

CSC 111:

Intro to Computer Science through Programming

Spring 2017
Prof. Sara Mathieson



Admin

- + Homework 9 is due April 18 (last homework)
- + Final project is due May 2
- + Remaining graded labs: Lab 9, Lab 10, Lab 11
- + Labs on last two days of classes: practice final
- + **Thursday office hours: 10am-12pm in Ford 015**

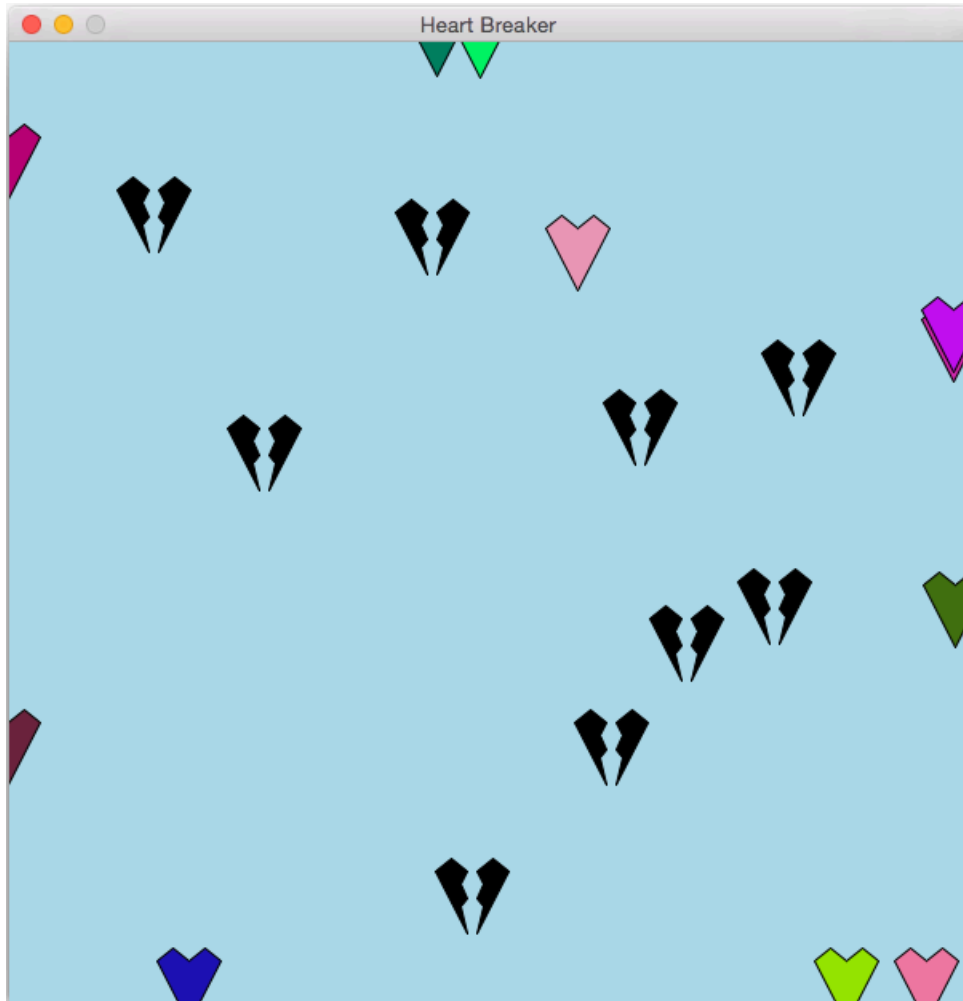
Outline: 4/12

- + Few more examples
- + Continue classes (**Car** class example)
- + Preview Homework 9
- + Friday: review day on **while loops, files, and dictionaries**

