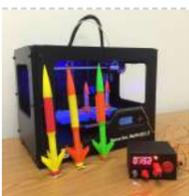
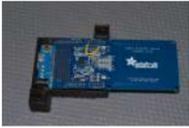
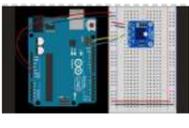


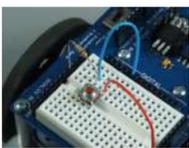
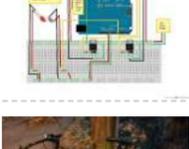
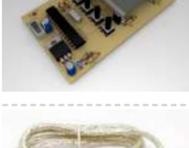
[LCD Projects, Projects](#)

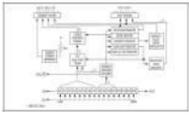
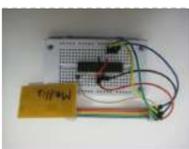
333.  [Home Alert: Arduino + Cloud Messaging On A Large Display](#) In the age of mobile phones, you would expect that people would be responsive to your call 24/7. Or... not. Once my wife gets home, the phone stays buried in her hand bag, or its battery is flat. We don't have a land line. Calling..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#)
334.  [Make A 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](#)
335.  [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](#)
336.  [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](#)
337.  [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](#)
338.  [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](#)
339.  [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](#)
340.  [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](#)
341.  [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](#)
342.  [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](#)
343.  [Universal Remote Laser Tag Using Arduino](#) 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](#)
344.  [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](#)
345.  [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](#)
346.  [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](#)
347.  [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](#)
348.  [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](#)
349. [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:

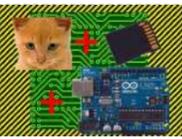
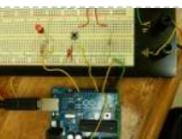
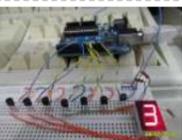


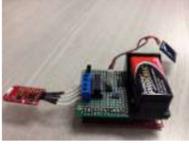
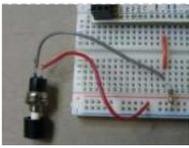
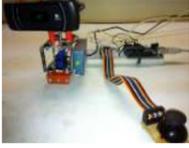
### [Development Board – Kits Projects](#)

350.  [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](#)
351.  [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](#)
352.  [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](#)
353.  [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](#)
354.  [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](#)
355.  [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](#)
356.  [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](#)
357.  [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](#)
358.  [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](#)
359.  [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](#)
360.  [Arduino 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](#)
361.  [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](#)
362.  [I2C Communication With An Infrared Temperature Sensor](#) Introduction Contents [hide] 1 Introduction 2 What You'll Need to Know 3 Things You'll Need 4 Connect the temperature sensor 5 How the Temperature Sensor Works 6 Install the External Libraries 7 Program the Microcontroller 8 Conclusion In this lab, you'll see synchronous serial communication in..... Listed under: [Internet – Ethernet – LAN Project Ideas](#), [Sensor – Transducer – Detector Project Ideas](#), [Temperature Measurement Project Ideas](#)
363.  [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](#)

364.  [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](#)
365.  [ArduinoISP 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](#)
366.  [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](#)
367.  [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](#)
368.  [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](#)
369.  [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](#)
370.  [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](#)
371.  [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](#)
372.  [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](#)
373.  [Sugarcube MIDI Controller Using Arduino](#) 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](#)
374.  [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](#)
375.  [Build Your Own Sourcemeter Using Arduino](#) 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](#)
376.  [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](#)
377.  [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](#)
378.  [ESM – External Serial Monitor Using Arduino](#) 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](#)
379.  [Arduino USB LOG](#) 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](#)

380.  [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](#)
381.  [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](#)
382.  [Digital Clock Design Using Arduino](#) 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](#)
383.  [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](#)
384.  [Sound Reactive LED Strip Using Arduino](#) 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](#)
385.  [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](#)
386.  [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](#)
387.  [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](#)
388.  [Make a Desktop Tamagotchi Using Arduino](#) 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](#)
389.  [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](#)
390.  [Microcontrollers: The Basics](#) Different kinds of computers are designed for different purposes. The computer at the heart of your laptop is optimized for different pupposes 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](#)
391.  [Raspberry Pirate Radio](#) This simple hack turns your Raspberry Pi into a powerful FM transmitter! It has enough range to cover your home, DIY drive-in movie, a high school ball game, or even a bike parade (depending on the stragglers). PiFM software not only boldly enhances the capability of..... Listed under: [Radio Project Ideas](#)
392.  [Arduino Lilypad Slipper Automatic Foot Massager](#) I made a little automatic slipper foot massager with the Lilypad Arduino and some of the Lilypad Vibe Boards for the actual massager. The sensor it uses is a Lilypad 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](#)
393.  [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](#)
394.  [LEGO + Arduino = Brickduino \(1. the LED\)](#) I know LEGO has the Mindstorms-set that probably is great, but wouldn't it be even better (and cheaper) to hack your regular bricks into your own micro controller controlled LEGO? Well I think so! I had this idea for a long time, but to many..... Listed under: [Arduino LED Project Ideas](#)
395.  [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](#)

396.  [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](#)
397.  [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](#)
398.  [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](#)
399.  [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 measue time-varying signals..... Listed under: [LCD Projects](#), [Medical – Health based Projects](#)
400.  [Talking Darth Vader Binary Clock](#) In this instructable I am going to show you, how to paint a black and white image of Darth Vader and bring it to life by adding a binary clock and making it talk. If you are not a big Star Wars fan, don't worry..... Listed under: [Clock – Timer Project Ideas](#)
401.  [Robot shield for Arduino Board](#) The idea behind this post is to bring together some robot designs and trasform 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](#)
402.  [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](#)
403.  [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](#)
404.  [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](#)
405.  [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](#)
406.  [Charliexplixed 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](#)
407.  [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](#)
408.  [Arduino Cat Detector SD Card Logger](#) I used: an Arduino Uno a Parallax PIR Motion Sensor and a Seeed 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](#)
409.  [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](#)
410.  [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 otivated 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](#)
411.  [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](#)

412.  [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](#)
413.  [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](#)
414.  [Solar Module Using Either Arduino UNO or TI Launchpad](#) 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](#)
415.  [Arduino-Powered 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](#)
416.  [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](#)
417.  [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](#)
418.  [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](#)
419.  [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](#)
420.  [Arduino-Controlled Chemical Foam Spewing Pumpkin](#) If the thought of dozens of trick-or-treaters in gross-out costumes knocking down your door makes you want to spew, have we got the pumpkin for you! Every time the Arduino-Controlled Chemical Foam Spewing Pumpkin encounters a trick-or-treater at your doorstep, it spews burning chemical foam..... Listed under: [Game – Entertainment Project Ideas](#)
421.  [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](#)
422.  [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](#)
423.  [Interactive Magic Mirror with Candy Dispenser](#) For Halloween 2012 I created an interactive Magic Mirror. The Magic Mirror has a sonar (PING))) sensor that detects when kids are close. Then the mirror says a few random phrases and automatically drops candy to the bucket. I repurposed my Automatic Candy Dispenser from..... Listed under: [Game – Entertainment Project Ideas](#)
424.  [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](#)
425.  [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](#)
426. [Self-Balancing Robot Using Arduino](#) 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](#)



427. [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](#)



428. [Artemis & Apollo: Dancing with Arduino and light detection](#) According to Ancient Greek mythology, Artemis and Apollo were immortal twins born ages ago on a rocky island in the Aegean Sea. Artemis, her hunting bow poised and fleet feet padding the forest floor, reigned as Goddess of the Moon. Her twin brother, Apollo, strummed..... Listed under: [Game – Entertainment Project Ideas](#)



429. [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](#)



430. [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](#)



431. [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](#)



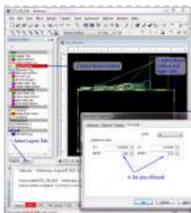
432. [Arduino powered Lucky Cat as physical Webcounter](#) Everybody wants to know how many pageviews your own website has. But see what's happening you need some analytics code and stuff like this. I wanted to be connected to the world when I'm sitting on my couch so I connected my Lucky Cat to..... Listed under: [Game – Entertainment Project Ideas](#)



433. [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](#)



434. [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](#)



435. [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](#)



436. [IMP-ERSONATOR: Electric Imp + Arduino + Wave Shield = Remote Sound File Player](#) This Instructable will demonstrate how to make a remotely activated sound file player. It uses an Electric Imp, an Adafruit Wave shield and an Arduino Uno The Electric Imp enables you to quickly connect devices (including arduinos) to the internet through your Wifi network. The..... Listed under: [Sound – Audio Project Ideas](#)



437. [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](#)

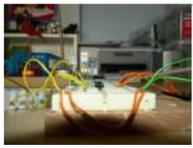


438. [Intuitive Vibrotactile Feedback Educational Feedback Devices](#) The goal of the project is to come up with an affordable yet generic vibrotactile feedback device to be used for educational purposes. A chemistry learning environment is developed to demonstrate a specific application of our device, in which users can manipulate ions and feel..... Listed under: [Internet – Ethernet – LAN Projects](#)



439. [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](#)

440. [How To Build A 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..... Listed under: [Projects](#), [Projects](#)



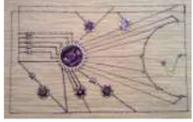
441. [Combination Circuit for Digital and Analog](#) Goals Understand the Analog Signals and use your knowledge to program your Arduino and let it play music Get known of the Seven-segment display and use your Arduino Board together with the Shift Register to control the number. In the Second Week you will be..... Listed under: [CNC Machines Projects](#)



442. [Animatronic Tentacles with Arduino](#) \*\*\*Disclaimer\*\*\*This instructable is documentation for a work in progress. Although the project is not yet complete, it has reached a place where I believe it can begin to be beneficial to other makers. The concept for this project was spawned when a friend suggested I..... Listed under: [Game – Entertainment Project Ideas](#)



443. [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](#)



444. [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](#)



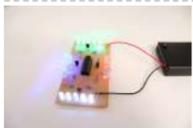
445. [Highly maneuverable search and rescue robot](#) Finalized Prototype Shown below is the finalized prototype. The purpose of the prototype was to demonstrate the feasibility of a small, highly maneuverable search and rescue robot. As such, the completed prototype was successful. Capabilities include a ground speed of 10 inches per second, battery..... Listed under: [Medical – Health based Projects](#), [Robotics – Automation Projects](#)



446. [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](#)



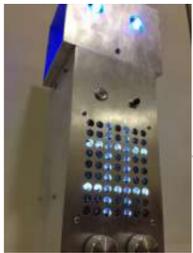
447. [DIY Super Bright LED Skate Lights](#) You might remember my first set of lights that I put on my dad's skates. Well those weren't bright enough and they were a lot of work because I didn't know how to make PCBs. In this i'ble I'll cover how to make your own..... Listed under: [LED Projects](#)



448. [Interactive LED box Using Arduino](#) 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](#)



449. [RoboDolly](#) The Birth of RoboDolly The conception of the RoboDolly can be traced back to my senior year of high school. This aluminum ornament evolved from housing a few flashing lights to displaying a fully handmade LED matrix. The final product was awarded to my robotics..... Listed under: [Robotics – Automation Project Ideas](#)



450. [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](#)



451. [Plush toy, singing with Mommy's voice](#) This Instructables is about upgrading a plush toy to give it the ability to sing when baby presses its belly. Most importantly : it will not play a stupid pre-recorded music, but actually sing mommy's songs, with mommy's voice ! This project started with two..... Listed under: [Game – Entertainment Project Ideas](#), [Sound – Audio Project Ideas](#)



452. [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](#)

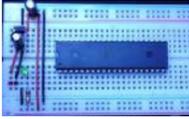


453. [BabyTracker](#) I found a pressure sensor matrix that we could adapt to a pressure sensor patch on the stomach of the women in labor on this webpage (see below). It gives instructions how to build a pressure sensor by using two pieces of cloth and conductive..... Listed under: [Medical – Health based Projects](#)



454. [Mechanical Bull for Dolls](#) This mechanical bull was created as a weekend hobby. The creation process was simple and did not last more than two hours. The materials I already had at home. For those who wish to make an equal, will be a good opportunity to recycle materials..... Listed under: [Game – Entertainment Project Ideas](#)



455.  [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](#)
456.  [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](#)
457.  [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](#)
458.  [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](#)
459.  [Open source multi-channel EEG/ECG/EMG](#) Introduction Electrodes on the skin can be used to measure muscle (electromyography, EMG) brain (electroencephalography, EEG) and heart (electrocardiogram, ECG/EKG) activity. These electrophysiological measures are popular for clinical, research and hobbyist applications (such as brain computer interfaces). Most commercial systems are "medical grade" – these..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)
460.  [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](#)
461.  [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](#)
462.  [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](#)
463.  [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](#)
464.  [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](#)
465.  [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](#)
466.  [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](#)
467.  [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](#)
468.  [X-Track – Wireless music visualization and tracker](#) X-Track is a prototype wireless device which connects you to the music, by providing entertainment with its bright beat-synched LEDs and tracking your moves so that you can later learn how much you enjoyed the night, and which parts were especially moving you. Remote wireless..... Listed under: [Sound – Audio Project Ideas](#)
469.  [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](#)
470. [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](#)

471.



[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](#)

472.



[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](#)

473.



[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](#)

474.



[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](#)

475.



[Passive Sensors – Detecting Light and Motion](#) Equipment: Arduino UNO microcomputer, PC with Arduino IDE installed, and a USB cable. CdS PhotoSensitive Resistor(s), 10K Ohm Resistor, and Parallax PIR Motion Sensor Passive sensors detect some physical phenomena and provide some amount of information about it that can be used for action..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)

476.



[Machine Design Using Arduino](#) 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](#)

477.



[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](#)

478.



[Build Simon Game Using Arduino](#) 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](#)

479.



[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](#)

480.



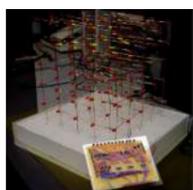
[ANDROID BASED ROBOTICS](#) While the field of robotics is continuously expanding at a remarkable rate and better performing robots are created every year, robotics still remains out of reach for many students and researchers. The main reasons for this difficulty are the high complexity of the hardware and..... Listed under: [Robotics – Automation Projects](#)

481.



[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](#)

482.



[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](#)

483.



[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](#)

484. [Creating A SoundBox Using Arduino](#) Ideas and Sketches Squat Coach – Detects the depth of your squats and assesses your form. Flex sensor is positioned +^ run up the back of knee joint Etch-A-Sketch – Arduino version of Etch-A-Sketch game. Users control stylus with 2 rotational potentiometers Adaptive Ligh –..... Listed under: [Sound – Audio Projects](#)



485. [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](#)



486. [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](#)



487. [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](#)



488. [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](#)



489. [Password access with arduino](#) ~~ The complete kit for this tutorial is now for sale at [www.razvantech.com](http://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](#)



490. [Make Your Pet Dishes Tweet Using Arduino](#) 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](#)



491. [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](#)



492. [Alarming Tweet Using Arduino](#) 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 Alarming Tweet you can enable it..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)



493. [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](#)



494. [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](#)



495. [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](#)



496. [Make A Electric Turtle Robot Using Arduino](#) 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](#)



497. [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](#)



498. [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](#)

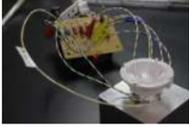
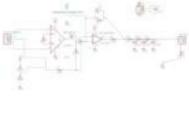
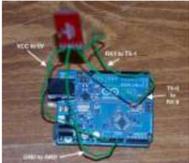
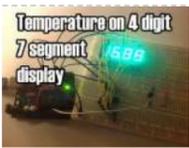


499. [Make A Giant Leaf Planetarium Using Arduino](#) Have you ever wanted a mini-planetarium for your room? Well now you can! This instructable will help you create a fairly portable planetarium leaf that you can put over a bed, a couch, or anywhere else in your house. All you need is an IKEA..... Listed under: [Game – Entertainment Projects](#)

500.  [Arduino ArduRoller balance bot](#) Caveat Emptor: (I don't want to put you off building one but I also don't want you to be disappointed.) This Instructable is now 2 years old. Many of the parts it uses are out of date (there's no drop-in replacement for the now-discontinued gyro,..... Listed under: [Robotics – Automation Project Ideas](#)
501.  [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](#)
502.  [The Touch module – a robotic dog toy](#) The idea was to invent an Arduino-based, robotic toy that my dog could interact and play with. One that could record scores, automatically deliver treats, and grow more advanced as the dog learns to play with it. I wanted to find a task to test..... Listed under: [Robotics – Automation Project Ideas](#)
503.  [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](#)
504.  [Turn your Arduino Uno into an USB-HID-Midi device](#) While building an Arduino Uno based Midi-Controller for Ableton Live, I came across the HIDUINO project ( <http://code.google.com/p/hiduino/> ). 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](#)
505.  [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](#)
506.  [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](#)
507.  [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](#)
508.  [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](#)
509.  [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](#)
510.  [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](#)
511.  [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](#)
512.  [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](#)
513.  [Diy Xbox wireless controller adapter for Pc](#) This instructable will go over the steps to connect a RF module from an RROD 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](#)
514.  [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](#)
515. [DIY Telepresence Documentation](#) This is the documentation page for the Spring 2012 DIY Telepresence project. Here you will find schematics, software, an 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

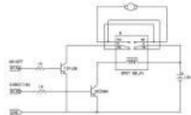


under: [Robotics – Automation Projects](#)

516.  [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](#)
517.  [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](#)
518.  [The Wondrous Weather Cube Using Arduino](#) 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](#)
519.  [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](#)
520.  [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](#)
521.  [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](#)
522.  [DC Motors Relays Using Arduino](#) 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).  $V = \text{voltage measured in volts} - \dots$  Listed under: [Motor Projects](#)
523.  [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](#)
524.  [Making art Interactive Using Arduino](#) 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](#)
525.  [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](#)
526.  [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](#)
527.  [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](#)
528.  [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](#)
529.  [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](#)
530. [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

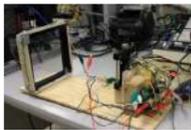


under: [LCD Projects](#)

531.  [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](#)
532.  [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](#)
533.  [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](#)
534.  [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](#)
535.  [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](#)
536.  [Finalized Prototype Using Arduino](#) 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](#)
537.  [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](#)
538.  [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](#)
539.  [The DIY Photobooth with Lighting Control using Arduino](#) This is a tutorial on how to build your own Photobooth. My friend had a wedding coming up and was in need of a Photobooth. Photobooth rentals go anywhere from \$500 - \$1500 so we decided to do our own & hence another DIY Photobooth..... Listed under: [Arduino Video – Camera – Imaging Project Ideas](#), [Ideas](#)
540.  [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](#)
541.  [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](#)
542.  [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](#)
543.  [Bidirectional Motor Control Using Arduino](#) 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](#)
544.  [Fab Lab Barcelona SuperNode](#) 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](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 Fab..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
545. [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](#)



546. [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](#)



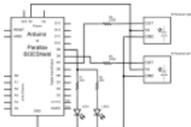
547. [Arduino Scouting Robot](#) Summer Project: Arduino Scouting Robot [video id="P6PVLhjQ5FY" type="youtube"] Arduino Scouting Robot Part 1 \* 12,9,5 volt power supply recharge it with a 12-volt charger keep power switch on to charge \* 2 DC motors operate at 7.2V with a maximum current draw of 3 amps..... Listed under: [Projects, Robotics – Automation Projects](#)



548. [Rubik's Cube Solver using arduino](#) This robot that can solve a Rubik's cube using Arduino. I learned how to solve a Rubik's 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](#)



549. [Connecting an IR Sensor Using Arduino](#) 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](#)



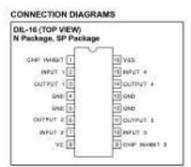
550. [Learn how to use 7-Segment LED Display using Arduino](#) 7-Segment LED Display is a very useful component, but also a very confusing and difficult piece to use for beginners. It won't be difficult once you get it working for the first time. This is what you will get at the end of the tutorial (part..... Listed under: [LED Projects, Projects](#)



551. [Bass Master 3000 Carnival Game using arduino](#) The Bass Master 3000 is a game that I built for a work carnival along with a small and very talented team of co-workers. I've seen this type of game on the net, but I wanted to kick it up a notch with some Arduino..... Listed under: [Game – Entertainment Projects](#)



552. [L293 Motor Driver and H-Bridges](#) The most common method to drive DC motors in two directions under control of a computer is with an H-bridge motor driver. H-bridges can be built from scratch with bi-polar junction transistors (BJT) or with field effect transistors (FET), or can be purchased as an..... Listed under: [Motor Projects](#)



553. [How to connect a servo to the Arduino](#) Servo Cable The continuous rotation servos that come with the BOE Shield-Bot have a 3-wire cable for connecting it to the power and controller. The black wire is the ground, the red wire is the power (positive) and the white wire (sometimes yellow, depending on..... Listed under: [Motor Projects](#)



554. [Conversational Gloves using arduino](#) This is what came out of my attempt at combining some of my favorite tools and themes...Grasshopper, 3D printing, kinetic motion, and linguistics. I put these gloves on my friends, asked them to tell me a story, and used Grasshopper to record the data from..... Listed under: [Radio Projects](#)



555. [Pneumatic Inverted Pendulum](#) Construction Mechanical structure Compressed air comes from air compressor and goes in the proportional valve. Coming out from the proportional valve, there are two branches of air flow (one is compressor air, the other one is exhausted air) which connect to the air cylinder (pneumatic..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)



556. [Make your own TV ambilight using Arduino](#) This is a very easy project. Here is the result I won't go into too much detail how each part works, because I have written some information on my blog. But you should be able to make it work with the information given on this..... Listed under: [LED Projects](#)



557. [Arduino Step Sequencer Drum Machine](#) Overview As avid audiophiles, we wanted to apply our newly acquired knowledge of microcontrollers to build a fun consumer electronic device. Our project is a step sequencer drum machine. The user is able to program a 16-step percussion pattern using one of a wide range..... Listed under: [Sound – Audio Projects](#)



558. [Build your own 4x4x4 RGB LED Cube using arduino](#) LED Cubes are awesome. The first one I created was a 8x8x8 blue led cube. It still works like a charm. But being able to display every colour in the spectrum is much more spectacular. Let's start with a small and simple 4x4x4 RGB LED..... Listed under: [LED Projects](#)



559. [Programming an ATTiny13A using Arduino & servo interpreter](#) So there I was, browsing eBay, looking for some cheap deals on Atmel chips when i came across a pair of ATTiny13 chips for £2.50. I just had to have them! After all, how hard can it be? I needed a small chip to read..... Listed under: [Arduino Programmer Projects, Interfacing\(USB – RS232 – I2c -ISP\) Projects, Motor Projects, Projects](#)



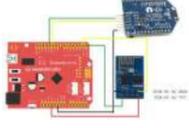
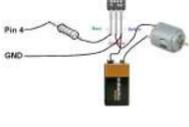
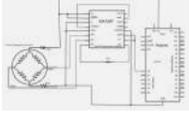
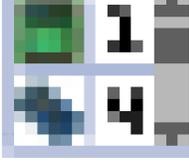
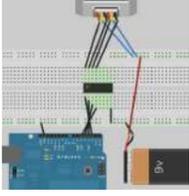
560. [Retablillo de las Maravillas v1.0](#) 4./ Interactivity & electronics 4.1/ Switches / characters 4.2/ Screen / interface 4.3/ Motor controller 4.4/ I/O controller & interface [4./ electronics] [4.1/ switches / characters] The characters on top of the moving platform function, as interfaces, actually as on-off switches. While standing in its..... Listed under: [Robotics – Automation Projects](#)



