



RICK WARGO - DECEMBER
2017

**LEARN TO PROGRAM IN PYTHON
WITH MINECRAFT AND DOCKER!**



INSPIRATION

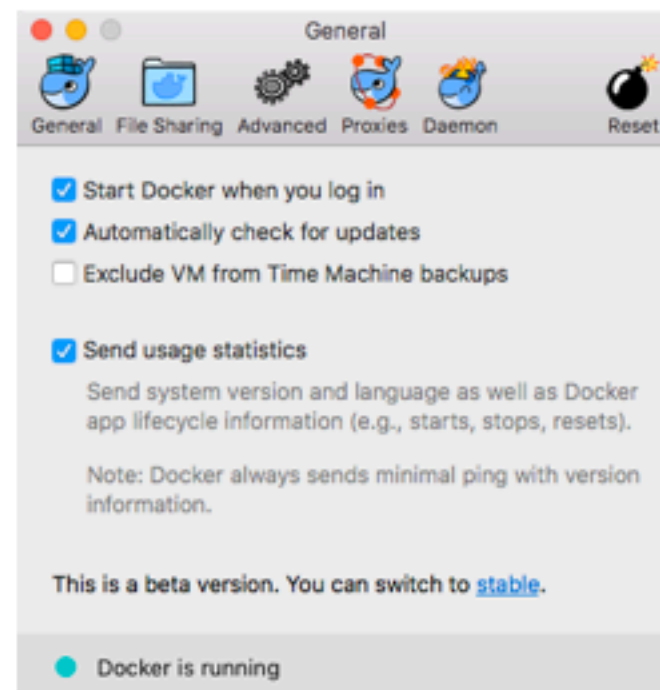
