

Configuring Raspberry Pi

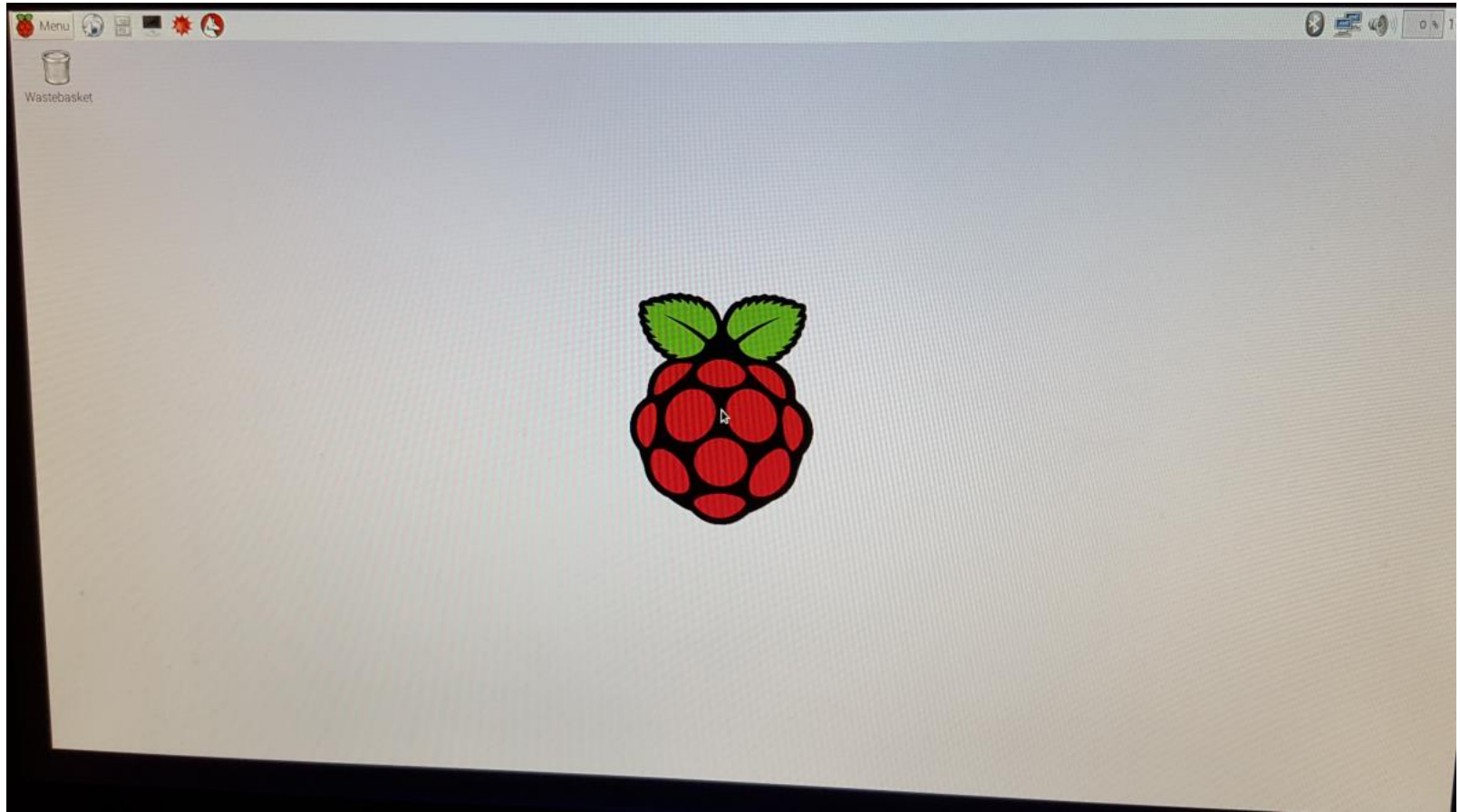
Steps prior to using the server code

Newest version of OS

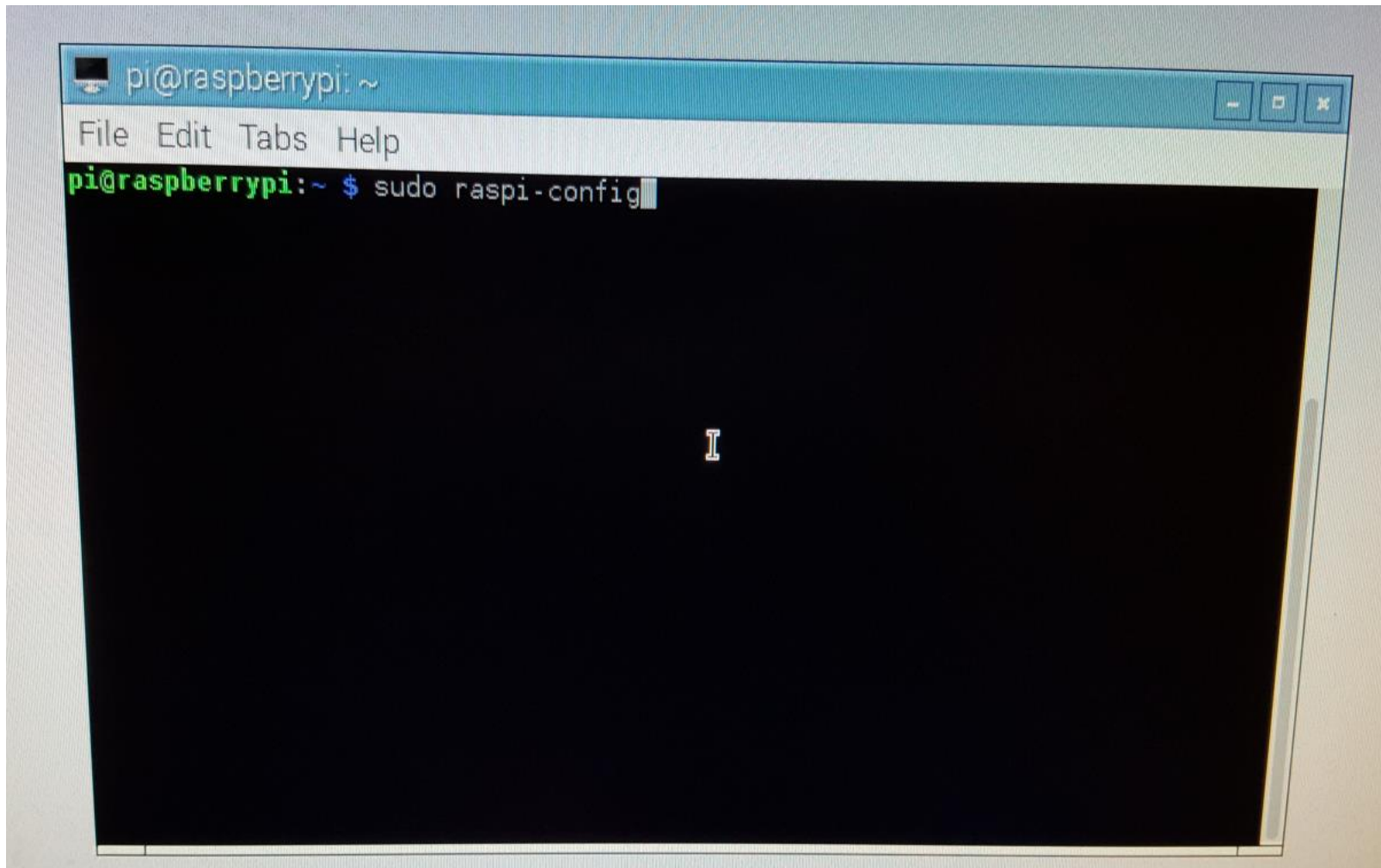
- We will be using the latest version of the RASPBIAN JESSIE ([LINK](#))
 - Full version, NOT the LITE version
 - Other OS work great, but this is what the rest of tutorials assume, so minor adjustments will need to be made if picking a different distro of Linux
- RaspberryPi.org has best documentation for this <https://www.raspberrypi.org/documentation/installation/installing-images/>