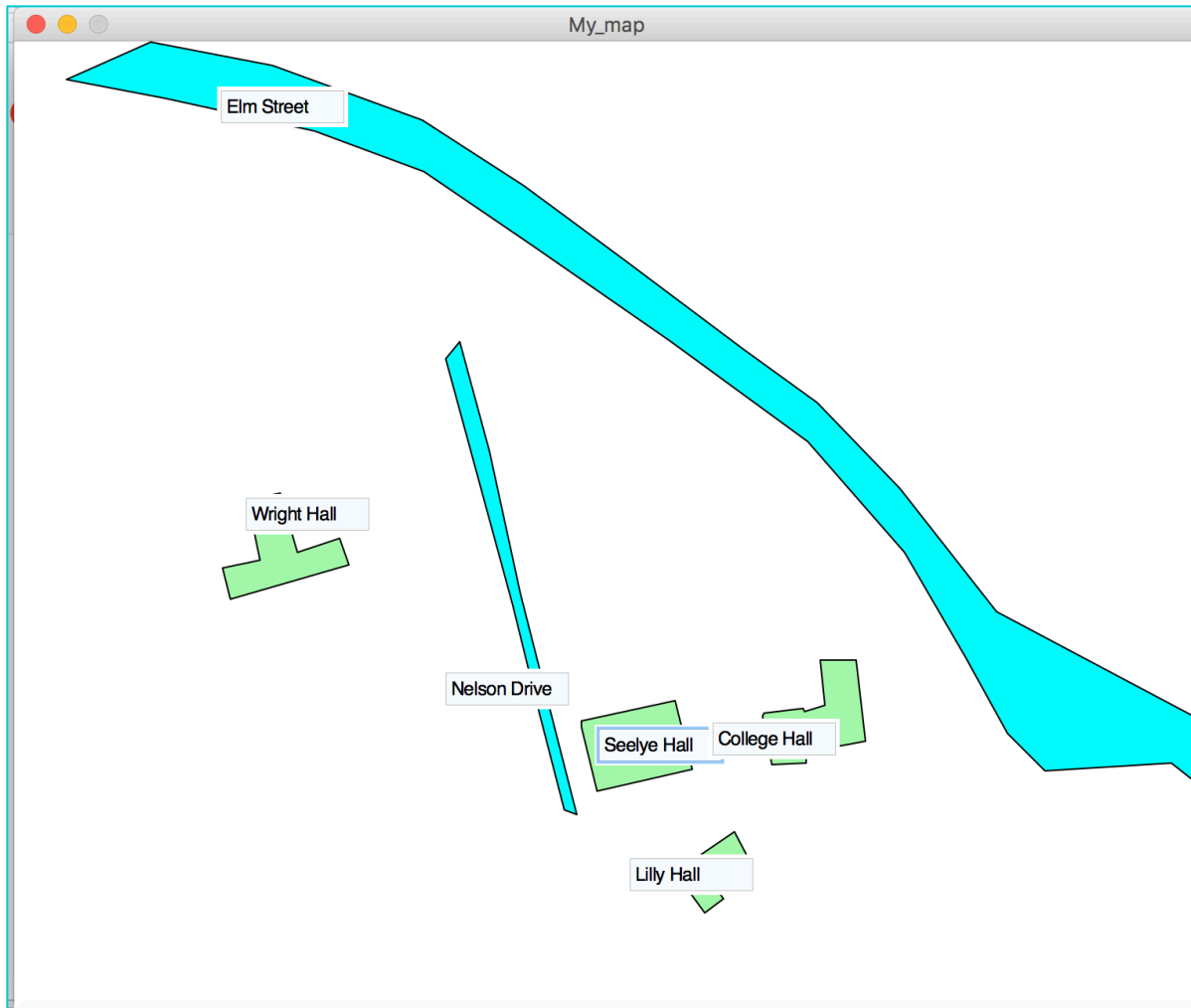
Few more examples

(+ schedule in Python)

Homework 7 from Gaea: "Heart Breaker"