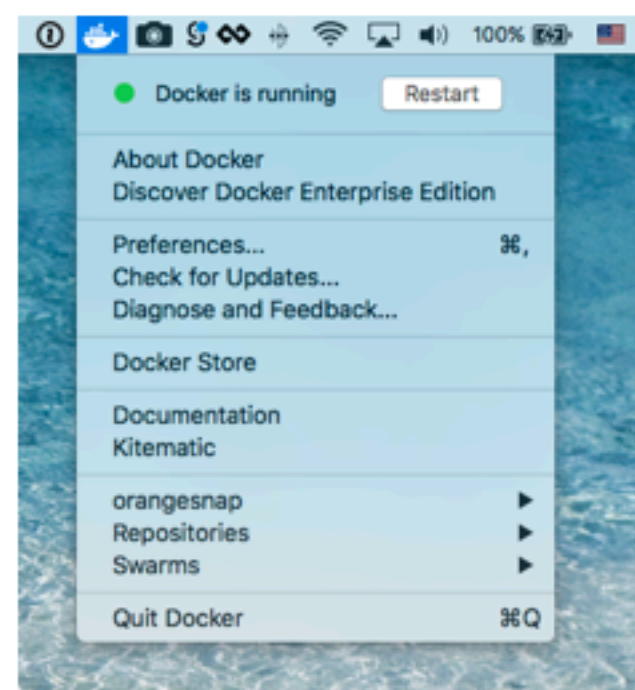
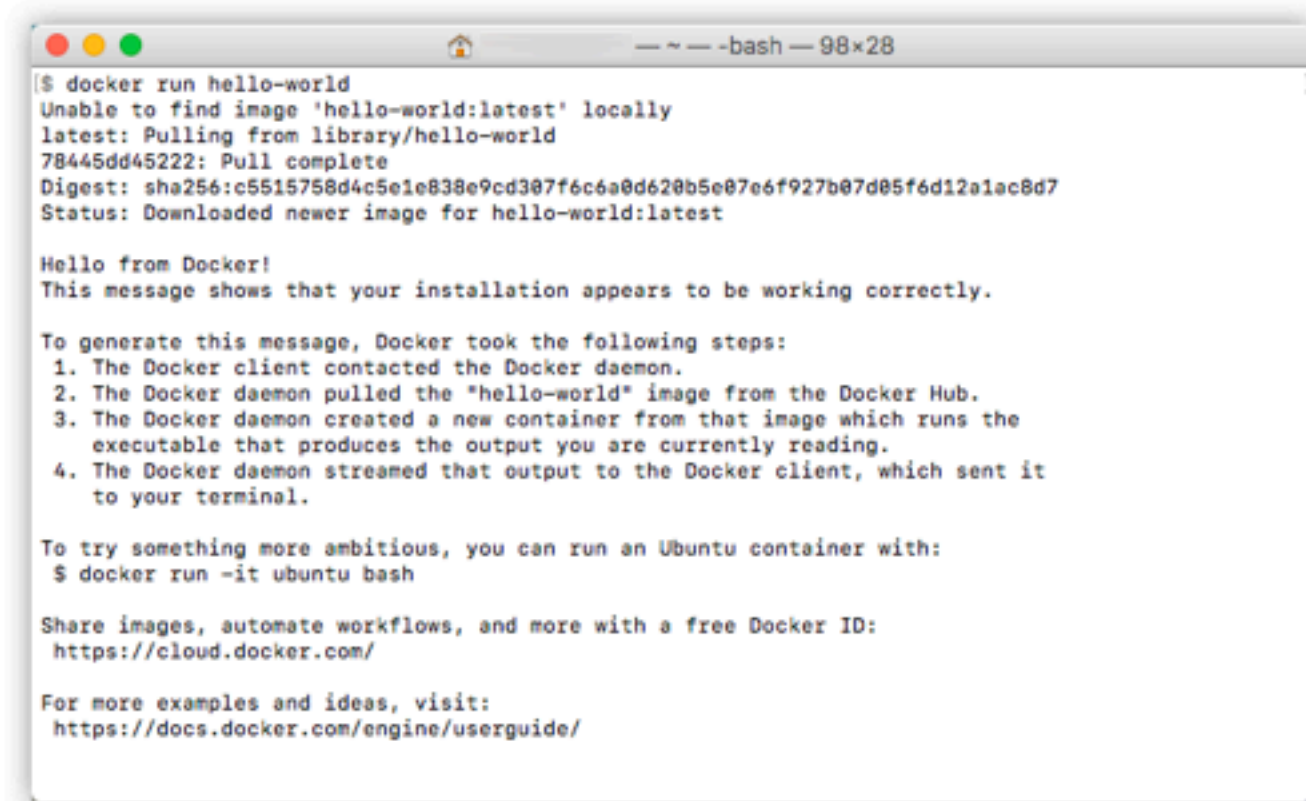
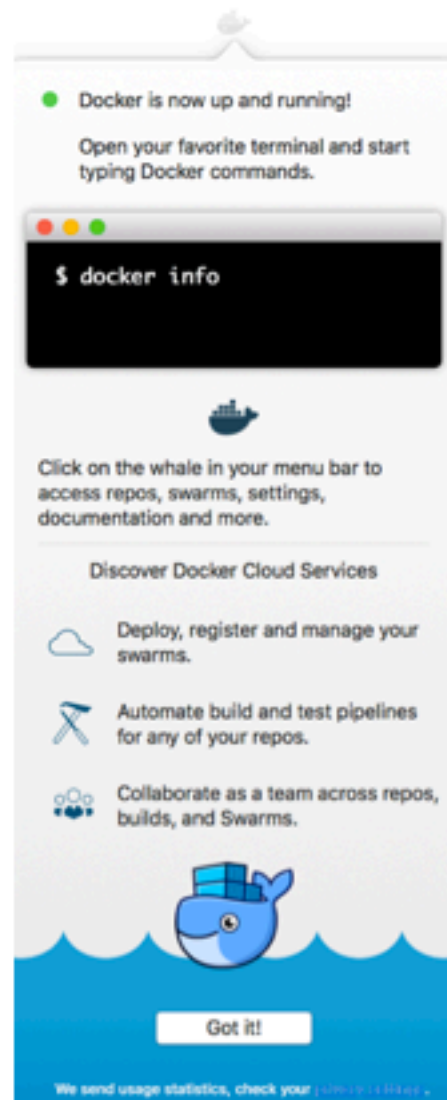
INSTALL PYTHON3 FOR OS X

