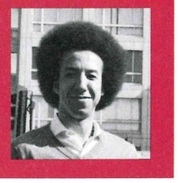
Hack Minecraft on a friend's Raspberry Pi over a network

From one Raspberry Pi to another, have some fun with a friend's Minecraft world over a local network



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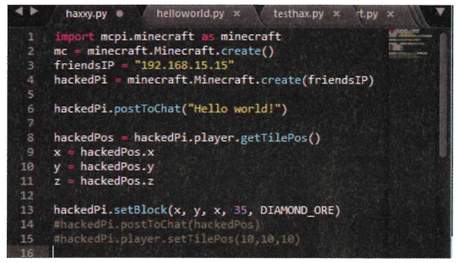
Resources

- **McPiFoMo**
  http://rogerthat.co.uk/McPiFoMo.rar
- **Block IDs:**
  http://bit.ly/MC-BlockIDs
- **Angry IP Scanner**
  http://angryip.org/download/

ON THE DISC

Tutorial files available:
filesilo.co.uk



We will create a Python script that connects directly to a Minecraft game running on another Raspberry Pi, which will enable us to have some fun with their game world. We'll have the ability to manipulate the character, the environment, and place blocks, as we've done in the previous tutorials, but this time we're working on someone else's game. We'll be able to have pranks galore, but it should be mentioned that this should not be done without prior permission of the third party.

This tutorial is written under the assumption that you're running Minecraft Pi Edition on a Raspberry Pi. No additional software is required. If you'd like to run this tutorial on your own flavour of desktop Linux, we've also put together a number of tools to ensure this hack works for you, Pi or not, with a retail version of Minecraft. To get your retail Minecraft interacting with Python, you'll need to install McPiFoMo by copying the contents of the **.minecraft** directory into **~/home/.minecraft**. McPiFoMo includes MCPiPy from MCPiPy.com and Raspberry Jam, developed by Alexander Pruss.

Python scripts should be saved in **~/home/.minecraft/mcpipy/**, regardless of whether you're running Minecraft Pi Edition or Linux Minecraft. Be sure to run Minecraft with the 'Forge 1.8' profile included in McPiFoMo.

01 Getting your friend's IP

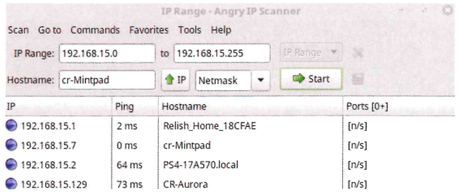
Before we do anything, we'll need to know the IP address of our friend's Raspberry Pi. Make sure your Pi is connected to the same network as theirs, and run Angry IP Scanner. This will list all the computers connected to the same network as you, within your IP range by default. Look for a hostname that suggests a Raspberry Pi. If your friend is running Raspbian, the default hostname will be 'raspberrypi'. Be sure to identify your own IP for exclusion, by opening a Terminal and running `ifconfig /all`.

02 Initiate a Python script

Create a new Python script in IDLE or your favourite text-based editor:

```
import mcpi.minecraft as minecraft
mc = minecraft.Minecraft.create()
friendsIP = "192.168.1.2"
hackedPi = minecraft.Minecraft.create(friendsIP)
```

This time, we're also start a connect to our friend's IP.



03 Hello World!

As with any programming tutorial, we start off with a quick 'Hello World!':

```
hackedPi.postToChat("Hello world!")
```

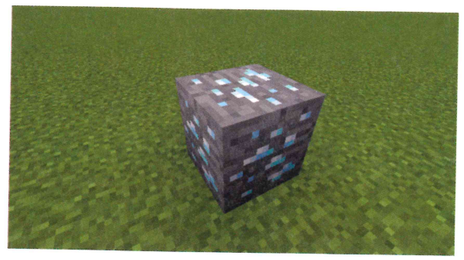
Save this script in your **~/home/.minecraft/mcpipy/** directory with a name like **hax.py** and then run the script directly from Minecraft Pi by typing '/python hax' in the chat window and pressing **Enter**. You'll notice your friend's game has now displayed 'Hello World!'. May the fun commence!