Getting to the command line

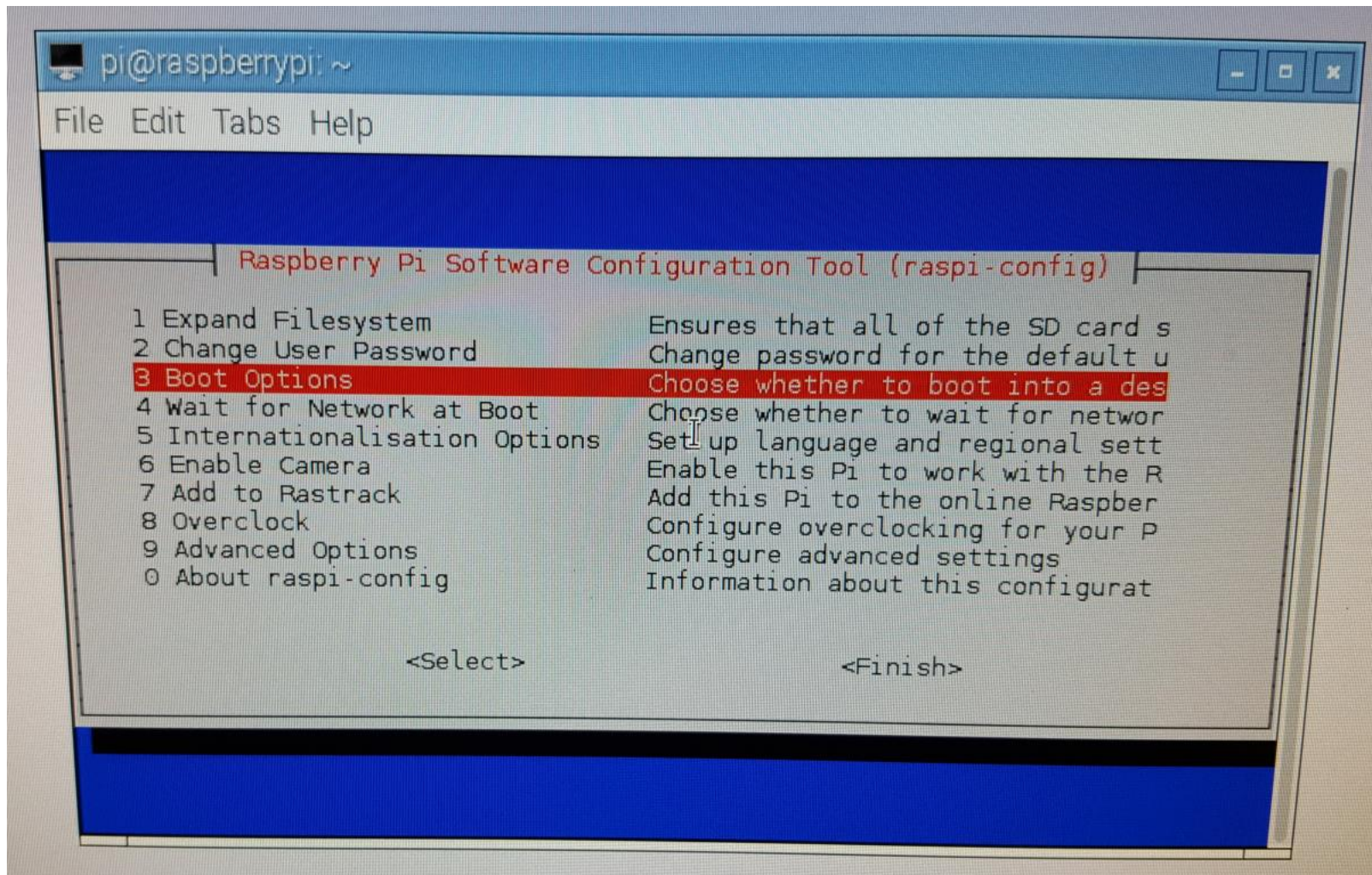
- Once you load your new OS to your Pi you will need to set it up with a monitor
 - **NOTE:** If you know a way without a monitor LET ME KNOW!
- We need to get to the GUI interface and change the Raspberry Pi Configuration to boot up to the command line logged in.