- ▶ Python3 is not installed by default on OS X.
- ▶ Python 3.x is the present and future of the language. Install it and use it.
- ▶ A great tutorial on installing Python3 can be found at <https://wsvincent.com/install-python3-mac/>
 - ▶ You'll need the Apple Command Line Tools to be installed.
 - ▶ You'll also need Homebrew installed
 - ▶ After installing Xcode and Homebrew, install Python3

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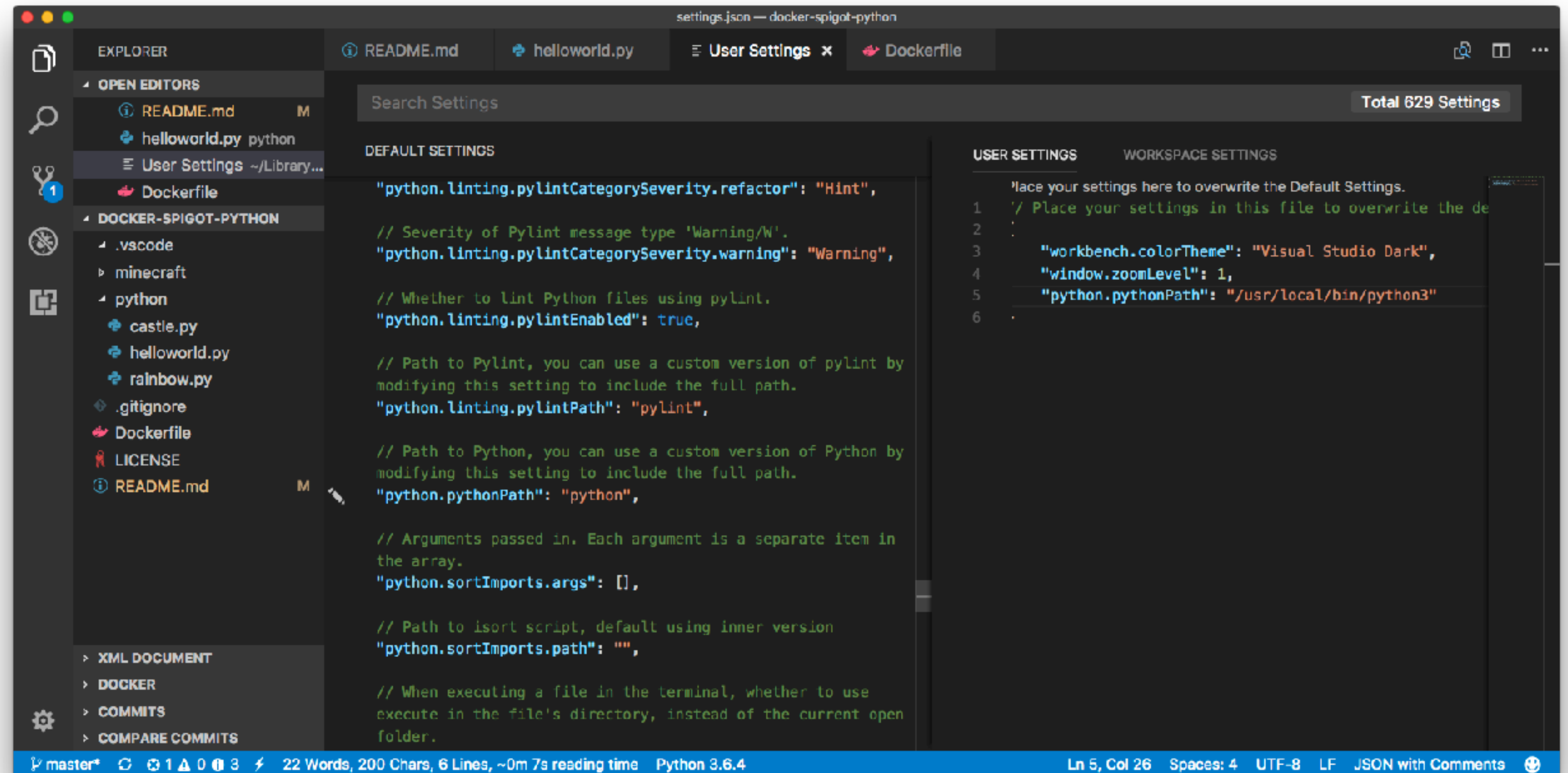
INSTALL DOCKER COMMUNITY EDITION FOR MAC

► <https://store.docker.com/editions/community/docker-ce-desktop-mac>



INSTALL VISUAL STUDIO CODE (OR YOUR PYTHON IDE OF CHOICE)

