

Announcements

- ▶ Grading
 - ▶ Plugging away. Hoping to have the midterm projects finished by the end of the weekend
 - ▶ I'll post an updated grade report as soon as I finish those.
- ▶ No class next week! Just working on your projects!
- ▶ I'll post links each class day where you can find me to ask questions if you need help or advice
- ▶ Polling: `rembold-class.ddns.net`

Group Project Info

- ▶ Emails with group assignments should have gone out. Start thinking through and talking what you want to create as a group!
- ▶ Still working on getting the shared repositories made. Will be trying to get that done during “lab” today
- ▶ Let me know if you are looking for ideas or want to bounce some ideas off me!
- ▶ If you are trying to judge if there is enough content in your project, a rough rule of thumb would be to ask yourself if there is between 1-2 homework assignments worth of work for each group member
- ▶ Try to aim to have your idea for your project mapped out by the end of the weekend (and maybe let me know what it is)

Polling Question

Where are groups generally at with respect to planning?

- A) We have met and talked about some ideas, but not settled on something
- B) We have generally come to a consensus about what we want to do
- C) We haven't gotten a chance to get together and discuss yet
- D) We have group projects?

Getting started with Digital Dodgeball

- ▶ Can get materials at:
<https://github.com/jrembold/WUPhys-CodeComp/archive/release.zip>
- ▶ Documentation at:
<https://jrembold.github.io/WUPhys-CodeComp/documentation/>

General Description

- ▶ A simultaneous turn-based game of dodgeball
- ▶ You write a **script** to control your player. You have no direct control.
- ▶ Only 5 possible moves to make each round, and you can only do 1
- ▶ You will receive a new batch of information each round about what your player can “see” to base your next rounds move off of

The Pieces

- ▶ The Server
 - ▶ What actually runs the game
 - ▶ All code here is written already, you just need to run it to play a game
- ▶ The Visualizer
 - ▶ Visualizes the game so you can see what happened (or what went wrong)
 - ▶ Has both Matplotlib and Tkinter interfaces
 - ▶ Shown by default upon conclusion of any server game
- ▶ The player script(s)
 - ▶ The part you actually write!
 - ▶ Has some boilerplate code that has to be there, but the rest is up to you!

Running a Server

- ▶ Can launch from either a normal terminal window or from within a Python terminal
- ▶ Has several options you can/need to provide, the most important of which is the `-i` flag, after which follows a list of the player scripts you want in the game.

```
python server.py -i RandomMan.py SimpleMan.py
```

or

```
run server.py -i RandomMan.py SimpleMan.py
```

Writing your Player Script

- ▶ Template provided with the necessary basics
- ▶ Always need to send one command to the server each round:
 - ▶ `'forward'`: Go forward one space
 - ▶ `'rotCW'`: Rotate 90 degrees clockwise
 - ▶ `'rotCCW'`: Rotate 90 degrees counter-clockwise
 - ▶ `'ball'`: Throws a dodgeball in the direction the player is facing
 - ▶ `'ping'`: Take a turn to get more info on surroundings
- ▶ Use `bot.sendMessage()` to send the message to the server

Gathering Info

- ▶ Should use `bot.getMapState()` each iteration to get latest intel
- ▶ Map information stored as attributes of bot
 - ▶ `.active`: Has your bot been disqualified?
 - ▶ `.playercount`: How many players are still in the game?
 - ▶ `.ballcount`: How many dodgeballs does your player currently hold?
 - ▶ `.vision`: Looking forwards, a list of what your player “sees”
 - ▶ `.lastping`: Dictionary of all info from most recent ping

What do you see?

- ▶ Numbers correspond to different objects in vision:
 - ▶ 0 - Nothing here. Empty space.
 - ▶ 1 - Wall here. Vision ends at a wall, so you shouldn't see this.
 - ▶ 2 - Active (moving) dodgeball. Decimal indicates direction
 - ▶ 3 - Inactive (fallen) dodgeball.
 - ▶ 50+ - Id for player. Decimal indicates facing direction.
- ▶ Decimals indicate facing/traveling direction:
 - ▶ 0.0 - Facing North
 - ▶ 0.1 - Facing East
 - ▶ 0.2 - Facing South
 - ▶ 0.3 - Facing West

General Tips

- ▶ If you remain in one space for 120 turns (even if you are rotating each turn) you will be disqualified.
- ▶ The map starts to close in slowly and then increasingly rapidly as the game progresses
- ▶ Touching someone in front of you will also disqualify them
- ▶ Players can disqualify each other simultaneously