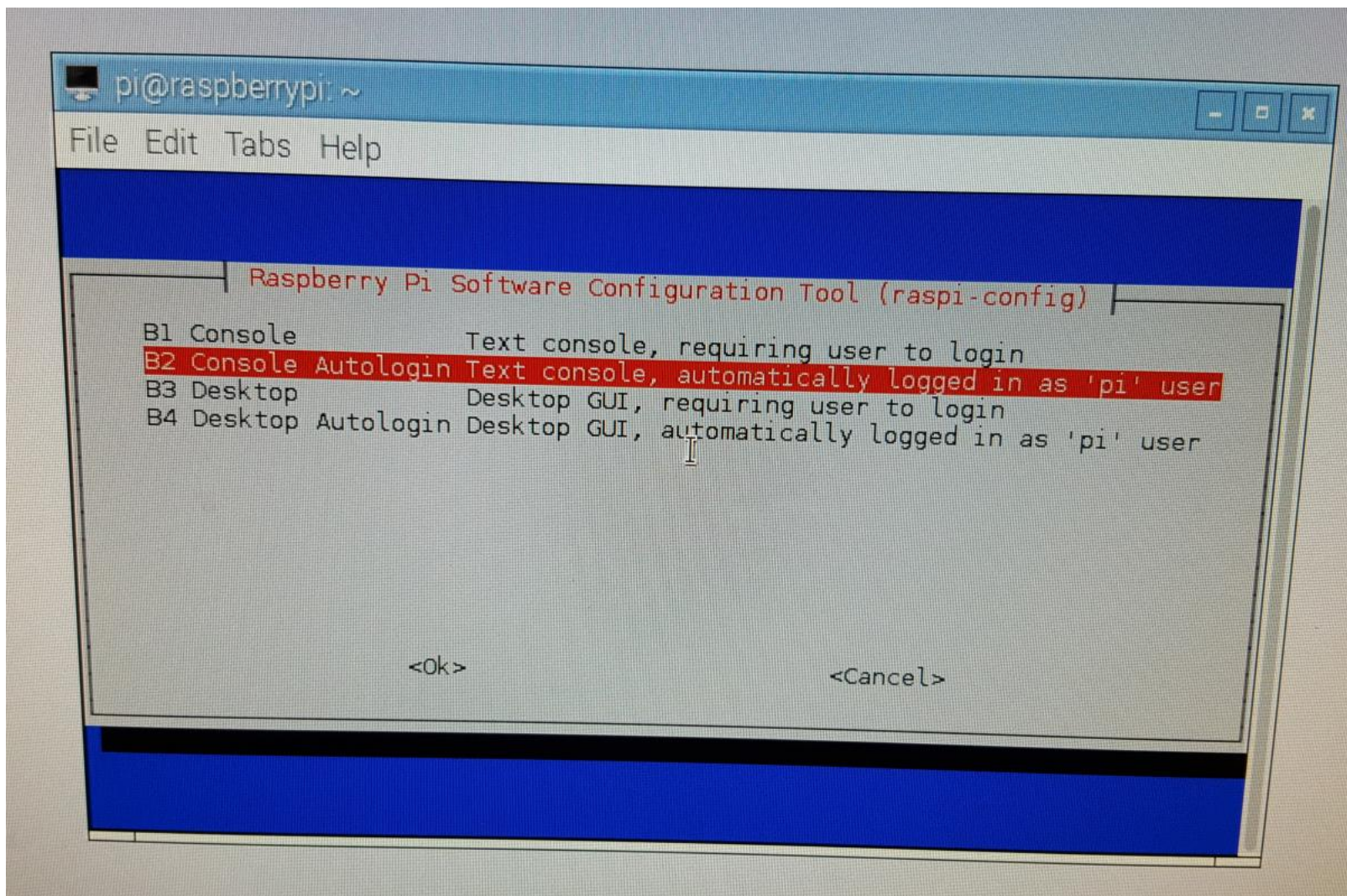
- This is the Desktop view



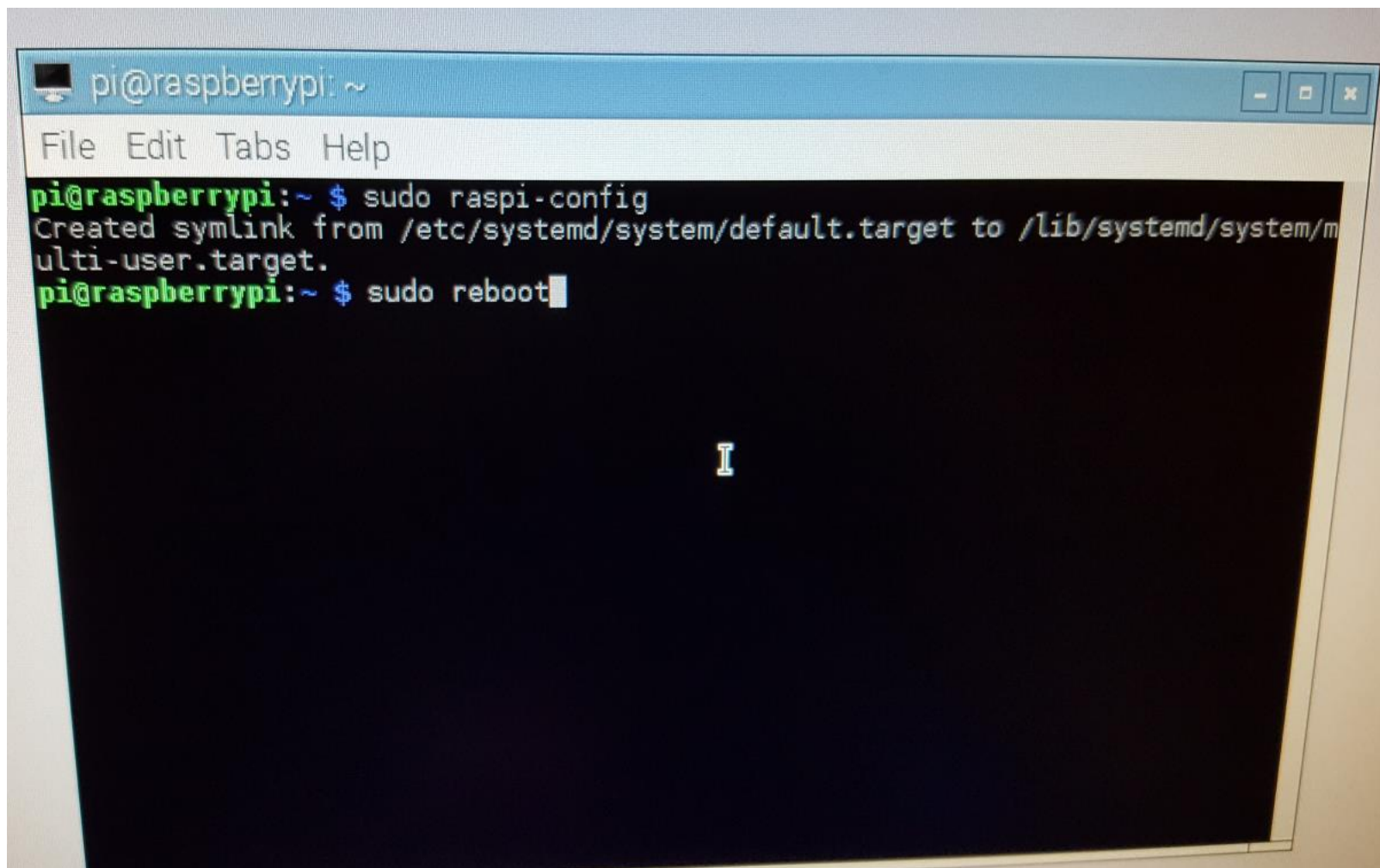
- Either find the “Terminal” or type “Ctrl+Alt+T” to open it
- Type “sudo raspi-config” and hit Enter



- This will bring up the Pi's configuration menu
- Use arrow keys to select option 3 ("Boot Options")



- Select “Console AutoLogin” to have the Pi boot up to the console with logged in.
- You can now exit the configuration menu

A terminal window titled 'pi@raspberrypi: ~' with a menu bar containing 'File', 'Edit', 'Tabs', and 'Help'. The terminal output shows the command 'sudo raspi-config' being executed, followed by the message 'Created symlink from /etc/systemd/system/default.target to /lib/systemd/system/multi-user.target.' and then the command 'sudo reboot' with a cursor at the end.

```
pi@raspberrypi: ~  
File Edit Tabs Help  
pi@raspberrypi:~ $ sudo raspi-config  
Created symlink from /etc/systemd/system/default.target to /lib/systemd/system/multi-user.target.  
pi@raspberrypi:~ $ sudo reboot
```

- Either power off your Raspberry Pi or type “sudo reboot” to restart the Pi

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law.

pi@raspberrypi:~ \$ ifconfig

eth0 Link encap:Ethernet HWaddr b8:27:eb:4f:50:f8
inet addr:192.168.1.121 Bcast:192.168.1.255 Mask:255.255.255.0
inet6 addr: fe80::5489:90f3:570a:6fbc/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:16 errors:0 dropped:0 overruns:0 frame:0
TX packets:44 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:2617 (2.5 KiB) TX bytes:7526 (7.3 KiB)

lo Link encap:Local Loopback
inet addr:127.0.0.1 Mask:255.0.0.0
inet6 addr: ::1/128 Scope:Host
UP LOOPBACK RUNNING MTU:65536 Metric:1
RX packets:200 errors:0 dropped:0 overruns:0 frame:0
TX packets:200 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1
RX bytes:16656 (16.2 KiB) TX bytes:16656 (16.2 KiB)