<https://code.visualstudio.com/>



UPDATE VISUAL STUDIO CODE TO USE PYTHON3

- ▶ From the Code menu select Preferences -> Settings (or press ⌘,))
- ▶ and scroll down to Python Configuration
- ▶ Click the pencil on the left of the configuration you'd like to use and click Copy Settings.
- ▶ Add to the User Settings (see image on previous slide):

```
"python.pythonPath": "/usr/local/bin/python3"
```


GET CODE FROM GITHUB

```
$ git clone https://github.com/rickwargo/docker-spigot-python
Cloning into 'docker-spigot-python'...
remote: Counting objects: 29, done.
remote: Compressing objects: 100% (23/23), done.
remote: Total 29 (delta 8), reused 27 (delta 6), pack-reused 0
Unpacking objects: 100% (29/29), done.
```

```
$ cd docker-spigot-python
```

```
# Install the mcpi library via py3minepi (as root unless virtualenv)
```

```
$ sudo -H pip3 install ./py3minepi
```

```
Processing ./py3minepi
```

```
Installing collected packages: py3minepi
```

```
  Running setup.py install for py3minepi ... done
```

```
Successfully installed py3minepi-0.0.1
```

DOCKER

- ▶ Check out Docker Labs for tutorials on Docker
 - ▶ <https://github.com/docker/labs>
- ▶ In the examples below, replace <DockerId> with your actual Docker ID.
- ▶ To get a new Docker ID, visit: <https://docs.docker.com/docker-id/>

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BUILD YOUR OWN CONTAINER

```
$ docker build -t <DockerId>/docker-spigot-python .
Sending build context to Docker daemon 168.6MB
Step 1/19 : FROM openjdk:8-jre-alpine
8-jre-alpine: Pulling from library/openjdk
2fdfe1cd78c2: Pull complete
82630fd6e5ba: Pull complete
119d364c885d: Pull complete
Digest: sha256:4e719449095035461b66d2cd8826fe9794827c7d4a022b0f70cda54e28b83c18
Status: Downloaded newer image for openjdk:8-jre-alpine
---> a7441b26c41b
Step 2/19 : LABEL maintainer "Rick Wargo <github@epicminds.com>"
---> Running in e17b7d78533b
---> 96c6f8ffca96
Removing intermediate container e17b7d78533b
Step 3/19 : ARG SPIGOT_VER=latest
---> Running in 4da73388d6a6
---> 6dff7e298404
Removing intermediate container 4da73388d6a6
...
Step 19/19 : CMD java -Xms${MC_MINMEM} -Xmx${MC_MAXMEM} -jar /spigot/spigot.jar --plugins /plugins
---> Running in a5fa7ca2d549
---> 3d7e638aeaad
Removing intermediate container a5fa7ca2d549
Successfully built 3d7e638aeaad
Successfully tagged <DockerId>/docker-spigot-python:latest
```

AND SAVE IT TO A DOCKER REPOSITORY FOR LATER USE

```
$ docker push <DockerId>/docker-spigot-python
```

```
The push refers to a repository [docker.io/<DockerId>/docker-spigot-python]
```

```
75d6cae5ea8b: Pushed
```

```
b8f0d235aa6a: Pushed
```

```
05745fe09b9b: Pushed
```

```
289df6415364: Pushed
```

```
9a6151ee78c4: Pushed
```

```
f87c9e926534: Pushed
```

```
25baa3ba1903: Layer already exists
```

```
5b1e27e74327: Layer already exists
```

```
04a094fe844e: Layer already exists
```

```
latest: digest:
```

```
sha256:f13f42def01605ddbe9f493e78b7ded602ededa06f407244d99417a6bc0effbc size: 2197
```


