

Raspberry Pi – Minecrat API

Tutor Notes

1. Run Minecraft and IDLE (Not IDLE 3) – Check everyone has these running.
2. “Start Game”, “Create New” on Minecraft – Check everyone is familiar with controls:

| | | | |
|-------|-------------------------|-------|----------------|
| Esc | Pause / Menu | W | Forward |
| Tab | Free Mouse to Display | A | Left |
| E | Block Inventory | S | Backward |
| 1 – 8 | Select Item in Quickbar | D | Right |
| Space | Jump / Ascend | Shift | Sneak / Decend |

Double tap space to toggle flying mode on / off.

Mouse: Left = Destroy Blocks, Right = Place Blocks, Wheel = Select from Quickbar

3. Initial check of Python → Minecraft operation.

- a. Let Python “know” about Minecraft:

```
from mcpi.minecraft import Minecraft
```

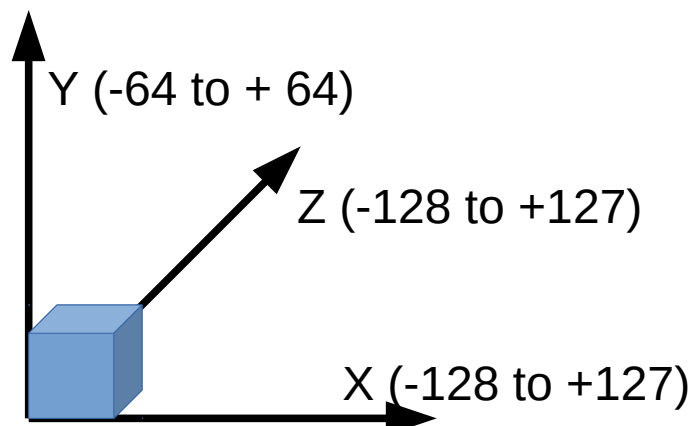
- b. Make a connection from Python to Minecraft:

```
mc = Minecraft.create()
```

- c. Send a command to Minecreaft

```
mc.postToChat("Hello Minecraft")
mc.player.getTilePos()
mc.getBlock(x, y, z)
```

4. Describe Co-ordinate System (NB: Previous line printed x, y, z; y is vertical)



5. We can now use this knowledge to place blocks into the Minecraft world:

```
mc.setBlock(x, y, z, 44)
for z in range(min, max):
    mc.setBlock(x, y, z)
```

6. Walk through of Sample Programs in the following order (likely to only have time for the first three or four):

- | | |
|--------------------|--|
| a. details.py | Roughly the previous steps as a program. |
| b. steps.py | Introduces a for-loop. |
| c. makeland.py | Introduces creating a cube of blocks. |
| d. drop_flowers.py | Introduces a while loop and sleep. |
| e. pyramid.py | Slightly more complex example. |
| f. playerEvent.py | Shows how to take action when a player reaches a certain location. |
| g. blockEvent.py | Shows how to take action when a block is hit. |
| h. castle.py | Shows how to construct more complex buildings. |

7. Ask students to pick one or more of the above examples, and to save it as a new program (File->Save As) and then modify it as they wish. Suggestions a made at the end of each program.

Resources:

Programming Python: <http://www.codecademy.com/en/tracks/python>

Minecraft Pi: <http://www.stuffaboutcode.com/p/minecraft-api-reference.html>

Raspberry Pi Blog: <http://www.raspberrypi.org/blog/>