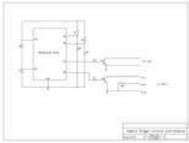
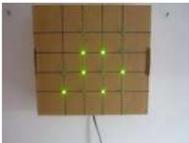
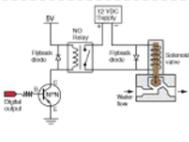
561. [How to control a Servo using Arduino](#) In this one, servo is programmed to be controlled by two buttons, one turns servo to the left and the other one turns it to the right. When the servo is turning, corresponding LED will be switched on to indicate the operation. Result: Beau



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

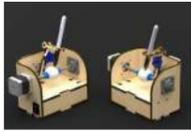
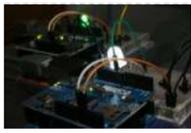
562.  [Desktop Fist Bumper using arduino](#) This simple device sits on your desk at work, ready to give you fist bumps throughout the day as you need them. A 3D printed "fist" is moved by a servo attached to a rack and pinion mechanism. An ultrasonic range finder detects when you..... Listed under: [Battery Projects](#)
563.  [Arduino Basic Wifi Project using ESP8266 wifi module](#) Overview ESP8266 is a highly integrated chip designed for the needs of a new connected world. It offers a complete and self-contained Wi-Fi networking solution, allowing it to either host the application or to offload all Wi-Fi networking functions from another application processor. ESP8266..... Listed under: [Internet – Ethernet – LAN Projects](#)
564.  [\\$1.50 Arduino TV Annoyer](#) Hey Arduino fans! Here is an 'ible for making a device that turns TVs on when you want them off, and off then you want them on! If you hide it in something inconspicuous, it would make a great April Fools joke or gag gift..... Listed under: [Home Automation Projects](#), [Projects](#)
565.  [Katrina And Maya](#) bOunce is a haptics-based learning game system that teaches the concepts behind wave dynamics, and in particular, resonance. The bOunce device (an adaptation of the Haptic Paddle) allows a user to "bounce" a ball in a virtual environment. By feeling the haptic force feedback from..... Listed under: [Robotics – Automation Projects](#)
566.  [Stereo Audio with an Arduino](#) Recently I've been posting a lot of projects that use an 8 bit resistor ladder digital to analog converter(DAC) and an Arduino to make sound. (see the Arduino vocal effects box, the Arduino drum sampler, and my audio output tutorial). The technique I've been using to make these DACs is..... Listed under: [Projects](#), [Sound – Audio Projects](#)
567.  [Arduino All-In-One Remote](#) Now you can have all the remotes of your house in a device that fits in your hand with Arduino, never fight for who has the TV remote again! To make it you will need: Arduino (I used a cheap copy of the arduino UNO)..... Listed under: [Robotics – Automation Projects](#)
568.  [Just Veggin with an Arduino Beetbox](#) Bring Touch Control to the Arduino. Use interesting touch sensors like Carrots or Beets to make a "Beetbox". In this instructable you will learn: \* How to use the Cap Sense library to make Arduino responsive to touch \* How adding a Wave Shield (and..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)
569.  [MOTOR SWITCH LED Using Arduino](#) Here is how to connect a motor, a switch and an LED to your Arduino and how to do some checking to make sure that everything works. The strategy is to get the circuit going in stages, testing each part as you go. Once everything..... Listed under: [LED Projects](#), [Motor Projects](#)
570.  [Arduino Controlled Lighthouse](#) Overview: I've often thought that a lighthouse would make a great project for an Arduino, and so I decided to give it a try using one of the local lighthouses here in Erie, Pennsylvania as inspiration. I chose the North Pierhead Lighthouse that guards the..... Listed under: [LED Projects](#)
571.  [Working with a Load Cell and an Arduino](#) We built a system that uses eight air-clamping cylinders (McMaster-Carr 62185K64) to push down on a piece of glass to seal it to a sidewall. A number of times, the glass has cracked. So, this project is an attempt to come up with an inexpensive..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)
572.  [LittleGoal: World Cup Match Notifier using Arduino](#) [ This Instructable was made at the Taipei Hackerspace littleBits Instructables Build Night. ] Can't watch the World Cup football games, but want to know when important game events (ie. goals) happen? Then littleGoal is for you! The littleGoal setup will monitor the game's progress,..... Listed under: [Game – Entertainment Projects](#)
573.  [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](#)
574.  [Stepper Motors](#) Stepper motors are not smooth - they move in "steps". Different motors have a different number of steps to make one complete rotation. You use software to step the motor forward or backward at different speeds. There are two kinds of stepper motor bipolar and..... Listed under: [Motor Projects](#)
575.  [DIY FPV RC Tank V2 \[2km RANGE upgrade!\] using Arduino](#) Lets build An FPV tank that could be controlled within 2 kilometers! With the help of my best friend ASCAS I was able to borrow his old parts for this updated version. Ok So Roverbot version 2 is a highly educational Arduino based ATV-drone. It's..... Listed under: [Game – Entertainment Projects](#)
576.  [Sweep](#) Sweeps the shaft of a RC servo motor back and forth across 180 degrees. This example makes use of the Arduino servo library. Hardware Required Arduino Board (1) Servo Motor hook-up wire Circuit Servo motors have three wires: power, ground, and signal. The power wire..... Listed under: [How To – DIY – Projects](#), [Motor Projects](#)
577.  [DIY GPS Tracked Bike Lock using Arduino](#) Having just purchased a half decent bicycle, and living in a city with a bike theft rate almost as high as New York, I wanted to have some peace of mind that if a thief with an angle grinder were to cut through my U-lock..... Listed under: [Game – Entertainment Projects](#)

[Projects](#), [GPS Based Projects](#), [Security – Safety Projects](#)

578.  [Critter Twitter Trap using Arduino](#) Havahart traps are really nice if you have pests to rid your home of but you don't feel the need to do this through means of killing the animal. The problem we are faced with is constant monitoring of the trap. If you forget to..... Listed under: [Internet – Ethernet – LAN Projects](#)
579.  [Capture the image of a falling object using Arduino](#) 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](#)
580.  [LED Binary Clock using an Arduino](#) A Binary Clock! I was recently looking at some binary clocks and I felt like Why not? I have everything to make one and I don't have a clock in my room. So I decided to build one and here it is. Hope you Like..... Listed under: [Clock – Timer Projects](#), [Projects](#)
581.  [Wiring of the Solenoid Valves](#) Overview of Wiring for the Salinity Sensor Other pages describing fish tank wiring: Connect electrical power to the pump and the breadboard Connect the salinity sensor to the breadboard and Arduino Connect the solenoids to the cascade control circuit (this page) Return to the main..... Listed under: [Interfacing\(USB – RS232 – I2c –ISP\) Projects](#)
582.  [Cheap wireless transmission between two Arduinos with Infrared](#) Hi all, For a project, I was looking for a cheap solution to send data from an Arduino to an other one. The serial port was already taken, and my transmission (unidirectional) needed to be wireless. My researches has brought me to discover these kinds..... Listed under: [Internet – Ethernet – LAN Projects](#)
583.  [Bug-Catching Spider in Web using Arduino Part 2](#) This project is a collaboration between idesigner4 and bhasudha(me), students in the Fall 2012 course Things That Think (CSCI 7000) at The University of Colorado - Boulder. The story of our bug-catching spider automaton goes like this: A giant evil spider resides in a big..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#), [Security – Safety Projects](#)
584.  [Hack a TowerPro Micro Servo to Spin 360 / Continuous Rotation](#) Hey guys! Since I've got my servos, I've had two that I set aside for hacking. So, coming to my favorite website for help, I was sorely disappointed when I couldn't seem to find any instructables on how to mod a micro servo. After viewing..... Listed under: [Motor Projects](#)
585.  [Arduino R/C Lawnmower](#) What this is: This instructable will show you how to make your Arduino into an R/C interface that you can use for just about anything requiring remote control. I will also show you how I built an R/C lawnmower using my Arduino, a cheap R/C transmitter and..... Listed under: [Home Automation Projects](#), [Projects](#)
586.  [RGB LED Tutorial \(using an Arduino\)\(RGLB\) using arduino](#) LEDs are great. But with any project there comes a point where flashing is simply not enough. For these cases an RGB (Red, Green, Blue) LED is the answer. With an RGB LED you'll be able to produce any colour glow your heart desires. At..... Listed under: [LED Projects](#)
587.  [Darkness Map Data Collection Device](#) The Darkness Map encompasses both data collection and visualization of nighttime light levels. You can add to the map by downloading the app for iPhone or Android, but you can also contribute data by creating your own data collection device. This tutorial will cover how..... Listed under: [Sensor – Transducer – Detector Projects](#)
588.  [Say Hello with My Roommate Mouse with Arduino](#) I live alone in a small house in Shenzhen, and i really I love this graceful and dynamic city. As an software engineer, I have no girlfriend yet, and usually nobody visit my room, I really love this because I do not need to clear..... Listed under: [Game – Entertainment Project Ideas](#)
589.  [Arduino-based line follower robot using Pololu QTR-8RC line sensor](#) UPDATE FEB 2012: This guide is featured on Adafruit's blog <http://www.adafruit.com/blog/2012/02/14/arduino-based-line-follower-robot/> This is Faz3a II, my first line-following robot, which I also hope to use for maze-solving. I used the Arduino Uno, Adafruit motor shield, Pololu's QTR-8RC line sensors and motors. You can build a..... Listed under: [Projects](#), [Robotics – Automation Projects](#), [Sensor – Transducer – Detector Projects](#)
590.  [RGB LED Rainbow Fader using an Arduino](#) Introducing the RainBoard: A simple RGB LED Rainbow fader using an Arduino Uno and a few simple components. Believe it or not, we will control 45-channels of RGB LEDs at 32 brightness levels using only 3 digital pins from the Arduino! How is this possible..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)
591.  [Window Painting Robot \(arduino, processing, accelerometer\)](#) The idea for this project came from one of my favorite 'ibles: the polargraph. I loved the drawing style and thought how cool would it be to do this on the side of a building? Unfortunately the challenges to setting up such a large polargraph..... Listed under: [Home Automation Projects](#), [Robotics – Automation Projects](#)
592.  [Kaleiduino: A Battery Powered Arduino LED Kaleidoscope](#) Hello everyone, and welcome to my Instructable! This instructable will show you how I made the first ever DIY Arduino controlled "LED Kaleidoscope"! What is an LED kaleidoscope? Well, our traditional kaleidoscopes used 3 mirrors joined as a triangle with stuff like sequins and stolen..... Listed under: [Battery Projects](#), [LED Projects](#)
593.  [Using The PCF8575 i2c i/o Expander To Read Inputs With Arduino](#) This Instructable will show you just how easy it is to add extra inputs to your Arduino. You can use this technique to add hundreds of extra inputs to your Arduino with only two wires by using a fancy communication protocol called i2c (eye-squared-see). What I..... Listed under: [Sensor – Transducer – Detector Projects](#)
594. [Arduino Robotic Spider V8](#) I needed a project that would use all my servos, so I decided to make the do-nothing, worthless spider. If you have fischertechnic and servos to waste, this is the project for you! Really, this flopping spider makes for a great learning project. The main..... Listed under: [Robotics – Automation](#)



[Projects](#)

