

Minecraft with Python

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Background

I teach computing with Python to elementary school kids (grade 3 - grade 6)

Courses in Scratch, Turtle, Basic Python IDLE usage (lately with IPy Notebook)

My experiments in teaching start with my two boys now 7 and 10 ...

A year back they got into
Minecraft on Xbox

The Minecraft phenomenon is
huge and confusing to first
timers especially parents ...



What is Minecraft ?

Minecraft is ... (<http://minemum.com/>)

Bec Oakley the founder of Minemum provides a much needed guide to parents !

She describes Minecraft as “A world where you dig (mine) and build (craft) different kinds of 3D blocks within a large world of varying terrains and habitats to explore. ”

Minecraft is ... (<http://minemum.com/>)

NUMBER OF PLAYERS	
SINGLEPLAYER Playing the game by yourself, in a Minecraft world that just lives on your computer or console	MULTIPLAYER Playing the game with others on a server - a computer running a Minecraft world that many people can access at once
GAME MODE	
CREATIVE You have an unlimited supply of things you need, you can't die, you don't get hungry... and you can fly	SURVIVAL You need to mine or craft all of the things that you need to stay alive
GAME DIFFICULTY	
PEACEFUL There are no bad guys (hostile mobs), you don't get hungry and it's more difficult to die	EASY / NORMAL / HARD There are bad guys - they're harder to kill and can inflict progressively more damage with each step up in level

Minecraft is ... (<http://minemum.com/>)

Mods - Patches of code that modify the way the original game is played , for e.g. creating new animals or giving a player more powers

Resource Packs - A collection of images and sound files that change the look and feel e.g. making grass look purple

Watchout

Minecraft is NOT only played by kids

- Content and behavior in Multiplayer mode
 - Installing mods for content and malicious software
 - Youtube videos or other
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Enter Python

Harness the opportunity!

Minecraft can be played on Desktop , Mobile, Xbox, Playstation etc . To use with Python we need a setup.

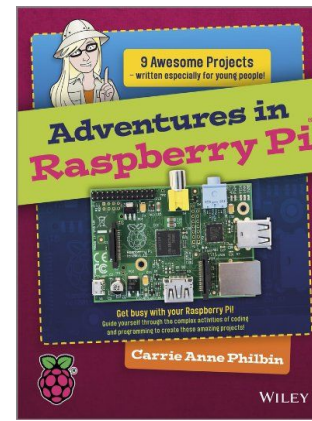
1. Using Raspberry PI - Use Minecraft Pi edition that comes included in the NOOBS software

<https://www.raspberrypi.org/learning/getting-started-with-minecraft-pi/>

2. CoderDojo Twin Cities Guide

- a. Vagrant based local environment
- b. Expand a to a server environment for teaching a larger audience

<http://coderdojotc.readthedocs.io/projects/python-minecraft/en/latest/contents.html>



Using Raspberry PI

Use the nano editor or Python Idle 3 . Python Idle 3 is kid - friendly and allows them to run commands via the editor

The first lesson : <https://www.raspberrypi.org/learning/getting-started-with-minecraft-pi/worksheet/>