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RUN SPIGOT SERVER FROM DOCKER

```
$ docker run -p 25565:25565 -p 4711:4711 --name spigot -v ~/docker-spigot-python/minecraft:/minecraft <DockerId>/docker-spigot-python
Unable to find image ' <DockerId>/docker-spigot-python:latest' locally
latest: Pulling from <DockerId>/docker-spigot-python
2fdfe1cd78c2: Pull complete
82630fd6e5ba: Pull complete
119d364c885d: Pull complete
79a1e7952ea8: Pull complete
caedf8940a7a: Pull complete
4161b5857c55: Pull complete
935cf508e5b5: Pull complete
2f069f060e70: Pull complete
becf74c43c04: Pull complete
Digest: sha256:42b11af19776d75c0e88d6b4b9eea46f5613f4b45e165a5b284cc275f5d21bef
Status: Downloaded newer image for <DockerId>/docker-spigot-python:latest
Loading libraries, please wait...
[02:44:08 INFO]: Starting minecraft server version 1.12.2
[02:44:08 INFO]: Loading properties
[02:44:08 INFO]: Default game type: CREATIVE
[02:44:08 INFO]: This server is running CraftBukkit version git-Spigot-549c1fa-8c37e2e (MC: 1.12.2) (Implementing API version 1.12.2-R0.1-SNAPSHOT)
[02:44:09 INFO]: Using 4 threads for Netty based IO
[02:44:09 INFO]: Server Ping Player Sample Count: 12
[02:44:09 INFO]: Debug logging is disabled
[02:44:09 INFO]: Generating keypair
[02:44:09 INFO]: Starting Minecraft server on *:25565
[02:44:09 INFO]: Using epoll channel type
[02:44:09 INFO]: Set PluginClassLoader as parallel capable
[02:44:09 INFO]: [RaspberryJuice] Loading RaspberryJuice v1.11
[02:44:09 INFO]: **** Beginning UUID conversion, this may take A LONG time ****
[02:44:09 INFO]: Preparing level "world"
...
[02:44:27 INFO]: [RaspberryJuice] Enabling RaspberryJuice v1.11
[02:44:27 INFO]: [RaspberryJuice] Using port 4711
[02:44:27 INFO]: [RaspberryJuice] Using RELATIVE locations
[02:44:27 INFO]: [RaspberryJuice] Using RIGHT clicks for hits
[02:44:27 INFO]: [RaspberryJuice] ThreadListener Started
[02:44:27 INFO]: Done (17.930s)! For help, type "help" or "?"
```