595.  [Laser Cut Sphere-O-Bot using Arduino](#) The Sphere-O-Bot is a simple 2 axis CNC machine that can draw on most spherical surfaces. You can use it to decorate ping pong balls or eggs. This design is based on the 3D printable Sphere-O-Bot. By building your Sphere-O-Bot using a laser cutter, you can..... Listed under: [Robotics – Automation Projects](#)
596.  [Arduino controls cheap RC car transmitter](#) OBJECTIVE Cheap Chinese RC toy cars can be had for about 5 Euros in the local market. The wireless brains behind the majority of these cheap RC toys is a pair of very cheap ICs the TX2 and the RX2. Yup, that's what they are called. So this..... Listed under: [Car Projects](#), [Projects](#), [Radio Projects](#)
597.  [Arduino Ping Ultrasonic Range Finder Code](#) The Ping))) is an ultrasonic range finder from Parallax. It detects the distance of the closest object in front of the sensor (from 2 cm up to 3m). It works by sending out a burst of ultrasound and listening for the echo when it bounces..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)
598.  [Internet Devices for Home Automation](#) This instructable shows the principles involved in making devices to control home automation over the internet. We're going to construct a device (or several of them), that talk to each other over the internet to control lights, motors for curtains/blinds, power sockets etc. In contrast..... Listed under: [Home Automation Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
599.  [Arduino based Bi-color LED Matrix Audio Spectrum Visualizer](#) After we came up with the Bi-color LED Matrix Driver Module kit, we have been looking around for interesting projects to work with it. You may be interested in some of the projects we have put up at instructables using this LED Matrix kit. Instructable..... Listed under: [LED Projects](#), [Sound – Audio Projects](#)
600.  [Breathalyzer using an Arduino](#) 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..... Listed under: [Medical – Health based Projects](#), [Projects](#)
601.  [Magic Light Capacitance Sensor using an Arduino](#) This was my very first arduino project. Its great for beginners. Fade the color or the lights by moving your hands near it. It fades from a pretty purple blue to a fiery red-orange. Its was SUPER easy to build, not too hard to write..... Listed under: [LED Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)
602.  [LED Flipbookit: full color and brightness control with an Arduino](#) Step 1: Gather the materials Materials: - addressable RGB LED strip : I used a new variety of three conductor WS2811 strips. - an Arduino : I used a Arduino Leonardo. Any 5vdc Arduino should be adequate. - 4 AA batteries and a battery holder..... Listed under: [LED Projects](#)
603.  [Infinity Mirror Clock using Arduino](#) Ever since my addressable RGB LED strips (WS2812B) came from Aliexpress, I've been fascinated with LED projects. Following up on my success with my Charlieplexed LED clock, I wanted to create something with more Jazz.. While browsing google images, I came across an instructable for..... Listed under: [Clock – Timer Projects](#)
604.  [How to Make a PIP-Boy using an Arduino](#) So what exactly is a PIP-Boy, you ask? For those unfamiliar, a PIP-Boy is a device used by the protagonist in the popular Fallout series of video games for navigation, radiation detection, data storage/playback, and inventory management. Being a major fan of the franchise, I..... Listed under: [Game – Entertainment Projects](#), [Projects](#)
605.  [Experimenters Guide for Arduino as Performed at OIT](#) Resources Adafruit ARDX - v1.3 Experimentation Kit for Arduino Experimenters Guide for Arduino (PDF) Bread Board Layouts (PDF) Arduino Tutorial Bundle (Instructable) This Arduino Tutorial is going to be very similar to the Arduino Tutorial Bundle Instructable but because we are working on this in..... Listed under: [Other Projects](#), [Projects](#)
606.  [ZAPpelin, or how to train your blimp with an Arduino and IR remote](#) Is it flying seal? A flapping alien? No it's a ZAPpelin, an Arduino controlled indoor blimp, setup to learn in the signals from an IR remote to command it. This project came to life at the third Arduino Jam Februari 15th to 17th 2013, at Timelab,..... Listed under: [Game – Entertainment Projects](#), [Radio Projects](#)
607.  [Digital Zoetrope using Arduino](#) A zoetrope is a mechanical device that animates a series of pictures by spinning them fast enough that the images appear to merge together and move, My digital zoetrope works on a similar principal, by flashing the LEDs while they are spinning it is possible..... Listed under: [Video – Camera – Imaging Projects](#)
608. [The machine of answers Using Arduino](#) Should you ask your boss for a raise? Call that cute guy you met at a party? Sell your stock? Wouldn't it be nice to have a handy method of handling some of life's more pressing dilemmas? This machine give you the answer to all..... Listed under: [How To – DIY – Projects](#)



609.  [ABC 123 Toddler Trainer using Arduino](#) Here is a kid tested and teacher approved trainer for the kids in your family and / or extended family that are learning their ABCs and their 123s. It was kid tested on my granddaughter, who really loves it, and was approved by my wife,..... Listed under: [Home Automation Projects](#)

610.  [Aergia: Android controlled TV Remote\(with Speech Recognition\) using Arduino](#) Have you ever faced this situation while sitting on your favorite spot on the couch or recliner, comfortably watching your favorite TV program? You're snugly tucked under the blanket, the air conditioning is pleasantly cool, the sun outside is shining it's delicate warm golden rays..... Listed under: [Arduino Android](#)

611.  [The Arduino AA Undershield](#) I recently bought an Arduino Diecimila board. It's awesome and the applications, you can use it for or with is almost unlimited. However there's a problem when you want to use it in portable applications. You can use the Liquidware lithium backpack, which is a..... Listed under: [Development Board – Kits Projects, Projects](#)

612.  [Bluetooth RGB Shelf Lighting using Arduino](#) Being the giant fan of LED's that I am i'm always trying to come up with new ways I can put them throughout my house. Today i'm going to show you how to create a simple, yet extremely eye catching, RGB Bluetooth controlled Shelf lighting..... Listed under: [Home Automation Projects, LED Projects](#)

613.  [L.O.G. \\$10 Arduino](#) There are probably thousands of articles on making an Arduino. So who needs another Arduino? Well, this Lazy Old Geek(L.O.G.) needs one. Here's the features I would like: Features: Low cost More permanent than a breadboard Not a custom PCB More prototyping area than a..... Listed under: [Arduino Programmer Projects, Projects](#)

614.  [Love Gauge Using Arduino](#) I'm working together with my wife. But sometimes one of us has an external appointment. So, if one of us is thinking about the other, we want to show it together. For this, I have made an Love Gauge for us. It stands on our..... Listed under: [Other Projects](#)

615.  [Arduino Powered Autonomous Vehicle](#) A few months back I started playing around with Arduino micro controllers as a learning exercise (and for fun); this project is the culmination of that. The goal of the project was to create a vehicle that can autonomously navigate through a series of waypoints..... Listed under: [Car Projects](#)

616.  [Emotidora: Hats with Emotions using Arduino](#) This project, Emotidora, will help a user express his/her emotions about events in day-to-day life. Weve all been in situations where something very exciting or unfortunate has happened to us and we want to share it with other people. This usually involves the expression of..... Listed under: [Game – Entertainment Projects, Home Automation Projects, Projects](#)

617.  [Traffic Signal / Stop Light 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: [Other Projects](#)

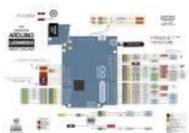
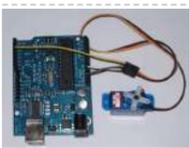
618.  [WAVEbuoy using Arduino](#) The WAVEbuoy is a arduino lamp connected to the internet that displays the current wave height of any of the National Data Buoy Centre's wave buoys. This lamp is currently connected to the Sevenstones Lightship buoy that gives an indication of swell approaching Cornwall in..... Listed under: [Home Automation Projects](#)

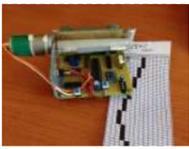
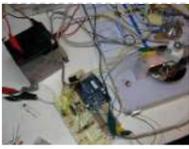
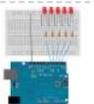
619.  [Arduino Keyboard and Mouse Control Code](#) This example illustrates the use of the Mouse and keyboard libraries together. Five momentary switches act as directional buttons for your cursor. When a button is pressed, the cursor on your screen will move, and a keypress will be sent to the computer. Once you..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects](#)

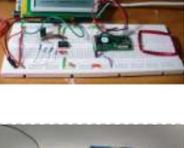
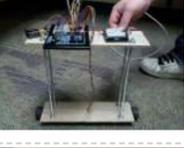
620.  [Arduino ADK LED Lighting](#) Have you ever wanted to control electronics with your smartphone? The Arduino ADK (Android Development Kit) is the Arduino Mega with a built in USB host device, ready for your smartphone to be plugged in! We'll make a simple introductory project with a few LED..... Listed under: [LED Projects, Projects](#)

621.  [Arduino Based Temp and Humidity Display](#) The temperature in my office at work varies quite a bit depending on the time of day, season, and the whims of the other people I share the floor with. When I'm sitting at my desk shaking uncontrollably or sweating profusely it would be nice..... Listed under: [Temperature Measurement Project Ideas](#)

622.  [Pixel Drop Ceiling using Arduino](#) In our living room we have a small patch of drop ceiling right in the middle of the room, basically a giant piece of duct tape to cover up bad carpentry. It was constantly getting water damage from what looks like a giant hole in..... Listed under: [Home Automation Projects](#)