Homework 8 from Bushra



Homework 8 from Chelsey



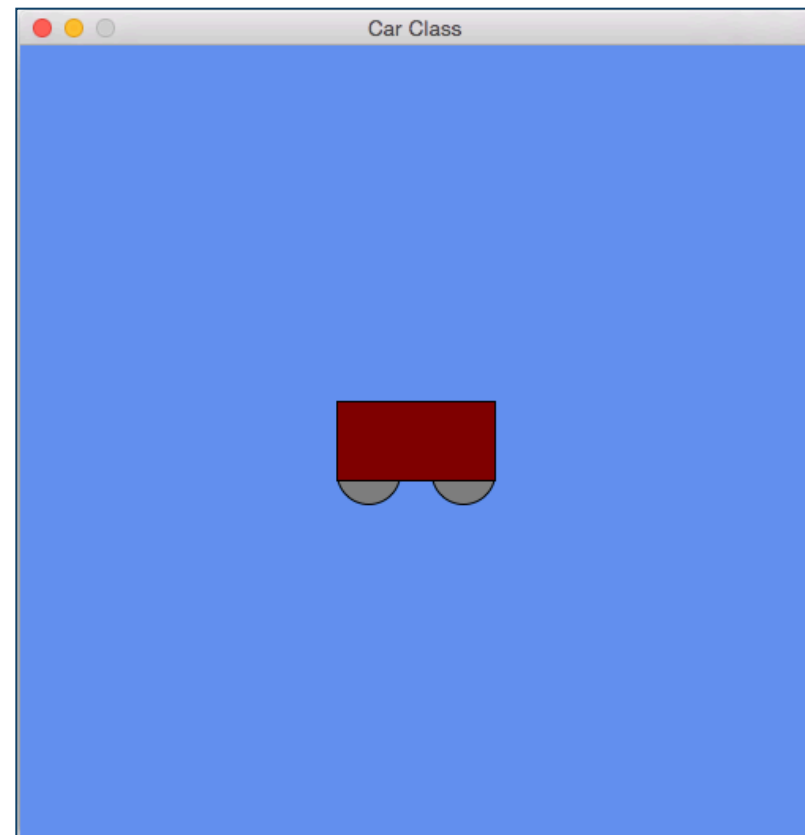
Continue Classes:

Car class

Class example in Graphics: Car

Function to draw a car:

```
def draw_car(window, x, y):  
  
    p1 = Point(x-50, y-25)  
    p2 = Point(x+50, y+25)  
    body = Rectangle(p1, p2)  
  
    pf = Point(x-30, y+20)  
    front = Circle(pf, 20)  
    pb = Point(x+30, y+20)  
    back = Circle(pb, 20)  
  
    body.setFill('maroon')  
    front.setFill('gray')  
    back.setFill('gray')  
  
    front.draw(window)  
    back.draw(window)  
    body.draw(window)
```



Goal: turn this function into a class

- 1) Start from `car_class.py` on the website
- 2) Create a class `Car`, and move all the code inside `draw_car(..)` into the `Car` constructor
- 3) Separate out some of this code into a `draw(..)` method
- 4) Throughout (2) and (3), think about what *instance variables* you'll need in this class
- 5) Create a `move_to(p)` method inside the `Car` class that will move the car to the given `Point p`
- 6) When the user clicks, move the car to that point

Preview Homework 9

Homework 9, swimming fish

+ Main function outline (from Joe O'Rourke)

```
def main():  
    # construct the graphics window  
  
    # choose a num_fish (optional: obtain from user)  
  
    # for loop to create fish  
    for i in range(num_fish):  
        # call Fish constructor  
        fish = Fish(...)  
  
        # add fish to list  
        fish_lst.append(fish)  
  
    # animation loop  
    while keep_swimming:  
  
        # if the user clicks anywhere, stop  
        if win.checkMouse() != None:  
            # change keep_swimming  
  
        # loop over the fish  
        for ... in ...:  
            fish.move(...)
```