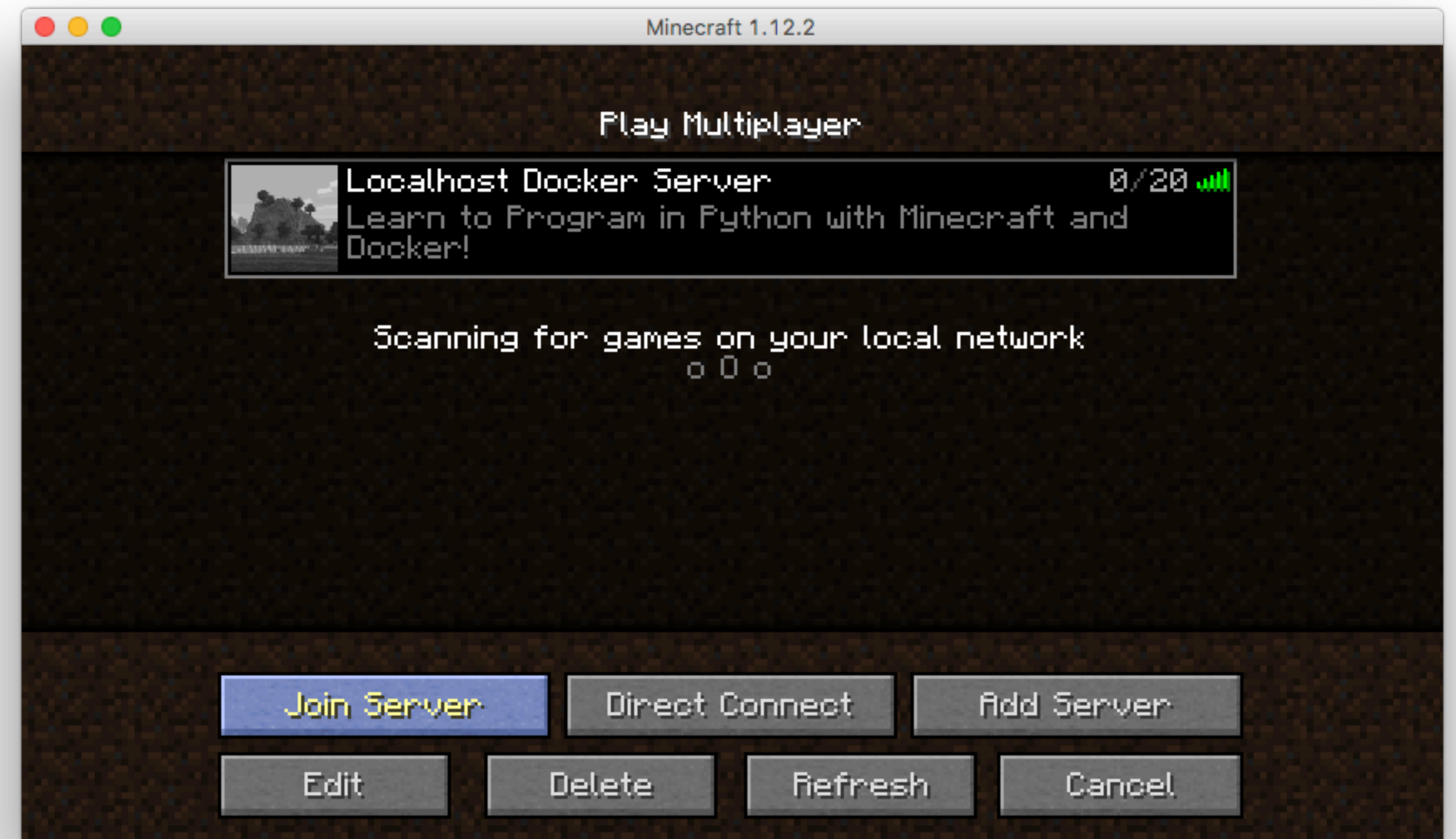
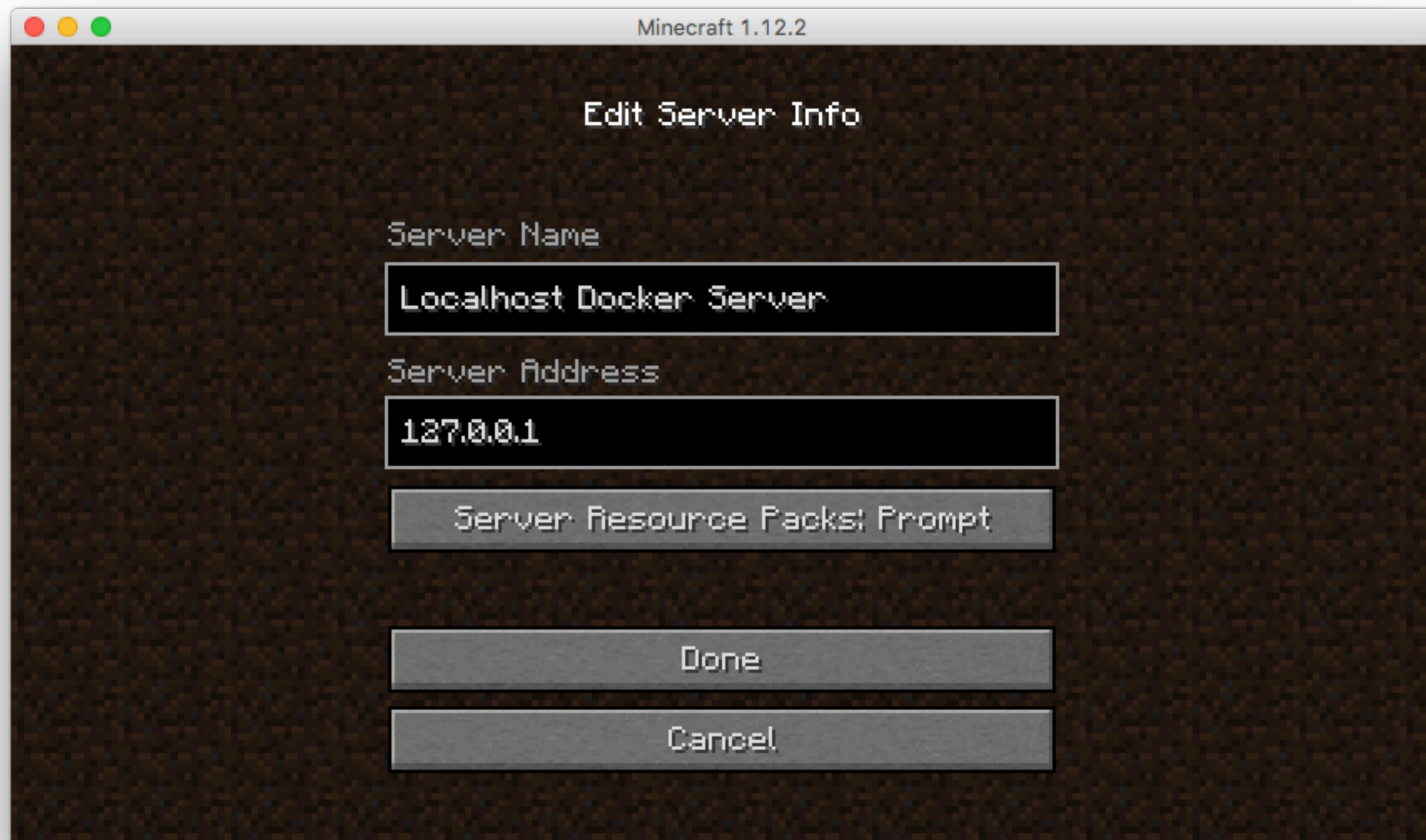
First time pulls images