623.  [Arduino Leonardo Pinout Diagram](#) Arduino Leonardo Introduction: The Arduino Leonardo is a microcontroller board based on the ATmega32u4 (datasheet). It has 20 digital input/output pins (of which 7 can be used as PWM outputs and 12 as analog inputs), a 16 MHz crystal oscillator, a micro USB connection, a power jack, an ICSP..... Listed under: [Pinouts](#)
624.  [NFC Ring Lock Box using Arduino](#) Hi everybody! Welcome to my first instructable! I apologize in advance for my poor level in English. In this step-by-step guide I am going to teach you how to build a simple and very cheap NFC Ring Lock Box ! Step 1: What you'll need..... Listed under: [Security – Safety Project Ideas](#)
625.  [Arduino Digital Switch Code](#) This is basic for your arduino projects, input switch read from digital input. When ever switch pressed, LED will turn on. [caption id="attachment\_4235" align="aligncenter" width="600"] PushButton\_arduino\_code[/caption] Instruction; 1) Connect cathode lead of LED (shorter lead) to ground pin and anode lead of LED..... Listed under: [How To – DIY – Projects, Projects](#)
626.  [ADXL3xx Accelerometer using an Arduino](#) This tutorial shows you how to read an Analog Devices ADXL3xx series (e.g. ADXL320, ADXL321, ADXL322, ADXL330) accelerometer and communicate the acceleration to the a personal computer. This tutorial was built using the breakout boards from Sparkfun. The adafruit accelerometer breakout board also works, though..... Listed under: [Metering – Instrument Projects, Projects](#)
627.  [4x4x4 LED-cube based Arduino and Flower protoboard](#) This instructable will teach you how to build your 4x4x4 LED cube with Flower ProtoBoard and control by Arduino. Why is Flower ProtoBoard ? not ProtoBoard ? Because of I often use protoboards to test out if a new idea works in practice. I do not use..... Listed under: [Game – Entertainment Projects, Home Automation Projects, LED Projects, Projects](#)
628.  [DIY Arduino FM Radio Shield](#) I've been visiting local convenience store (Dollarama, here in Montreal, Canada) and notice nice looking FM Radio, just for only \$3. Why not to try to interface it to my lovely Arduino? Idea looks quite challenging, the same time what is the point in interfacing..... Listed under: [How To – DIY – Projects, Projects, Radio Projects](#)
629.  [SOLAR POWERED ARDUINO WEATHER STATION](#) In country like India most of the people are dependent on agriculture.For effective planning in agriculture weather forecast is of utmost importance.So farmers are always interested in the Weather Forecasts.As farmers stay in remote areas, they have to wait for the news updates in tv,..... Listed under: [Solar energy projects](#)
630.  [Arduino and L293D Robot \( Part 1 \)](#) Here is part 1 of the Arduino and L293D Robot.This is part of a series of instructables leading to a Line follower Robot. This is a basic Robot made by controlling two motors via the L293D chip through an Arduino Board. I have done this project in..... Listed under: [Projects, Robotics – Automation Projects](#)
631.  [How To Build An Easy Robot Turtle Using Arduino](#) The synthduino is a fun Arduino project to do and as a beginner it is a great way to learn new things about Arduino's many features. With only using household items to build the synthduino you will be satisfied with the finishing project and feel..... Listed under: [Game – Entertainment Projects](#)
632.  [An FM Stereo Broadcaster PLL using Arduino](#) I have two good AM transmitters - one I'd built using a single 6888 Tube plus an old KnightKit Broadcaster that I'd refurbished, as well as a high-quality solid state transmitter from SSTRAN that I use to play music over the several antique AM radios I've repaired..... Listed under: [Projects, Radio Projects](#)
633.  [Burning the Bootloader on ATmega328 using Arduino UNO as ISP](#) I had one remote controlled project that needed an Arduino running 24/7 but I didn't want to leave my \$32 Arduino UNO, so I decided to buy some pieces and created my own Arduino. The most important part was buying the microcontroller. These were my..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects](#)
634.  [Arduino Servo Basic Code](#) In arduino projects, you might add servo to your projects. This short tutorial, show you the basic how arduino and servo works together. Instruction; 1) Connect all jumper wire as shown in diagram. 2) Connect the signal wire from servo to digital pin 9..... Listed under: [Motor Projects, Projects](#)
635.  [Arduino EMF Detector](#) Here's a small, quick project you can do with an arduino, the EMF Detector! Step 1: Circuit All you need for this project is 10- 330 ohm resistors 10- LED's 1-3.3m resistor 1-Solid core wire (this will serve as the probe) breadboard, wires, battery &..... Listed under: [Projects, Sensor – Transducer – Detector Projects](#)
636.  [How to use a 1602 16X2 LCD display with Arduino, TI Launchpad, and standalone MSP430 video instructions](#) I show how to use a standard 16X2 LCD display in three different use cases. 1. With an Arduino Uno 2. With a TI Launchpad MSP430 running Energia 3. Directly on a breadboard on an MSP430G2553 running Energia This LCD display is low cost - ..... Listed under: [LCD Projects, Projects](#)
637.  [Home automation system using Arduino and SIM900 GSM module](#) Hi there! As I've almost finished my studies at Faculty of Engineering, I had to make a graduation project and my thought was to make a jaw-dropping thing (I know that's hilarious 😄 ) to show everybody that I'm a good prototype maker and I..... Listed under: [Home Automation Projects](#)
638.  [How to control 8 leds using Arduino UNO](#) hey guys this is my first arduino project plz comment how u feel. Step 1: Things u need As this is easy project for beginner's so parts are also simple Parts: 1- Arduino uno or any other board will work 1-Beardboard 9- jumper wires or..... Listed under: [LED Projects, Projects](#)
639.  [Arduino LED Bar Graph Code](#) The bar graph - a series of LEDs in a line, such as you see on an audio display - is a common hardware display for analog sensors. It's made up of a series of LEDs in a row, an analog input like a potentiometer,..... Listed under: [LED Projects, Projects](#)

640.  [Arduino Guitar Tuner](#) Build your own electric guitar tuner using the Arduino! I decided to make this because I wanted to experiment with audio input and frequency detection. I used Amanda Ghassaei's method for Arduino Frequency Detection in order to get frequency readings using the Arduino. I used LEDs that..... Listed under: [Sound – Audio Projects](#)
641.  [Paper Electronics: Make Interactive, Musical Artwork with Conductive Ink using Arduino](#) If you've ever wanted to bring a piece of paper to life, now is your chance. This instructable will take you through all the necessary steps to create an amazing interactive flyer or artwork. This event flyer is no ordinary piece of print. It is printed using..... Listed under: [Projects](#), [Sound – Audio Projects](#)
642.  [Arduino-based master clock for schools](#) If your school, or kids school, or other location relies on a central master clock that is broken, you may have a use for this device. New master clocks are available of course, but school budgets are under extreme pressures, and it really is a..... Listed under: [Clock – Timer Projects](#), [Projects](#)
643.  [Rainbowduino Sign using Arduino](#) The Rainbowduino is a variant of the Arduino and among other things is capable of driving an 8x8 RGB LED matrix. I had just finished a backyard re-model and was in need of an entrance sign. Step 1: Carving and Painting the Sign I had..... Listed under: [LED Projects](#)
644.  [Another Arduino Traffic light](#) After working with the arduino and not knowing what the heck I'm doing I made Another simple traffic light. I looked around the web to find one that looks about normal and came across none. They seemed too fast. So, I found and modded some..... Listed under: [Car Projects](#), [Projects](#)
645.  [Electronic Music Box Powered by Arduino \(sort of\)](#) Music is the most universal means of expression. Regardless cultural language or age the idea conveyed though music would not differ much. It is safe to say everyone loves music, one type or another. When one's favourite piece is played there is a overwhelming desire..... Listed under: [Sound – Audio Projects](#)
646.  [Aqua Garduino Mini @hydroFishAqua82](#) Arduino Powered Micro Aquaponic System with Pi Camera and Twitter Feed We are creating an automated aquaponic system with mobile updates via Twitter. Sensors and motors will be controlled from an Arduino while the entire system, including mobile updates, will be orchestrated by a Raspberry..... Listed under: [Home Automation Projects](#)
647.  [Homemade arduino printer](#) If you want to make your own high resolution printer (maybe not so high res), you are at the right place. This Instructable will show you how to do with two dead cd/dvd drive and a pen (pilot, whiteboard marker, whatever you have) at the..... Listed under: [How To – DIY – Projects](#), [Projects](#)
648.  [My Arduino In Circuit Programmer](#) This Lazy Old Geek is also an Arduino Geek. If you are an Arduino Geek, one of the common microcontrollers used by Arduinos is the Atmega328 chip. In order to use Arduino software, the Atmega must have bootloader software on it. Okay, so I bought..... Listed under: [Arduino Programmer Projects](#), [Projects](#)
649.  [BLDC Motor Control with Arduino](#) There is a lot of interest these days among hobbyists in controlling brushless DC (BLDC) motors, which have improved performance and better energy efficiency over traditional DC motors, but are more difficult to use. Many off-the-shelf products exist for this purpose. For example, there are..... Listed under: [Motor Projects](#)
650.  [Beginner Programming of Arduino](#) This video is from a meeting of the Kids and Technology Meetup group in Washington DC. The youth who show up to these free meetings are eager to learn advanced uses of computers. The presenters were John Dukovich and Hugo Estrada.... Listed under: [Arduino Programmer Projects](#), [Projects](#)
651.  [Arduino Button Mouse Control Code](#) Using the Mouse library, you can controls a computer's onscreen cursor with an Arduino Leonardo, Micro, or Due. This particular example uses a five pushbuttons to move the onscreen cursor. Four of the buttons are directional (up, down, left, right) and one is for a..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)
652.  [Arduino String Character Functions Code](#) The String functions charAt() and setCharAt() are used to get or set the value of a character at a given position in a String. At their simplest, these functions help you search and replace a given character. For example, the following replaces the colon in..... Listed under: [Development Board – Kits Projects](#), [Projects](#)
653.  [Arduino-Radio Controlled Hydrogen Blimp](#) The blimp is controlled by a transmitter on the ground, operated by a human. There are three control levers-- one for each motor, and one for the servo that rotates the axis they're attached to. You push / pull to make the motors speed up..... Listed under: [Projects](#), [Radio Projects](#)
654.  [Arduino Switch \(case\) Statement, used with serial input](#) An if statement allows you to choose between two discrete options, TRUE or FALSE. When there are more than two options, you can use multiple if statements, or you can use the switch statement. Switch allows you to choose between several discrete options. This tutorial..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)
655.  [Potentiometer or variable resistor control LED Code](#) The if() statement is the most basic of all programming control structures. It allows you to make something happen or not depending on whether a given condition is true or not. It looks like this: if (someCondition) { // do stuff if the condition is true } [Get Code]..... Listed under: [LED Projects](#), [Metering – Instrument Projects](#), [Projects](#)
656.  [MultiSerial Mega using Arduino](#) Sometimes, one serial port just isn't enough! When trying to communicate with multiple serial enabled devices, while also sending info back to the main serial window, a few extra RX/TX ports can be a welcomed thing. This example makes it one of Arduino Mega's..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

657.  [Arduino 7 segment Displays Digital Clock With Charlieplexing LEDs](#) This is my second instructable. I just had a mood of making a digital watch. But wanted to make it a learning process. I already had a sanguino i could have easily used that Atmega644 chip. it would have been more than enough. But i..... Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#), [Projects](#)
658.  [Autonomous Arduino Car](#) My questions for the Make-to-Learn Youth Contest 😊 What did you make? This goal of this project was to take commonly available electronic equipment and create an inexpensive, self-controlled vehicle. In simpler terms, this is an attempt at basic autonomy. It uses an arduino logic..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#), [Projects](#)
659.  [Remake the Mosquito Killer using Arduino](#) Hi, everyone, i would like to introduce how i remake my mosquito killer here. With this remaking, my mosquito killer become "Smart", and really facilitate my life. I rented a room in very remote place to save my money, in the summer, the biggest trouble..... Listed under: [Home Automation Projects](#), [How To – DIY – Projects](#), [Projects](#)
660.  [Instagram Inspired DIY Photo-Booth using Arduino](#) I decided to build a simple photo-booth as a fun addition for events, this goes through the basic steps of how i went from a few pieces of wood to a fully functional booth. I have also included a photo of what the images look..... Listed under: [Arduino Video – Camera – Imaging Project Ideas](#), [Ideas](#)
661.  [How to connect Arduino and RFID](#) On this instructable I will try to show how to interface a RFID sensor with the Arduino. I am using the RFID sensor from seeedstudio the serial version of it. There are a few parts you will gonna need. I also bought some RFID keys..... Listed under: [Ideas](#), [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)
662.  [The Arduino Weather Station](#) I've always been interested in monitoring my local weather, and noticed the difference between what weather.com and accuweather.com think my local weather is, and what I see out the window. I also wanted better control over my heating and A/C system. As a computer and..... Listed under: [Ideas](#), [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)
663.  [Arduino GPS Datalogger](#) Do you want to log some GPS data onto an SD card using your Arduino? Do you already own a Sparkfun microSD shield and GPS module? Did you try the Adafruit Sheild (although it is awesome and cheap) but it stole all of your pins?..... Listed under: [GPS Based Project Ideas](#), [Ideas](#)
664.  [Serial Communications with Arduino](#) At this point you should have a robot that can think on its own, we need to be able to tap into its thought process. See what he sees. Make some of his decisions for him. in essence, we need to be able to guage..... Listed under: [Ideas](#), [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)
665.  [Make Money with Arduino](#) \*\*\*\* ENTERED IN THE HURRICANE LASERS CONTEST\*\*\*\* What would I do with a Laser Cutter? Build Simple Robotic Kits to teach people a Hobby that I Love.Ever wanted to make some money from your projects?This Instrutable will show you how to Simply interface a coin..... Listed under: [Ideas](#), [Other Project Ideas](#)
666.  [Build an RFID time-clock system using Arduino](#) With this project you can build an RFID time-clock system to keep track of employees, children and more. Updated 18/03/2013 Recently I was listening to a friend who has three teenage children, of whom needed to arrive home before their parent. Unfortunately the parent needs..... Listed under: [Clock – Timer Projects](#), [Projects](#), [RFID - NFC projects](#)
667.  [Drifter – Arduino controlled RC car](#) Drifter is based on a cheap RC toy car I found at Toys'r'us, named 'Fast lane Monster Drift'. I think it's the same model Frits has been used in an episode of TLHR. It doesn't work well, you get what you pay for. But it is a..... Listed under: [Car Projects](#), [Projects](#)
668.  [House Temperature Monitor using Arduino](#) Recently a family member had his furnace fail while he was away from his house for a long period of time in the winter. His pipes burst and caused quite the mess. This project describes a temperature sensor that broadcasts the temperature in his house to the..... Listed under: [Home Automation Projects](#), [Projects](#), [Temperature Measurement Projects](#)
669.  [Time Lapse Digital Camera using Arduino](#) Following the instructable here, I was able to turn an old digital camera into a time lapse camera using an arduino, a relay, and an open source software program called makeAVI (windows). To modify the camera I disassembled the camera cover and removed the button that..... Listed under: [Projects](#), [Video – Camera – Imaging Projects](#)
670.  [Arduino Knight Rider Code](#) Arduino Knight Rider light effect, a simple variation of blink code. Parts List; 1) 5x 5mm red LED 2) 1x Arduino 3) 5x 330Ω resistor 4) Jumper wire Instruction; 1) Connect all LED as diagram below, make sure cathode lead of LED at ground..... Listed under: [LED Projects](#), [Projects](#)
671.  [The Self-Balancing Robot using Arduino](#) Introduction The idea of this project was to design and construct a robot that consists of a body and two wheels that would be able to balance on its own. This behavior is similar how a segway (a new mode of transportation) works. Our goal..... Listed under: [Projects](#), [Robotics – Automation Projects](#)
672.  [How To Build Arduino Thermal Camera](#) My recent arduino project was to build thermal camera on the cheap using an ir sensor and some pan/tilt hardware. If you look at the device picture to the left there is also acoustic range finder mounted to the top. The device works by sweeping..... Listed under: [Projects](#), [Video – Camera – Imaging Projects](#)
673. [Arduino MP3 Player](#) I present this new Arduino project: A full MP3 player based on Arduino. As you can see in the photo, the idea was to build a standalor player, in the style of antique radios or 'tapes', in the age of iPhones .... The player uses a small..... Listed under: [Projects](#), [Sound – Audio Projects](#)



