

# Announcements

## ▶ Homework

- ▶ Homework 10 due tonight! Last HW! Celebrate! :)
- ▶ You are going to start getting a bunch of graded things back this weekend. I'm almost through my backlog in my other classes. Soooo sorry for the delay. :(

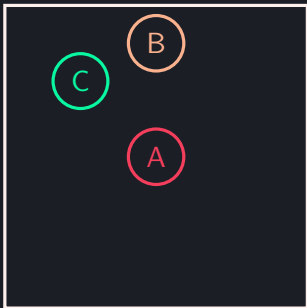
## ▶ Projects

- ▶ Should have gotten an email (and it is posted on Campuswire) for a poll about the final project
- ▶ We'll talk more about them today in class

## ▶ Polling: `rembold-class.ddns.net`

# Review Question

Suppose I ran the class to the right, created an instance of it, and then pressed the followed keys: w, w, a, s, w. Which location below would show where the circle was at the end?



D: An error would occur

```
import arcade

class A(arcade.Window):
    def __init__(self):
        arcade.Window.__init__(100,100,'')
        self.x = 50
        self.y = 50
        self.r = 10

    def on_draw(self):
        arcade.start_render()
        arcade.draw_circle_filled(
            self.x,
            self.y,
            self.r,
            arcade.color.RED)

    def on_key_press(key, modifier):
        if key == arcade.key.W:
            self.y += 10
        elif key == arcade.key.A:
            self.x -= 10
```

: D

# Projects

- ▶ Mostly groups of 2 or 3, which I will be creating and sending out
  - ▶ Care about your group members, let me know in the poll!
- ▶ Projects are pretty much open to whatever you want or are interested in! I am happy to help with ideas if you like.
- ▶ Will do a 10 min + question presentation/video on the project on our last day of classes
  - ▶ Can do live or prerecord if timezones make things difficult
  - ▶ Should include:
    - ▶ What your project was
    - ▶ How you approached it and divided up the problem
    - ▶ Who worked on what parts
    - ▶ How it came together and works
    - ▶ A demo or screencapture of it working would be nice!
- ▶ Code will be submitted to Github, but besides the presentation and code no other “output” is necessary.

# Timeline

- ▶ Campuswire and Github groups will be made for each grouping
- ▶ Monday's class will focus on planning a project and collaborative coding
- ▶ No class on Wednesday due to SSRD
- ▶ Friday we play Digital Dodgeball
- ▶ All classes and labs the following week are just set aside for working on the projects, meeting with your group members, or asking me questions

# Refactoring Arcade Code for Flexibility

- ▶ When things start getting too complicated in one function or class, it may be time to break some of that logic out to another class/function!
- ▶ A good candidate can be breaking an “object” you are drawing to the screen out into its own class.
  - ▶ Will still probably need to provide drawing and update methods for that class.

# Working with Sprites

- ▶ We've played around a bit before with adding Sprites (images) to the screen
- ▶ By adding them to a `arcade.SpriteList` we get an efficient and easy way to:
  - ▶ Draw everything on the list to the screen
  - ▶ Update the positions of everything in the list
  - ▶ Check such things as collisions between objects in different lists
  - ▶ Set up basic physics between different types of objects

# Ah yeah Physics

- ▶ You can always set up your own movement systems
- ▶ Platformers tend to be a bit more tricky since you have to check for collisions with the terrain to know when to stand on something
- ▶ Arcade has a simple physics engine you can use for this
  - ▶ You give it the things you can the physics to act on,
  - ▶ The solid land or terrain you want to be impassable,
  - ▶ and a strength of gravity
- ▶ Don't forget to update the physics engine then in `on_update`!