Maps Minecraft folder to Mac

Starts Minecraft Spigot Server with RaspberryJuice Plugin

START MINECRAFT

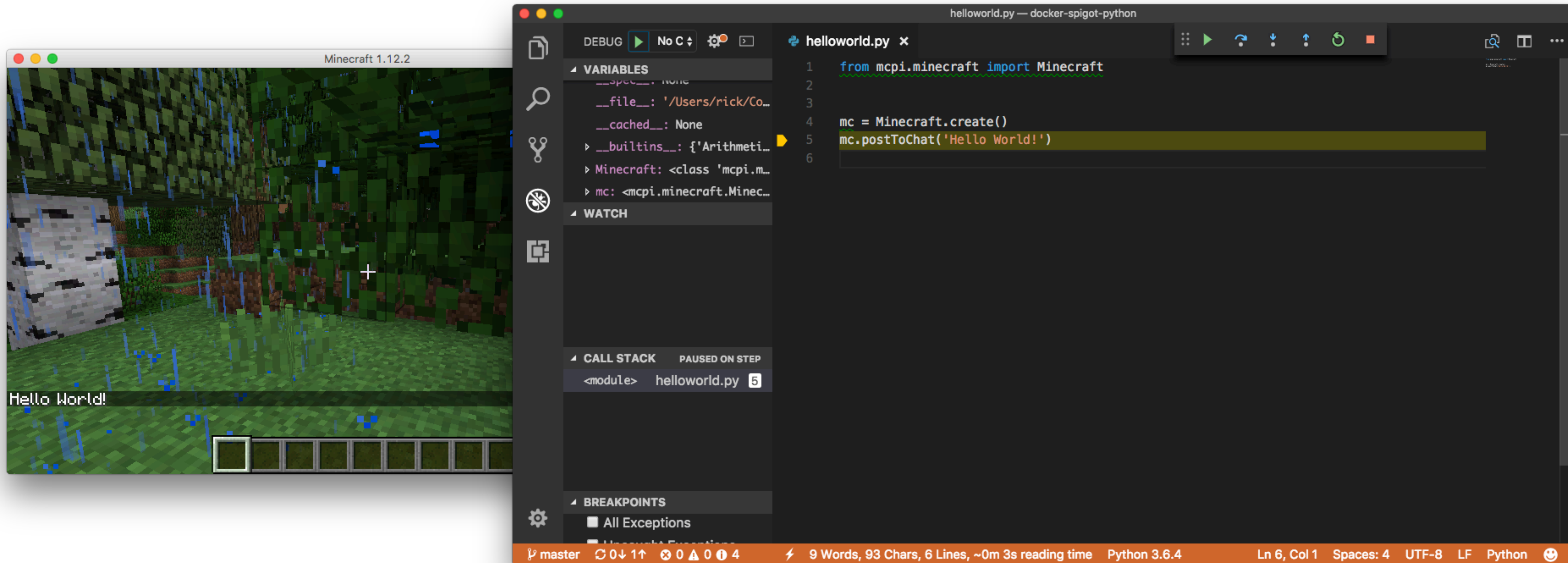
- ▶ First time: Add a Multiplayer Server pointing to localhost (127.0.0.1)
- ▶ And join it!



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HELLO WORLD!

- ▶ Open and Run python/helloworld.py and watch Minecraft!



CONTACT ME

- ▶ <https://www.rickwargo.com/>
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- ▶ [@rickwargo](https://twitter.com/rickwargo)