674. [Analog VU meter and Clock using Arduino](#) This project brings back the old time Analog VU Meter, with the added functionality of a neat looking clock! When you turn off your music the meters automatically swing into to clock mode. Behind it all is the popular and easy to use Arduino. This..... Listed under: [Calculator Projects](#), [Metering – Instrument Projects](#), [Projects](#)



675. [Arduino MIDI Foot Pedal Keyboard](#) The Origin My dad is a musician. He can play a multitude of instruments. However, he only has two arms, BUT he also has legs! That's when we decided that we would reuse the foot pedals from an old organ and convert them into an..... Listed under: [Game – Entertainment Projects](#), [How To – DIY – Projects](#), [Projects](#)



676. [Arduino Police Strobe Light Code](#) Arduino Police Strobe Light effect, another simple variation of blink code. Arduino Police Strobe Light effect, another simple variation of blink code. Parts List; 1) 2x 5mm red LED 2) 2x 5mm blue LED 3) 1x Arduino 4) 4x 330Ω resistor 5) 1x 10kΩ potentiometer..... Listed under: [Car Projects](#), [LED Projects](#), [Projects](#)



677. [Arduino RFID Lock](#) The Arduino RFID lock How does it work? The Arduino RFID lock is a lock that can be opened easily, but is secure. The lock works with a server database that can register card codes. On the door there is a RFID reader connected to..... Listed under: [Projects](#), [RFID - NFC projects](#), [Security – Safety Projects](#)



678. [48x8 SCROLLING MATRIX LED DISPLAY USING ARDUINO CONTROLLER](#) A monochrome (single colour) LED dot matrix display is used for displaying the Characters and Symbols which is interface with a microcontroller. This project will deliberate on displaying a scrolling text message on a 48x8 LED dot matrix display. The microcontroller used is Arduino Uno..... Listed under: [LED Projects](#), [Projects](#)



679. [Connecting Arduino LCD Display Code](#) LCD display is great way to display output from your arduino when it not connected to your computer. The common display used in arduino projects is 16x2 parallel LCD display which compatible with the Hitachi HD44780 driver. It can easily recognize with it 16 pin..... Listed under: [LCD Projects](#), [Projects](#)



680. [Build a fully featured Arduino Thermostat](#) In this post I will attempt to describe the steps I took to build the arduino based thermostat shown in the following videos. The first video was taken when around just half of the coding of the menu system was complete, but gives you a..... Listed under: [Projects](#), [Temperature Measurement Projects](#)



681. [DIY FSK RFID Reader using Arduino](#) This page is describes the construction of an RFID reader using only an Arduino (Nano 3.0 was tested, but others may work), a hand-wound wire coil, and some assorted low cost common components. Credits The hardware and software designs for this project are based in..... Listed under: [How To – DIY – Project Ideas](#), [Projects](#), [RFID - NFC projects](#)



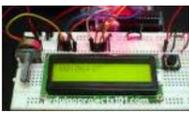
682. [Arduino Voltmeter Code](#) This arduino projects show how to make voltmeter with your arduino. It use voltage divider concept to estimate the voltage input. Instruction; 1) Connect all jumper wire as shown in diagram. Upload this code to your arduino /\* Voltmeter Voltmeter base on voltage divider concept. Code based on: <http://www.clarenceho.net:8123/blog/articles/2009/05/17/arduino-test-voltmeter> Coded by: arduinoprojects101.com \*/..... Listed under: [Metering – Instrument Projects](#), [Projects](#)



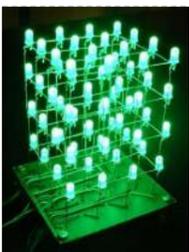
683. [Arduino Temperature Sensor Code](#) This arduino projects show how to read Celsius and Fahrenheit temperature with LM35 temperature sensor. Parts List; 1) 1x 16x2 parallel LCD display (compatible with Hitachi HD44780 driver) 2) 1x Arduino 3) 1x 10kΩ potentiometer 4) 1x LM35 temperature sensor 5) Jumper wire Instruction; 1)..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#), [Temperature Measurement Projects](#)



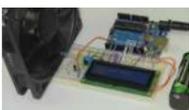
684. [Web Server using Arduino](#) In this example, you will use your Ethernet Shield and your Arduino to create a simple Web server. Using the Ethernet library, your device will be able to answer a HTTP request with your Ethernet shield. After opening a browser and navigating to your Ethernet..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)



685. [Arduino Stopwatch Code](#) Arduino projects, running stopwatch on arduino. Arduino projects, running stopwatch on arduino. Parts List;1) 1x 16x2 parallel LCD display (compatible with Hitachi HD44780 driver)2) 1x Arduino3) 1x 10kΩ potentiometer4) 1x 10kΩ resistor5) 1x switch6) Jumper wire Instruction; 1) Connect all jumper wire as shown in..... Listed under: [Clock – Timer Projects](#), [Projects](#)



686. [LED Show using Arduino Esplora](#) This example shows you how to read the values from the joystick. The output will be displayed through the serial monitor and as a color on the RGB LED. The joystick has two axes, X and Y. Each axis controls a color of the RGB..... Listed under: [LED Projects](#), [Projects](#)



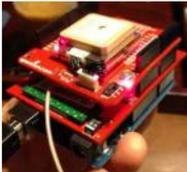
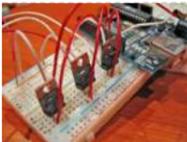
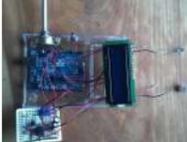
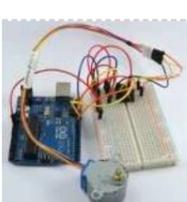
687. [Arduino RPM Counter / Tachometer Code](#) Arduino projects, make arduino rpm counter with arduino. Instruction;1) Connect all jumper wire as shown in diagram. 2) Connect IR LED to digital pin 13. 3) Connect IR Phototransistor (dark) to digital pin 2. Make sure shorter lead connected to digital pin 2 and..... Listed under: [Metering – Instrument Projects](#), [Projects](#)

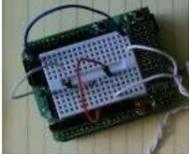
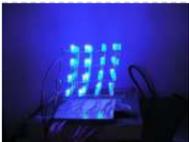
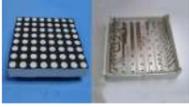


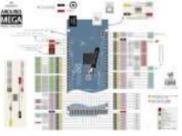
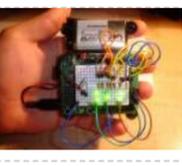
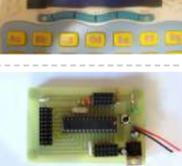
688. [Arduino HC-SR04 How to use Ultra Sonic Sensor](#) Arduino HC-SR04 The Arduino HC-SR04 is different from most of those commonly seen on the market, which have 4 pins compared to 3 pins. But the operation principle is the same, transmit signal, and depends on when the signal is received to estimate the distance..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

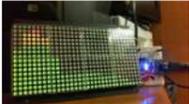
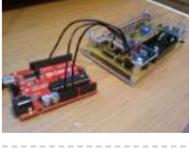
689. [Arduino Hexapod Robot](#) Arduino Hexapod Robot Design I will show you how to build an arduino hexapod robot, from building the body, to how to imple the algorithm. To learn about the implementation of the algorithm, read this first, if you are not sure what is IK, read..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

