PYTHON MINECRAFT CODER DOJO

December 20, 2014

Class Kickoff

Agenda

1. Introductions

- Mentors
- Students

2. Today's Class

- What are we going to learn?
- How does the class work?

3. Our Programming Environment

- What's running where?
- Getting connected

4. Reference

- Exercises
- Useful URLs

Introductions

- Mentors for today:
  - Mike McCallister
  - Nick LaMuro
  - Curtis Griesel
- Nine students:
  - Name?
  - Grade?
  - Have you done this class before?
- Questions for everyone:
  - What is your programming background?
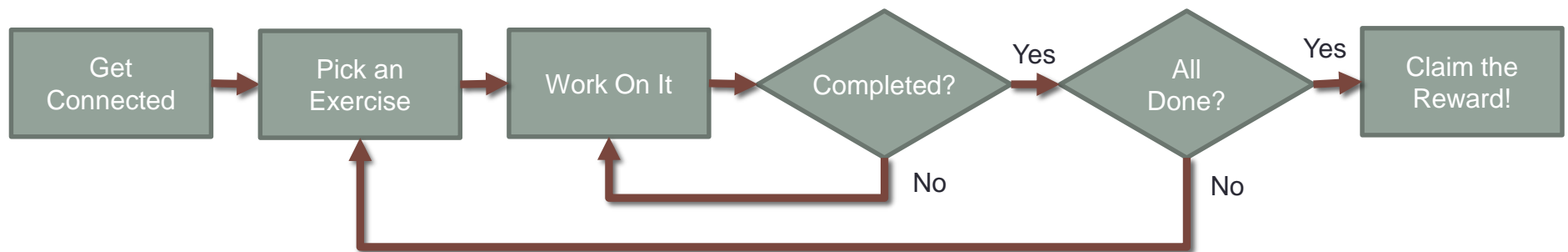 - What do you want to get out of today?

Today's Class

What are we going to learn?

- How to read, write, and run code in IPython
- Basic Python syntax
- How to change the Minecraft world using Python
- How to have the Minecraft world trigger activity in Python
- Anything else you want!

Today's Class

How does the class work?

```
Get          Pick an         Work On It      Completed?   Yes   All        Yes   Claim the
Connected  → Exercise     →              →              →     Done?    →     Reward!
                 ↑              ↑                      No              No
                 └──────────────┘                      │               │
                 └─────────────────────────────────────┘               │
```

Get Connected → Pick an Exercise → Work On It → Completed? —Yes→ All Done? —Yes→ Claim the Reward!
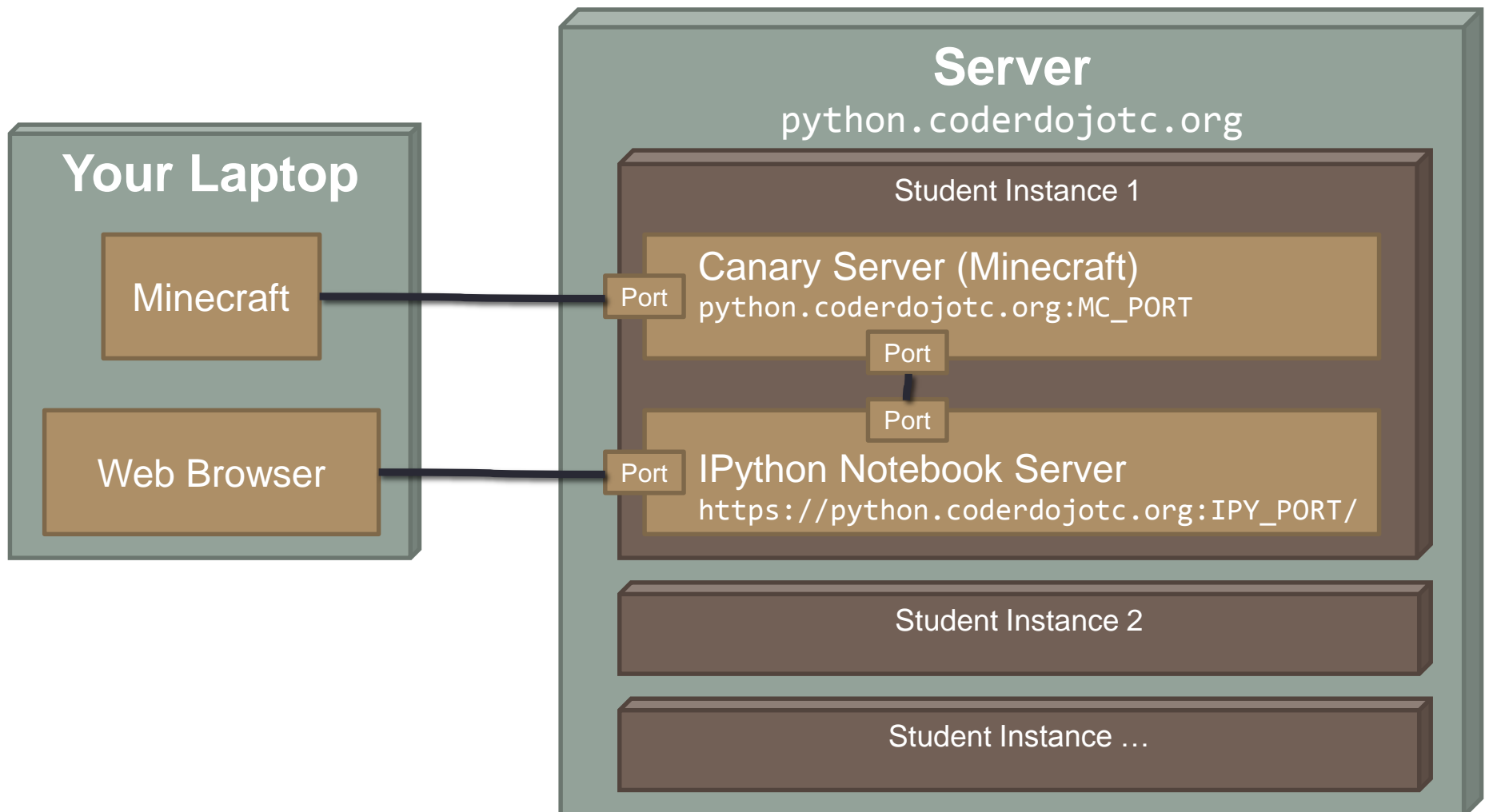
Ground Rules

