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
Main function outline (from Joe O’Rourke)

```python
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(...)
```