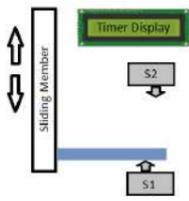


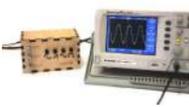
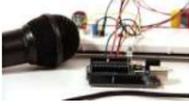
690.  [Real-Time Arduino GPS Tracker with iPhone app](#) [INTRO] This past semester, I decided to build a GPS receiver with an iPhone app that tracks it for my semester project. Here is a step-by-step tutorial to show you how you can build your own. [OVERVIEW] Architecture of my Real-Time GPS Tracker project. I'll..... Listed under: [Blog](#), [GPS Based Projects](#), [Phone Projects](#), [Projects](#)
691.  [Arduino GPS Tracking System](#) This was easily the most time I've spent producing an Arduino Tutorial. I've been sporadically walking around NYC with this Arduino GPS for weeks as I've tweaked the code and gotten it just right. If it wasn't obvious from the title, this tutorial will teach you..... Listed under: [Featured](#), [GPS Based Projects](#), [Projects](#)
692.  [A arduino library for the MAX7221 and MAX7219](#) These two chips provide an easy way to control either an array of 64 Led's or up to eight digits made of 7-segment displays with a minimum of electronic components. Besides the chip itself you will need only a single resistor and one or two..... Listed under: [Other Projects](#), [Projects](#)
693.  [An amplifier for Arduino](#) For my project, the Arduino output is not enough so digging on the net and asking to a friend some help, I managed to build an amplifier to feed my 3 computer fans. This circuit can be used as an amplifier to switch on and..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#), [Sound – Audio Projects](#)
694.  [Arduino temperature controlled PC Fan](#) Oscar Gonzalez gives us a simple tutorial for speed controlling a PC FAN and reading a LM35 temperature sensor with an Arduino microcontroller. He covers the use of an optocoupler, PWM (Pulse Width Modulation) and reading analog voltages with the Arduino. He even has a..... Listed under: [Projects](#), [RTOS – OS Projects](#), [Temperature Measurement Projects](#)
695.  [Power \(Energy\) Meter using Arduino](#) Part 1. Analog Front-End. Opto-Isolator. Looking at the Power Quality Analyzer display, I was wandering, if there is any error in the measurement results, introduced by transformer. Overall THD picture doesn't change much, suspiciously drawing same chart in the morning and in the evening, when..... Listed under: [Metering – Instrument Projects](#), [Projects](#)
696.  [Audio VU Meter using Arduino](#) Biasing AC input using resistor divider and scaling up / down if necessary; Sampling fast and accurately using direct access to Control Registers of ADC and Timer1; Subtract whatever was added at step #1 from result of Analog / Digital conversion and Square; Average /..... Listed under: [Metering – Instrument Projects](#), [Projects](#), [Sound – Audio Projects](#)
697.  [True Analog Audio Volume Control using Arduino](#) How my Arduino can precisely measure audio input (VU meter), and obviously, next thing that comes to mind right after measurements, is regulation or control. There are many different ways how to electronically adjust audio volume or level of AC signal. I'll name a few:..... Listed under: [Projects](#), [Sound – Audio Projects](#)
698.  [Sound Localization using Arduino](#) Well, it's elementary simple in theory, how to do sound localization based on phase difference of signals, that received by two spatially distant microphones. The Devil, as always, in details. I've not seen any such project created for arduino, and get curious if it's possible at..... Listed under: [Projects](#), [Sound – Audio Projects](#)
699.  [Speech Synthesizer using Arduino](#) Synthesized speech was for a long time the Holy Grail of computing, and back in the 1980s when a 4MHz CPU made your computer the fastest machine in the neighborhood it just wasn't practical for software to create intelligible speech. In those days the only..... Listed under: [Sensor – Transducer – Detector Projects](#)
700.  [Spectrum Analyzer, Arduino project with FFT algorithm](#) The basic idea was to create color organ / spectrum analyzer on arduino board, trying to minimize quantity of external components, like analog filters, LED display drivers, etc. Spend a lot of time in search on internet I was able to find only two !..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)
701.  [Arduino Sound Alarm](#) I've just completed my second Arduino project, a sound level detector which sets off an "alarm" when there's the sound level is too high for too long. I built it for use in a school that wants to provide visual feedback to students when they..... Listed under: [Projects](#), [Security – Safety Projects](#), [Sound – Audio Projects](#)
702.  [MEGAsshield KIT for Arduino MEGA 2560 R3 and Arduino DUE](#) ARDUINO MEGA 2560 REV3 The MEGA 2560 is designed for more complex projects. With 54 digital I/O pins, 16 analog inputs and a larger space for your sketch it is the recommended board for 3D printers and robotics projects. This gives your projects plenty of..... Listed under: [Development Board – Kits Projects](#), [Projects](#)
703.  [How To Control A Stepper Motor With An Arduino Uno](#) Overview Stepper motors fall somewhere in between a regular DC motor and a servo motor. They have the advantage that they can be positioned accurately, moved forward or backwards one 'step' at a time, but they can also rotate continuously. In this lesson you will..... Listed under: [Motor Projects](#), [Projects](#)
704.  [Arduino controlled Bluetooth-bot](#) This instructable will show you how to convert an old toy R/C car from the thrift-store (\$1.50) into a bluetooth controlled robot. To make the conversion, you will need an Arduino (any type), an L298N dual 2-amp motor-controller (or similar), and a bluetooth serial adapter..... Listed under: [Projects](#), [Robotics – Automation Projects](#)
705. [Arduino Battery](#) As many of you may know, this Lazy Old Geek loves Arduinos. Many of my projects are portable and need a battery source: <http://www.instructables.com/id/Arduino-Pedometer/> <http://www.instructables.com/id/Arduino-Nokia-LCD-Sensors/>

-  <http://www.instructables.com/id/Ultrasonic-Tape-Measure/> All pricing was determined about early 2012. So, I've been using Adafruit 6 AA Battery holder \$5.00 <https://www.adafruit.com/products/248>..... Listed under: [Battery Projects](#), [Projects](#)
- 
706.  [Data Logger Project using an Arduino](#) This is a data logger I made for my class. I couldn't find any instructions that I could use to make the Arduino record the light brightness and the temperature. Then display the temperature and the light value on the LCD then Save it to..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#), [Temperature Measurement Projects](#)
- 
707.  [Arduino & Visual Basic 6 Light Controller](#) This instructable is something like a tutorial for new VB users. It shows how to create a parser base VB6 program to interact with Arduino circuit. Basically, interaction is in the form of serial communication via the USB port. This is my practice after learning..... Listed under: [Other Projects](#), [Projects](#)
- 
708.  [Arduino LCD Twitter display](#) a.k.a. the gratuitously complicated bidirectionally communicating Arduino-based scrolling Twitter display and notifier. ---- This project was mainly done as an excuse to learn how to use character LCD displays with my Arduino, and figure out how to make a bidirectional serial protocol. One major design..... Listed under: [Internet – Ethernet – LAN Projects](#), [LCD Projects](#), [Projects](#)
- 
709.  [Arduino Touch Screen Room Control](#) Hey everyone, I finally finished my touch panel for my bedroom wall and am here to show you how i made it. Unfortunately its not installed in my wall yet as I might be moving and don't want to make anymore holes in my walls,..... Listed under: [Home Automation Projects](#), [Projects](#)
- 
710.  [Very Simple Arduino Electric Lock](#) This is a instructable for a very simple Arduino controlled electric lock. The key idea here is to be very simple as this was more of a proof of concept prototype type of thing. The Arduino is used as a switch to control the lock..... Listed under: [Projects](#), [Security – Safety Projects](#)
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711.  [Simple Parking Sensor using Arduino](#) My car has only parking sensor for the Reverse, so when I enter the Garage there is no way to know if I am close enough to the wall to allow the door to close or too close that I can hit the wall with..... Listed under: [Car Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)
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712.  [Arduino Weather Station Part3, Rain](#) So one of my last projects was adding a weather vane to my Arduino weather station. <https://www.instructables.com/id/Arduino-Wind-Chill-Machine/> <https://www.instructables.com/id/Arduino-Weather-Station-Part2/> This Lazy Old Geek decided to add a rain gauge to it even though we don't get much rain in the high desert. Most digital rain gauges..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)
- 
713.  [simpleTweet\\_01 python using Arduino](#) Arduino Python Twitter (Windows) In this instructable we'll modify my simpleTweet\_00 and rewrite the Processing code with Python. You can expect an ignorant walkthrough by an illiterate noob, but maybe that's just what you're looking for. Before you begin: If you need help installing Python,..... Listed under: [Development Board – Kits Projects](#), [Projects](#)
- 
714.  [Arduino Home automation](#) This is a relatively simple controller for controlling equipment in your home. At the moment I control my central heating, security and lighting. By sending commands from my home computer. My homeeasy central heating controller hack. [http://www.instructables.com/id/BampQ\\_homeeasy\\_home\\_automation\\_central\\_heating\\_c/](http://www.instructables.com/id/BampQ_homeeasy_home_automation_central_heating_c/) I am also able to login remotely from..... Listed under: [Home Automation Projects](#), [LED Projects](#), [Projects](#)
- 
715.  [Arduino 4x4x4 LED Cube](#) Overview: This instructable will cover the building process of an 4x4x4 LED Cube. I will be using an Arduino to control the LEDs. Since the Arduino (Freeduino) has a total of 20 pins (including the analog pins) we will not need to have any multiplexing..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [LED Projects](#), [Projects](#)
- 
716.  [Color Changing Night Light with ATtiny using Arduino](#) I wanted to create something for my wife as a present and this is what I came up with. This is a dark activated color changing night light. It has a sensor that can tell when the room light is turned off. This then will..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [LED Projects](#), [Projects](#)
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717.  [LED Dot Matrix Display using an Arduino](#) In this project, you shall again use two sets of shift registers. These will be connected to the rows and columns of the dot matrix display. You will then show a simple object, or sprite, on the display and animate it. The main aim of..... Listed under: [LED Projects](#), [Projects](#)
- 
718.  [Simple Relay Shield for Arduino](#) Shield to control 6 relay, 6 digital input and 6 analog input with Arduino Duemilanove, Arduino UNO. The digital inputs and relay outputs are equipped with an LED that indicates the status. The circuit diagram is very simple: Step 1: Schematics and PCB In this..... Listed under: [Development Board – Kits Projects](#), [Projects](#)
- 
719.  [Squirt – Arduino, motion activated water cannon](#) Squirt is a motion activated water cannon using Arduino. This was designed for use in the garden but as it's winter we tested it in the bathroom. It works! True motion tracking is expensive and complicated so this system activates when the victim moves into..... Listed under: [Home Automation Projects](#), [Motor Projects](#), [Projects](#)
- 
720.  [Arduino Pedometer](#) Problem: So my nutritionist (doesn't everyone have a nutritionist) suggested I should increase my exercise which primarily consists of walking my dog. She even gave me a chart of activities and calories burned. Here's an example. <http://www.nutristrategy.com/caloriesburned.htm> Well, being a LAZY OLD GEEK, I decided..... Listed under: [Metering – Instrument Projects](#), [Projects](#)

721.  [Arduino Mega Pinout Diagram](#) Arduino Mega Introduction: The Arduino Mega is a microcontroller board based on the ATmega1280 (datasheet). It has 54 digital input/output pins (of which 14 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB..... Listed under: [Pinouts](#), [Projects](#)
- 
722.  [Traffic Lights Beginner Arduino Project](#) This is a beginners project for the Arduino. I am using the Arduino Uno but should work with little or no modification on other arduino models. Setting up the hardware is very easy. This project is more of a training tool for learning how to program..... Listed under: [Car Projects](#), [LED Projects](#), [Projects](#)
- 
723.  [Arduino + Temperature + Humidity](#) A simple temperature sensor using one LM35 Precision Temperature Sensor , Humidity Sensor and Arduino, so you can hookup on your future projects. The circuit will send serial information about the temperature and humidity so you can use on your computer. I have taken data..... Listed under: [Projects](#), [Temperature Measurement Projects](#)
- 
724.  [Marble Disorder – a marble maze simulator with tilt switches using Arduino](#) Marble Disorder is a borderline case of Marble Madness 😊 It simulates a marble maze by sensing the box's orientation with 2 tilt switches. Stop the press: there's a new and more intuitive version that doesn't require the spin knob (See video). I keep documenting the original..... Listed under: [Game – Entertainment Projects](#), [Projects](#)
- 
725.  [Turing Alarm for Arduino](#) NOTE: This Instructable is currently incomplete. I will finish it before September 19. I started this project after seeing Nick Johnson's Turing Alarm clock. I found that the PIC chip he used was a little too advanced for me, so I decided to use the..... Listed under: [Projects](#), [Security – Safety Projects](#)
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726.  [Arduino Electronic Dice using random numbers](#) This instructable will show you how to make an electronic dice with minimal experience using 7 LEDs, resistors, jumper wires, and of course the arduino (or arduino clone). I wrote this instructable for anyone to easily follow along and learn more about the arduino. Questions..... Listed under: [Development Board – Kits Projects](#), [Projects](#)
- 
727.  [LED Hat Display with Pong using an Arduino](#) A while ago, as my first microcontroller project, I made a Pong game on a 5x7 LED display, but then nothing became of it. Recently I was given a hard hat as part of a uniform (for an engineering competition) and told to customize it..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#), [Projects](#)
- 
728.  [Temperature Control For Kitchen Appliances using Arduino](#) In this Instructable, I will step through controlling the temperature of most kitchen appliances. As an example, I will use an old Westbend Poppery popcorn maker (aka. coffee roaster), but these same techniques will be applicable to most hot plates, coffee makers, and waffle irons..... Listed under: [Home Automation Projects](#), [Projects](#), [Temperature Measurement Projects](#)
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729.  [Arduino Binary Alarm Clock](#) This Instructable will show you how to build an binary alarm clock, with a touch sensor snooze button. This is my first instructable and my first real arduino project, I hope you like it! I bought an arduino a while back and I think it's..... Listed under: [Clock – Timer Projects](#), [Projects](#)
- 
730.  [Build An RFID Door Lock Using Arduino](#) I wanted to make an easy and secure way to enter my garage. RFID was the best way to unlock my door, even with my hands full I can unlock the door and push it open! I built a simple circuit with a basic ATmega..... Listed under: [Home Automation Projects](#), [Projects](#), [RFID - NFC projects](#), [Security – Safety Projects](#)
- 
731.  [Wireless Altoids Display using an Arduino](#) This Instructable will show you how to modify an Altoids tin for a wireless 2x16 character display. Using an Altoids tin was inspired by the need to have a small yet protective enclosure for a pair of Xbee modules recently bought from Sparkfun. I purchased the..... Listed under: [LCD Projects](#), [Projects](#)
- 
732.  [Fun Sun-tracking Arduino](#) The Just-For-Fun Sun-tracker using the Arduino and two servos. This device, along the lines of the most useless toy, is not so much for function as it is for fun. But as with many things, you can't spell function..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)
- 
733.  [Reaction Time Tester using an Arduino](#) A month ago I knew nothing about Arduino and now.....my first project! Looking back, this project combines allmost all of the tutorials that I have read in this short period: blinking LED, push button, piezo and LCD display. A useful project for every beginner! I..... Listed under: [Clock – Timer Projects](#), [Projects](#)
- 
734.  [Kid's Game to Arduino Enigma Machine](#) The technology behind Enigma machines and the work done to crack them has influenced cryptography, cryptanalysis, and computer science in general. If you're unfamiliar with Enigma machines, it's a device that was developed near the end of World War I, then used extensively by the..... Listed under: [Game – Entertainment Projects](#), [Projects](#)
- 
735.  [DIY Arduino or The DIY-Duino](#) THIS ENTIRE TUTORIAL IS ALSO AVAILABLE ON MY WEBSITE AT <http://www.theparsley.com/arduino/diy/> To quote the Arduino website: "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."..... Listed under: [How To – DIY – Projects](#), [Projects](#)

