

Sockets

Brandon

(Credit to Kyle for the slides)



Overview

- Quickly go through slides/learn basic sockets
- Walk through tutorial
- Look at more complex example (my Spring 2016 Hack112 Uno game!)
- Try it out for yourselves!

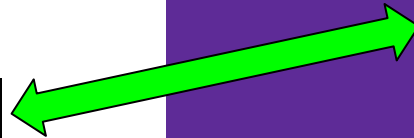
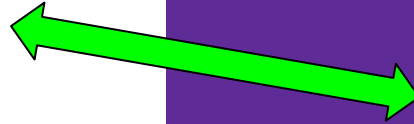
Client

Users, AKA “Bees”



Server

Center of communication, “Queen Bee”



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What is a socket?

- A connection between a client (user) and a server.
- Allows clients to communicate with each other through the server.
- How the internet works!

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SOCKET



SOCKET



SOCKET



Sample Projects

- Asteroids
- Scrabble
- Tanks
- Any game or application!

Roles of the Server

- Listen for, and initiate new clients
- Listen for and receive messages from clients
- Send instructions back to clients

To do all this, we need threading, or doing multiple processes “at the same time”

Roles of the Client

- Send messages (controllers)
- Receive messages (timerFired)

Attendance:

shoutkey.com/fennel

Pitfalls

Coordination

Lots of communication! A typical process looks like:

1. Client does an action
2. Client creates & sends instruction to Server
3. Server receives and processes instruction
4. Server sends instruction to all other clients
5. Clients receive new instruction
6. Clients process and execute instruction

Make sure messages are properly formatted, and contain enough info! Debugging is a Bee-movie boohoo! :’(

Sockets Stream

- Sockets sends messages in bits--and doesn't tell you when one message ends and the next one begins
- :(
- Need to delineate messages with special character

Run From Command Line

Use terminal to simulate multiple computers!

- Navigate to working directory
- Start the server (\$ python3 myServer.py)
- Open up a new terminal window for each client
 - Navigate to working directory
 - Start a client (\$ python3 myClient.py)

Questions?

Gitbook



Code demo