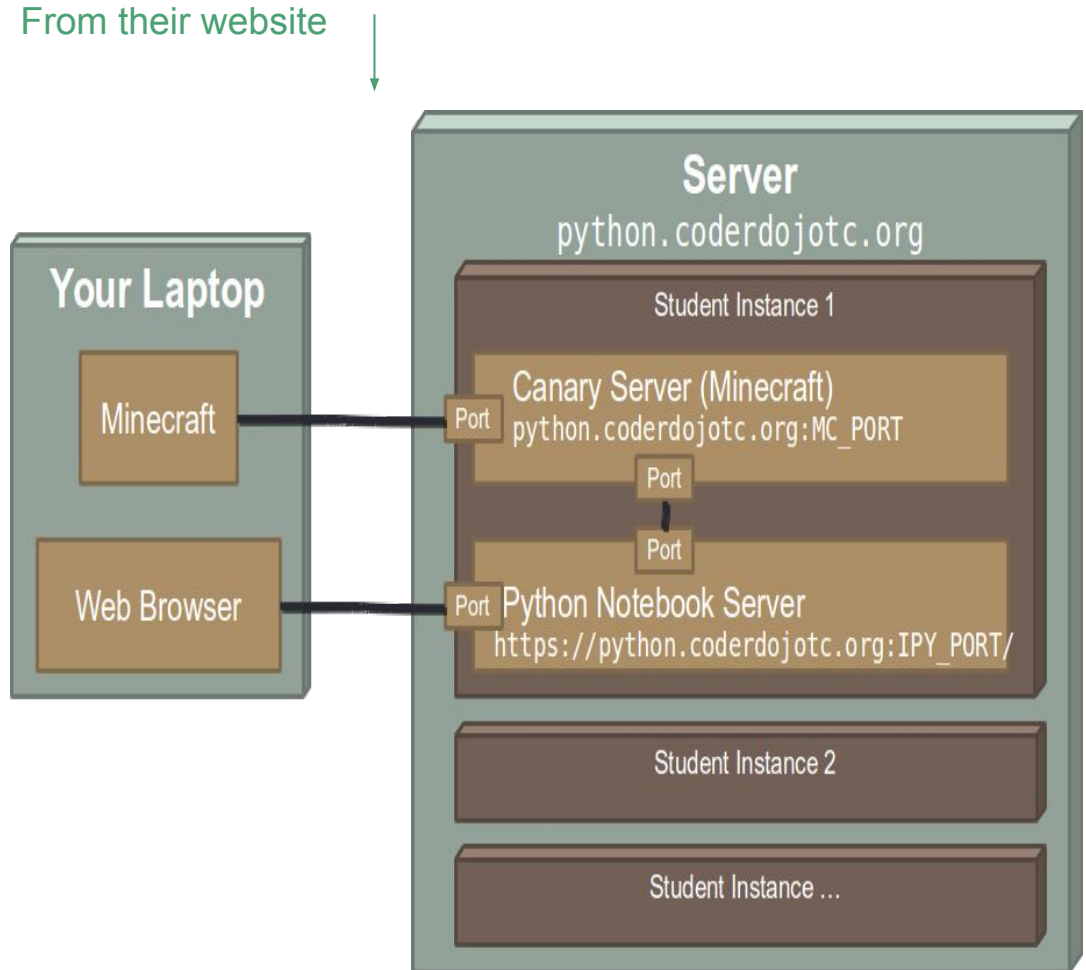
CoderDojoTC

IPy Notebook Server

Minecraft server

Student

- Web browser client
- Minecraft account



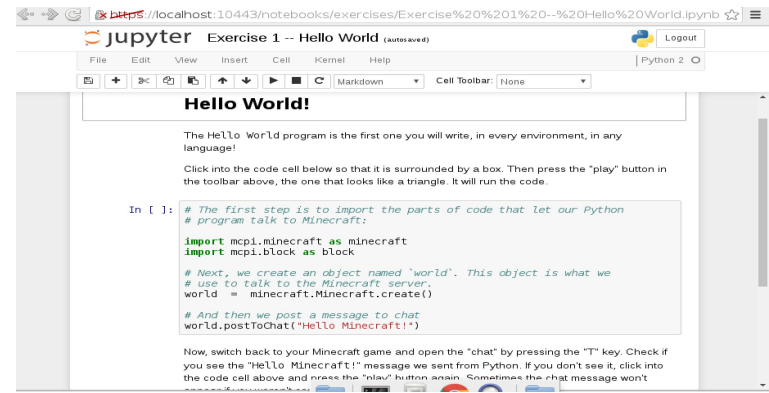
Demo

Set up python-minecraft on a Fedora 23 VM

- <https://192.168.117.132:10443/tree>
- Server - 192.168.117.132:10565

Account on Mojang

Chose multiplayer mode and connect to my server



Next Steps

Get more students - for hosted environment just need a browser and minecraft client installed!

- Set up hosted environment
 - Complete the tutorials from both the resources
 - Expand set of resources , challenges to github etc
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The most important takeaway
is to teach while having fun!