736.  [Steering Wheel Drive R/C Car with Arduino](#) IP Control Car was launched in 2001. I make the similar function car utilizing commercialized products. The concept of Car No.02 is to utilize commercialized products, and I am an amateur in electrical. So, do not blame me that the system is not sophisticated, i.e..... Listed under: [Car Projects](#), [Projects](#), [Robotics – Automation Projects](#)
737.  [Make A Digital Clock From Scratch using arduino](#) In some point in the life of every electronics hobbyist the need to make a clock is borned, in my case it was about a month after I soldered my first part on a board, but back then I didn't have the right tools, parts..... Listed under: [Clock – Timer Projects](#), [Projects](#)
738.  [Arduino Processing Audio Spectrum Analyzer](#) In this Instructable I am going to show how to make a program in Processing that analyzes sound on your computer and sends data to an Arduino that controls an LED matrix to show the spectrum analysis. I will be explaining where to get materials,..... Listed under: [LED Projects](#), [Projects](#), [Sound – Audio Projects](#)
739.  [Plantduino Greenhouse using an Arduino](#) This summer I wanted to combine my two loves of plant science and engineering. Thus I am constructing my very own greenhouse in my backyard. I am an undergrad, and as any former student knows, this means I move around constantly, and I am not..... Listed under: [Home Automation Projects](#), [Projects](#)
740.  [Arduino Solar Tracker](#) What is does: It searches for the brightest light source like the sun. Step 1: How it works How it works: I'd made a sensor of 4 LDRs with sheets between them The white strips are the LDRs When the stick on top is..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)
741.  [Tyco RC Arduino Robot](#) Wanted to make your own robot but couldn't afford the fancy H-Bridge IC's or etch your own PCB? Want a quick and dirty method of making your own wheeled robot? Then you're in luck, but if you want to make your own wheeled robot AND..... Listed under: [Projects](#), [Robotics – Automation Projects](#)
742.  [My Arduino WordClock](#) The initial project, and certainly the one to which many were inspired is that of Doug Jackson. <http://www.instructables.com/id/The-Word-Clock-Arduino-version/> also inspired by <http://www.highonsolder.com/blog/2011/1/8/arduino-word-clock.html> <http://www.instructables.com/id/Sleek-word-clock/> Step 1: The Materials The list of materials for the board depends on how you plan to make the electronics, if you..... Listed under: [Clock – Timer Projects](#), [Projects](#)
743.  [Chicken Light Timer using an Arduino](#) The wife is into raising chickens and now that the daylight savings is getting near she wanted a way to keep the egg laying production in high gear. According to the material that she reads, chickens will maintain their egg laying production if they get..... Listed under: [Clock – Timer Projects](#), [CNC Machines Projects](#), [Projects](#)
744.  [Ultrasonic Range Finder with an ATtiny85 using an Arduino](#) I'm here to show you how to use a HC-SR04 Ultrasonic Range Finder with an ATtiny85 as well as programming the ATtiny85 using the wonderful shield that randofo created. List of materials: ATtiny85 Programming Library Arduino Uno HC-SR04 Ultrasonic Range Finder and Library Jumper Wires Breadboard ATtiny85 Step 1: Program..... Listed under: [Metering – Instrument Projects](#), [Projects](#)
745.  [Auto Leveling Laser Cross using Arduino](#) So this Lazy Old Geek purchased a Laser Cross. I created a manual leveling Laser Cross to use for aligning stuff on my drill press: <http://www.instructables.com/id/ManualLevelingLaserCross/> Well, being a Geek I decided to make an automated platform that adjusts automatically with an Arduino. Well, the..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)
746.  [Arduino 2-axis servo solar tracker](#) What is a solar tracker? A solar tracker can increase the efficiency of a solar panel by up to 100%! It does this by always keeping the panel perpendicular to the incoming rays of sunlight. here's an equation to prove this:  $P = AW \sin$ ..... Listed under: [Sensor – Transducer – Detector Projects](#)
747.  [Arduino True Random Number Generator](#) This is just a fun project I have been working on in the last little while. If you like this instructable, consider voting for it in the Arduino Challenge! Anyone who has experience with programming will have probably used random numbers in their code. These random..... Listed under: [Calculator Projects](#), [Projects](#)
748.  [Bubble Alarm Clock Makes Waking Up Fun using Arduino](#) Waking up to a buzzing alarm clock sucks. I'm one of those people who doesn't like to wake up before the sun is out (or has been out for many hours). So what better way to make waking up fun than having a bubble party..... Listed under: [Clock – Timer Projects](#), [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)
749.  [Uno The Arduino Robot](#) Age: 13 Meet Uno the Arduino powered robot. Some functions include a blinking nose, moving antennas, rotating head, IR distance sensor, twin motor gear box and rotation counters. Uno is made with relatively easy to obtain parts. This project provides a good introduction to Arduino. robot.skp475 KB Step 1: Materials Material and tools • Foam board..... Listed under: [Projects](#), [Robotics – Automation Projects](#)
750. [Arduino Based Auto Timer](#) The Need: Last week around at work I had another usual un-usual problem to face with. Having to make lots of mechanisms n components to work with-in seconds or fracs at times I kind-of knew this was always coming. And invariably so my poor..... Listed under: [Clock – Timer Projects](#), [Projects](#)



751.  [Carduino- A simple Arduino robotics platform with its own library](#) This is, as the title says, an Arduino-based robotics platform, with its own library. The "standard" model comes with two back motors, two omni-wheels in the front, and a distance sensor mounted on the front. It also has breadboard space on top for adding whatever..... Listed under: [Projects](#), [Robotics – Automation Projects](#)
752.  [Building a semi Smart, DIY boat with Arduino and some other sensors](#) I based this off of this really nice instructables.com post for building a water bottle boat, with some additions for obstacle avoidance and light-guided control. I used Arduino as a microcontroller, an ultrasonic sensor in the front, a few simple switches on the side of the boat,..... Listed under: [Game – Entertainment Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)
753.  [Remote controlled webcam using Arduino](#) Web-enable your interactive sensors over desktop, smartphone and tablet devices. This tutorial describes in detail how to use the free SensorMonkey service to remotely control a pan and tilt webcam attached to an Arduino using nothing more than a simple webpage. The webpage can be..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#), [Video – Camera – Imaging Projects](#)
754.  [Bike Speedometer using an Arduino](#) Monitor your road speed using the Arduino. This project uses a magnetic switch (also called a reed switch) to measure the speed of one of the bike's wheels. The Arduino calculates the mph, and send this information out to the LCD screen on the handlebars..... Listed under: [Metering – Instrument Projects](#), [Projects](#)
755.  [Waveform Generator using an Arduino](#) Waveform generators (also called function generators) are useful for testing and debugging circuits. I often use them to test the frequency response of electronics components like op amp and sensors. This waveform generator is powered by an Arduino. It outputs four waveshapes: sine, triangle, pulse,..... Listed under: [Metering – Instrument Projects](#), [Projects](#)
756.  [LED Matrix with Game Controller using an Arduino](#) This project was built for my introductory electronics class at the University of Waterloo in Canada. This was my first introduction to electronics and therefore, my first project. Follow these steps to build a 16 x 16 LED array with a wall (different colored LED..... Listed under: [LED Projects](#), [Projects](#)
757.  [Sous-vide Arduino Shield](#) \*NOTE\* THIS PROJECT IS DONE BY A GROUP OF STUDENTS FROM SINGAPORE POLYTECHNIC Sous-vide (/suË Ē viË d/; French for "under vacuum")[1] is a method of cooking food sealed in airtight plastic bags in a water bath for a long time—72 hours in some cases—at an accurately determined..... Listed under: [LCD Projects](#), [Projects](#)
758.  [Audio Output using an Arduino](#) Generate sound or output analog voltages with an Arduino. This Instructable will show you how to set up a really basic digital to analog converter so you can start generating analog waves of all shapes and sizes from a few digital pins on an Arduino..... Listed under: [Projects](#), [Sound – Audio Projects](#)
759.  [Audio Input using an Arduino Board](#) Send sound into your Arduino. This Instructable will show you how to prepare audio so that it can be sampled and processed by an Arduino to make sound responsive projects and audio effects. (This article is a companion to another Instructable I've written about building..... Listed under: [Projects](#), [Sound – Audio Projects](#)
760.  [DIY Arduino Motor Shield](#) Today, I'm going to show you how to make an Arduino motor shield (driver) at a low cost. It works splendidly, its 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](#), [Projects](#)
761.  [Arduino Board 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: [How To – DIY – Projects](#), [Projects](#)
762.  [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](#), [Projects](#)
763.  [GSM GPS shield for Arduino Board](#) Shield for Arduino designed and based on the module GSM/GPRS SIM900 or the GSM/GPRS & GPS module SIM908, to make calls, voice and data connections via GPRS. HARDWARE INNOVATIONS This new version (old Arduino GSM shield) has several new hardware features, that allow maximum customization..... Listed under: [GPS Based Projects](#), [Phone Projects](#), [Projects](#)
764.  [Easy Bluetooth Enabled Door Lock With Arduino + Android](#) Thanks to everyone who supported this project and voted for it in the Arduino Challenge! I was awarded second prize and hope to participate in more Arduino contests in the near future. This tutorial will explain a simple way to make a password protected bluetooth..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)
765.  [Beginners guide to building Arduino robots with Bluetooth and Android](#) In this tutorial we are going to go over building a Arduino robot that can be controlled via bluetooth with an Android phone/tablet. This is a beginners guide that is going to briefly go over the process of wiring and programming your robot. Build list... The following is the list..... Listed under: [Arduino Android](#)

766.



[LINUSBot – Line Follower Robot using Arduino](#) The operation of this Robot is quite simple. Infra-red sensors placed at the front of the chassis will monitor when our Robot is over a black line or when it is over a white background. In this project we will use the appropriate rounded chassis..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

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