04 Placing blocks around our friend

Now that we've connected and communicated with our friend's game, it's time to start building something around them. We'll need to gather their player position and place blocks relative to them:

```
hackedPos = hackedPi.player.getTilePos()
hackedPi.setBlock(hackedPos.x,hackedPos.y,hackedPos.z,block.DIAMOND_ORE)
```

Now that we have our friend's player position, we can build around them by altering the x,y,z coordinates and block type accordingly.



05 Building in their world

To take creations from previous Minecraft Pi tutorials and convert them to work across the network, we'd replace the `mc` variable which points to our game world, with `hackedPi` referring to our friend's.

```
mc.setBlock(blockX, blockY, blockZ, woolBlockBlack, woolBlockBlackType)
```

And this becomes:

```
hackedPi.setBlock(blockX, blockY, blockZ, woolBlockBlack, woolBlockBlackType)
```

06 Hack pixel-art Creepers into friend's game (Part 1 of 3)

Let's start a new script to convert our Creeper head from **LU&D181**. Initialise the connects (as above, in Step 2) and create some new variables:

```
woolBlockGreen = 35
woolBlockGreenType = 5
woolBlockBlack = 35
woolBlockBlackType = 15
```

07 Hack pixel-art Creepers into friend's game (Part 2 of 3)

Create our pixel art with alternating block types.

```
pixelArt = [[1, 1, 1, 1, 1, 1, 1, 1],[1, 0, 0, 1, 1, 0, 0, 1],[1, 0, 0, 1, 1, 0, 0, 1],[1, 1, 1, 0, 0, 1, 1, 1],[1, 1, 0, 0, 0, 0, 1, 1],[1, 1, 0, 0, 0, 0, 1, 1],[1, 1, 0, 1, 1, 0, 1, 1],[1, 1, 1, 1, 1, 1, 1, 1]]
```

In the next step, we'll link these 1s and 0s to our previously initialised variables, assigning 0 to `woolBlockBlack` and 1 to `woolBlockGreen`. When we run this code, we'll spawn a large pixel-art Creeper head in front of our friend's player.

08 Hack pixel-art Creepers into friend's game (Part 3 of 3)

```
pos = hackedPi.player.getTilePos()
for row in range(len(pixelArt)):
    for pixel in range(len(pixelArt[row])):
        if pixelArt[row][pixel] == 0:
            hackedPi.setBlock(pos.x, (pos.y+7) - row, pos.z + pixel, woolBlockBlack, woolBlockBlackType)
        elif pixelArt[row][pixel] == 1:
            hackedPi.setBlock(pos.x, (pos.y+7) - row, pos.z + pixel, woolBlockGreen, woolBlockGreenType)
```

09 Spawn it, blow it

Save your new script in **~/home/.minecraft/mcpipy/** and run it directly in Minecraft Pi with '/python scriptname'. Now sit back and watch your friend jump when a giant Creeper head appears in front of them.

If you want to take things to the next level, you could duplicate the `for` loop to spawn rows of TNT behind the Creeper head. An explosive Creeper head would be quite something. The easiest way to spawn primed TNT is to place it next to an enabled redstone torch (blockID 76).

10 Teleport your friend around their world

We've controlled the game world by placing blocks around our friend's player, and we've communicated with them directly by displaying text on their screen. Another fun way of messing with our friend is by teleporting their player around their world.

```
hackedPi.player.setTilePos(x,y,z)
```

Initialise some the x,y,z variables and set them to whatever coordinates you want your friend's player to be teleported to.

Python and Minecraft Pi

Using Python, we can hook directly into Minecraft Pi to perform complex calculations, alter the location of our player character and spawn blocks. We can do pretty much anything from creating prefabricated pixel art, to communicating directly with the player via in-game chat. Now, with this issue's tutorial, we can do all of it over the network. By hacking into our friend's Minecraft Pi, we can manipulate their game world and their player character to our heart's content. With each issue of **LU&D** we take a deeper look into coding Python for Minecraft Pi, with the aims of both improving our Python programming skills and gaining a better understanding of what goes on underneath the hood of everyone's favourite voxel-based video game.