• The one rule is...

• Be cool by:

  • **Helping each other.** Check with other students before asking a mentor for help. "Ask three, then me."

  • **Learning Python.** Today's focus is on programming, not the game. Remember, this is a Coder Dojo, not a LAN party!

Our Programming Environment

What is running where?

Our Programming Environment

Getting Connected

1. Talk to a Mentor.

   Give your Mojang account name, or get a classroom account

   Get your Connection Card:

Instance	WiFi User	WiFi Password	IPython Address	IPython Password	Minecraft Server
8	cnfr0012	d3adb33f	https://python.coderdojotc.org:18443	b@dc0d3	python.coderdojotc.org:18565

2. Connect your PC to Wi-Fi.

3. Connect to your IPython Notebook session.

4. Connect to your Minecraft server.

5. Test the connection between Python and Minecraft.

Our Programming Environment

Step 2: Connect your PC to Wi-Fi:

- General Wireless Configuration:
  - Connect to the "**UofM Secure**" SSID
  - Choose "**WPA2-Enterprise**" security
  - Choose "**AES**" encryption
  - Use the WiFi User and WiFi Password from your Connection Card

Instance	WiFi User	WiFi Password	IPython Address	IPython Password	Minecraft Server
8	cnfr0012	d3adb33f	https://python.coderdojotc.org:18443	b@dc0d3	python.coderdojotc.org:18565

- Details available at http://it.umn.edu/wifi-setup-guides

Our Programming Environment
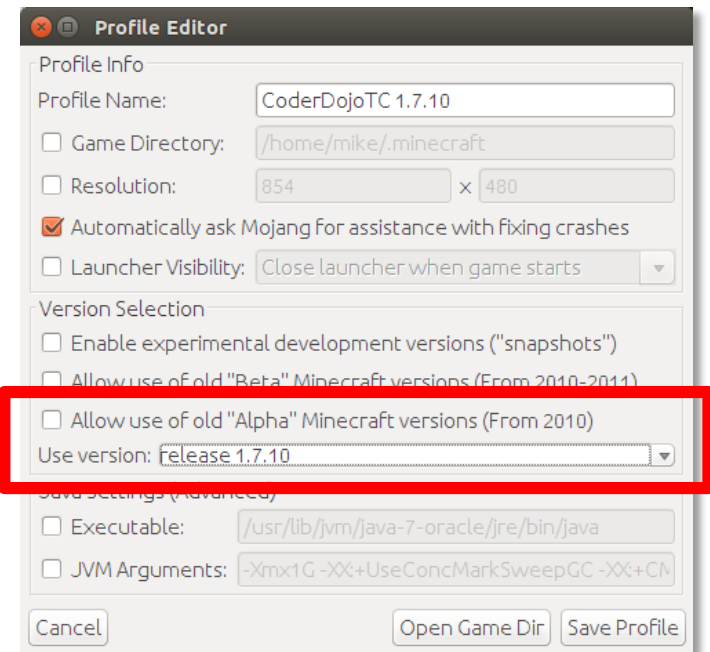
Step 3: Connect to your IPython Notebook session:

