

15-110 Recitation Week 12

Reminders

- Check 6-1 due TOMORROW at noon
- Check 6-2 due Friday, April 18 at noon
- Full HW6 due the last day of classes (Friday, April 25) – no revisions
- [Recitation feedback form](#)

Overview

- MVC Review
- Simulations: Code Writing
- Debugging Practice
- HW6 Check-ins

Problems

MVC Review + Simulation

Match the simulation part to its definition

Model	Repeatedly displays current state of the model
View	Updates components to make changes in the simulation
Controller	Stores the core components and rules of our simulation

Consider this setup that draws a circle and a box:

```
def makeModel(data):
    # Initialize the box dimensions and position
    data["bx"] = 150
    data["by"] = 150
    data["bwidth"] = 200
    data["bheight"] = 200

    # Initialize the circle
    data["cx"] = 250
    data["cy"] = 250
    data["radius"] = 30
    data["color"] = "purple"

def makeView(data, canvas):
    # Draw the box
    canvas.create_rectangle(data["bx"], data["by"],
                           data["bx"] + data["bwidth"],
                           data["by"] + data["bheight"],
                           outline="black")

    # Draw the circle
    canvas.create_oval(data["cx"] - data["radius"],
                      data["cy"] - data["radius"],
                      data["cx"] + data["radius"],
                      data["cy"] + data["radius"],
                      fill=data["color"])
```

Write the runRules function such that a new random circle (random x and y) is drawn on the 500 x 500 canvas every 300 ms. If the circle's center is within the box, then its color should be purple. If it is not in the box then it should be blue (don't worry about the timer, that is done for you).



Debugging Large Projects

Reference the starter code. There are 2 errors spread out in the debugging section—can you find them?

Note: Remember some of the strategies that we have practiced for debugging! You can try adding print statements, talking through the logic with a classmate, and testing a variety of different inputs.

Bug 1:

Bug 2: