

Setup

Hey everyone! I wanted to provide some brief instructions on how to set your Raspberry Pi up so you're ready to go when they arrive.

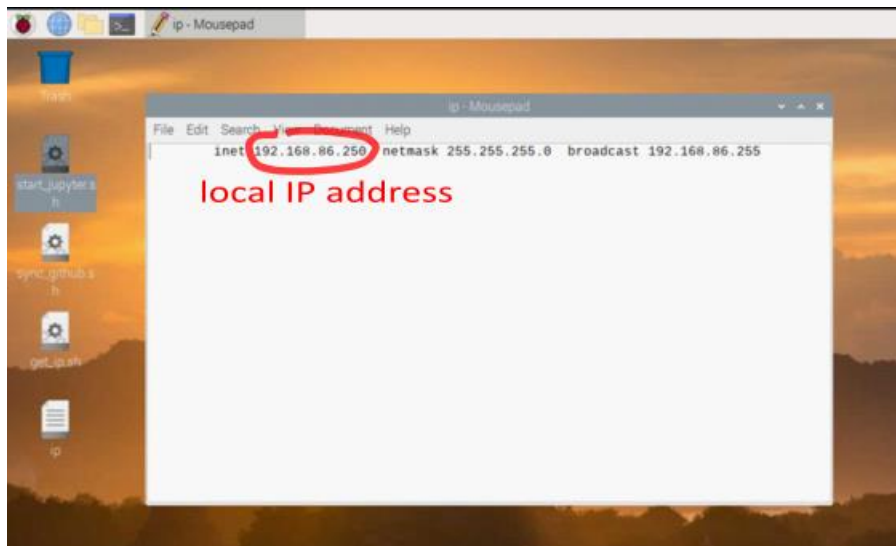
0. Unbox it, and behold a full-fledged computer in the palm of your hand
1. Plug the HDMI cable into your Pi, and into any monitor/TV with an HDMI port. Make sure to set the monitor/TV to the correct input.
2. Plug the USB hub into the Pi's USB port.
3. The USB hub has a power supply for the hub with it in its box. **You don't have to worry about that for now!** If you plug a USB device that pulls a lot of power into the hub (a controller, external hard drive, a phone to charge), then you'll need to plug in the hub's power supply.
4. Plug the mouse and keyboard into the USB hub.
5. Plug the microUSB power supply for the Pi into the wall and into the Pi.
6. The Pi doesn't have a power button or anything, so it'll turn on as soon as you do this. Do this after plugging in HDMI + mouse/keyboard, so you can watch the screen and make sure it's starting up.
7. At this point, the Pi should turn on, and after a little while should finish booting up and display a desktop.
8. You'll get a little message about a password not being set up for the Pi user. Don't worry about this for now, just click "ok".
9. Set up WiFi by clicking the WiFi icon in the top right, choose your network, and enter the correct password.
10. At this point you have a little tiny computer set up, connected to the internet, and ready to roll! If you click the icon in the top left on the menubar, that's sort of like the Start button on windows, and it'll open a list of installed software.

To turn off the Pi: Click on that same icon in the top left, click logout, and click shut down from the menu it presents. Once it's off, then you can pull out the power cable. Try to avoid turning it off by just yanking the power cable out when it's on, that can be damaging to the SD card.

For your reference:

- The Pi is powered via the small microUSB connector on the side with the HDMI port and headphone jack.
- The display is output over the HDMI port.
- Plugging stuff into it is done via the USB port, which is on its own side.
- Data is stored on a microSD card, on the side opposite the USB port (the little slot towards the bottom).
- They have built-in wifi to connect to the internet
- Don't delete any of the folders in the pi directory, or stuff we put on the desktop.

Screen Sharing



To set up for screen sharing during class we will use Real VNC Viewer.

1. From your laptop or computer you are using to connect to the class, open a browser and go to:
<https://www.realvnc.com/en/connect/download/viewer/>
1. Follow the instructions and download the VNC Viewer software onto your computer. When it is finished installing, open the VNC-Viewer .exe file you just downloaded. Follow the instructions, accept the license, click install and allow the program to make changes on your computer.
2. Now open the VNC Viewer app on your computer, click through the intro screen and you should have a bar at the top of the app window which says "Enter a VNC server address or search". We need to enter the IP which your raspberry pi got assigned when it connected to the internet here.
3. Go to your raspberry pi home screen, and double click the get_ip.sh icon on your desktop, and click execute. A new file should have appeared on your desktop labeled ip. Double click this file (full file is ip.txt and it shows up like a text document). You need the first set of numbers in this document, something like 192.XXX.XX.XXX which is the local IP address of your raspberry pi.
4. Enter this number into the bar on the VNC Viewer app. Your first time connecting you should get a dialogue box asking if you want to connect, hit continue. You will then be prompted for a username and password. These are still set to the default username and password (which you can change, but don't forget them):
5. Username: pi
6. Password: raspberry
7. 5. This should open a window which is a duplicate of your raspberry pi screen. You can now share this screen in Zoom and show us and your classmates all the cool stuff you do, or get help if you are stuck.

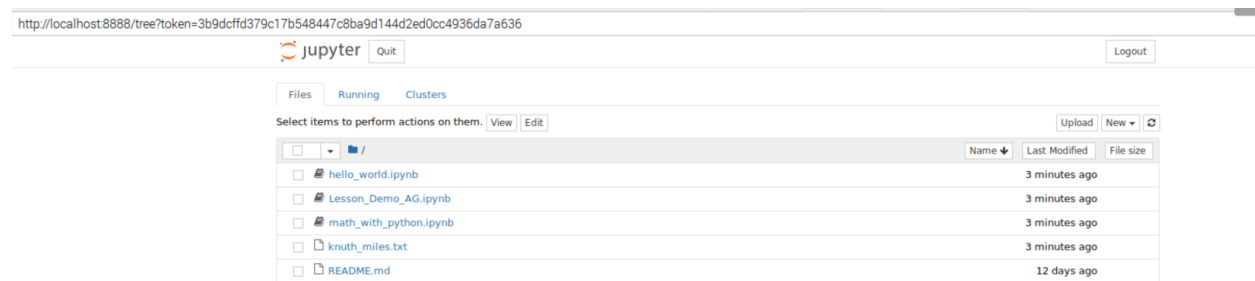
Downloading the class materials

Now we want to get the class materials, which are in a github repository. This is a publicly shared file server where we can add class materials and easily share them with you.

1. On the raspberry pi desktop, double click the sync_github.sh icon and hit execute. You may not see anything happen, but all of the class materials just automatically updated on your computer!

Opening a python notebook... time for your first python command!

1. Double-click on the start_jupyter.sh icon on your desktop. This will open a Jupyter Notebook, which is a way to run python code from your web browser. Even though we will be using these web-based notebooks, the python code will be running on your own raspberry pi. Give it a minute, but this should open a screen which looks like this:



2. Click on the hello_world.ipynb file. This will open a notebook which will guide you through writing your first (at least on your raspberry pi) line of python code! All of the classes will utilize notebooks you can access by first running sync_github.sh, and then the start_jupyter.sh commands.
3. Surely you will want to save a copy of your first python notebook for posterity. Go to File -> Save as... and type a name for the file, like hello_world_myfirstcode (it is important that you change the name of any notebook you save, because otherwise it will make a conflict when you update the class files from github).