- Open your web browser: Chrome, Firefox, or IE 11
- Enter the full URL of the IPython Address, including the "**https**" and the number at the end ("**:18443**" in the example below.
- The browser will probably complain that it doesn't trust the site. Proceed past the warnings.
- Enter the IPython Password when prompted.

Instance	WiFi User	WiFi Password	IPython Address	IPython Password	Minecraft Server
8	cnfr0012	d3adb33f	https://python.coderdojotc.org:18443	b@dc0d3	ython.coderdojotc.org:18565

Our Programming Environment

Step 4: Connect to your Minecraft Server:

- Launch Minecraft on your PC.
  - Create a profile and make sure it uses version **1.7.10** of the game (see right).
- Click "**Play**" to launch the profile.
  - Choose "**Multiplayer**"
  - Then "**Direct Connect**"
  - In the **Server Address** field, enter the Minecraft Server address from your Connection Card, including the port number at the end.
 - Then click "**Join Server**".

Instance	WiFi User	WiFi Password	IPython Address	IPython Password	Minecraft Server
8	cnfr0012	d3adb33f	https://python.coderdojotc.org:18443	b@dc0d3	python.coderdojotc.org:18565

Our Programming Environment

Step 5: Test the connection between Python and Minecraft:

- In IPython, click on "**Exercise 1 – Hello World!**" to open the notebook.

- Choose **Cell → Run All** from the menu.

- In the Minecraft game, look for the "**Hello Minecraft!**" message.
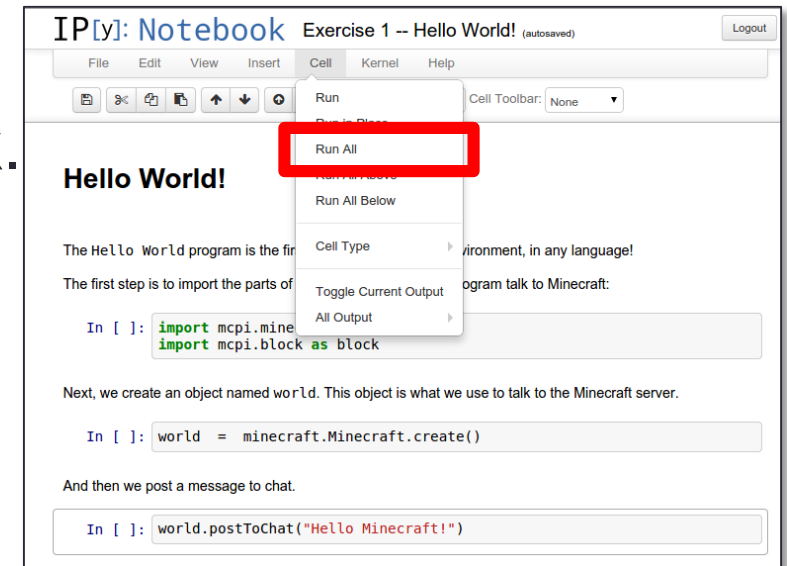
Reference

Exercises

- Exercise 1: Hello World!
- Exercise 2: Getting Started with IPython
- Exercise 3: Basic Python Syntax
- Exercise 4: Change the Minecraft world using Python
- Exercise 5: Minecraft changes trigger activity in Python

Reference

Useful URLs:

- Python docs:
  - Everything you could possibly want to know about Python.
  - https://docs.python.org/2/
- Minecraft PI Worksheet:
  - A simple overview of programming Minecraft with Python.
  - https://docs.google.com/document/d/1gDoaiSKq6OOSk1GditlkGJnt8qdZ119eW67L-UTkFRI/edit?usp=sharing
- Python Minecraft API:
  - A useful summary of all the things possible in the Python Minecraft API.
  - http://www.stuffaboutcode.com/p/minecraft-api-reference.html
- Python cheat sheet:
  - A concise reference for some common Python syntax
  - http://www.cheatography.com/davechild/cheat-sheets/python/