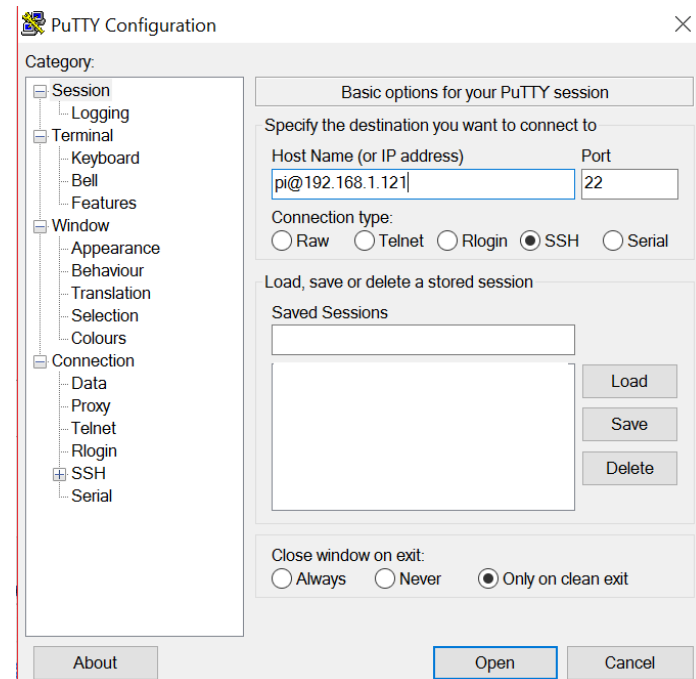
pi@raspberrypi:~ \$

- To SSH into the Pi we need it's IP Address, here are 3 options
 - Type “ifconfig” and find it
 - Log into your router and see where it is connected to
 - Set the /etc/network/interfaces config file to have a static IP

SSH into your Pi

Password: raspberry

- My recommendation is to download Putty if you are using Windows
 - If using Mac or Linux just open a terminal and type “ssh pi@TheIPAddressHere”
- In Putty type in the
- IP address and click “Open”
- **NOTE:** if you don't put “pi@” in front it will just ask you the username first



Update apt-get

- “apt-get” utility is a powerful and free package management command line program (note: need internet)
- Type “sudo apt-get update”
 - (it might take some time)
- Then type “sudo apt-get upgrade”
 - (if first time will take almost 10-30 minutes)
- Now you can get thousands of modules/programs

Installing MongoDB

- Type “sudo apt-get install mongodb-server”
- ...That's it

Running MongoDB

- To start two main ways to start it
 - “sudo /etc/init.d/mongodb start”
 - “sudo service mongodb start”
- To check if its working type
“sudo service mognodb status”

[In case MongoDB crashes on you](#)

Getting C driver for MongoDB

- MongoDB uses JSON
 - Compatible with websites using JSON
 - Need way to create JSON objects in C
 - BSON format is used (Binary JSON)
- “sudo apt-get install libmongoc-1.0-0”
 - [Libmongoc docs](#)

If libmongoc library is down

- I have ran into libmongoc not installing with apt-get so here is the work around
- I have the library folder “libmongoc-1.0” in the repo [here](#)
- Take it and move it to `/usr/include/`
- If you get file permission errors bring it to your `/home/pi/` folder and run `sudo mv libmongoc-1.0/ /usr/include/`

Changing Network

- Time to change the Pi to always have the same static wireless IP for the game
- Using your text editor of choice (I use nano) go `sudo nano /etc/network/interfaces`
- Change the code to what I have on next page

/etc/network/interfaces

source-directory /etc/network/interfaces.d

auto lo

iface lo inet loopback

iface eth0 inet dhcp

allow-hotplug wlan0

auto wlan0

iface wlan0 inet static

address <insert static IP here>

netmask 255.255.255.0

wpa-ssid "<insert wifi name>"

wpa-psk "<insert wifi password>"

To restart network with rebooting

- Type `sudo /etc/init.d/networking restart`

dhcpcd5

- If you type `hostname -I` you might see two IPs
- To fix this run `sudo apt-get remove dhcpcd5`

Get the Git Repo

- Find a location to hold the Git Repo
 - “/home/pi” is a pretty good location
- Type

“git clone https://github.com/sjfricke/IEEE_RaspberryPi_Socket_Pokemon.git”

- Change Directory to the “Pi” folder in it
 - “cd IEEE_RaspberryPi_Socket_Pokemon/Pi”