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Lab 1
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Getting Familiar with the Rpi/USB system

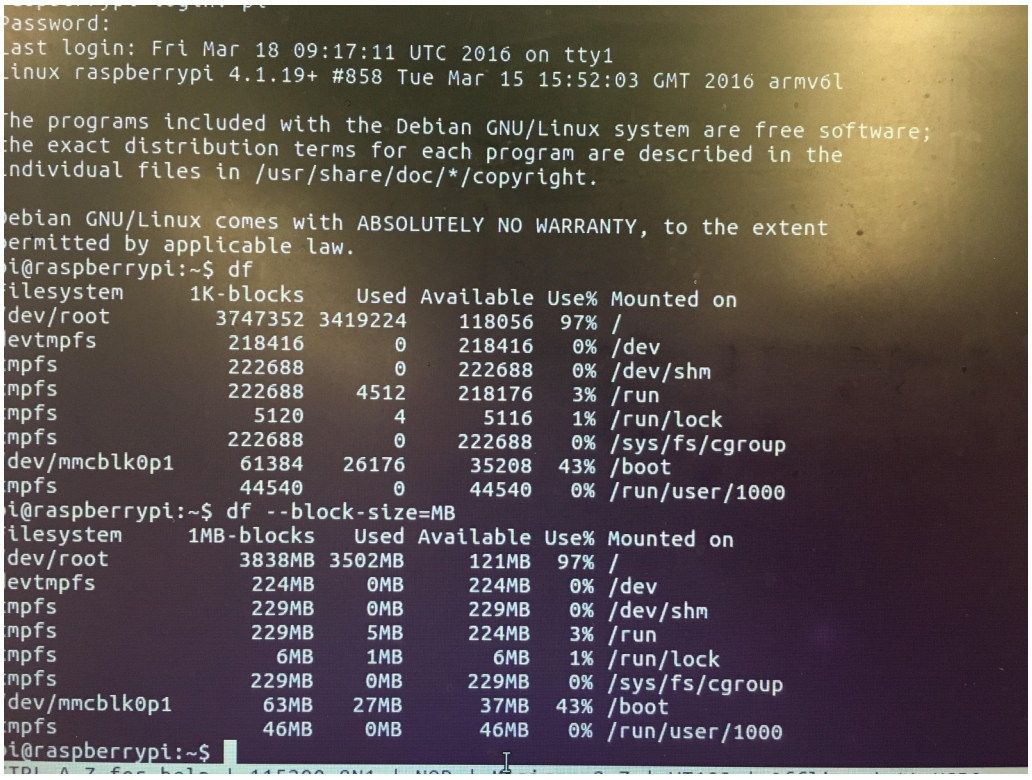
In this lab, we used Linux systetm. The lab was pretty straightforward rather than Windows and Mac and we were able to deal with this device easily. We followed each of steps that is below.

First, we connected the Rpi/USB system to the Linux machine and installed minicom. It was available to connect them by using the commands: “sudo minicom -D /dev/ttyUSB0” or “sudo minicom”.

Second, once the computer was connected to the device and typed the command line, the screen was changed and it was only possible to give a command when inserting “(CRTL + A) + (some alphabet)”. “(CRTL+A) + Z” was a manual to be able to show all the commands. Based on this experience, we changed the setting by using “(CTRL + A) + O” and went into “Serial Port Setup”. In this option, would be able to change the setting and especially, we hit ‘F’ so that Hardware Flow Control was turned off and then returned the regular session by using double hits of ESCAPE.

Third, after the above steps, it allowed us to login into the system. We typed “pi” in username and raspberry in passward. When we typed “df”, we were able to see like the below

Before expanding, the available space was 3.7 Gb. It could be checked from the line for /dev/root



After expanding, the available data is 7.6 Gb.

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/root	7511124	3420572	3729916	48%	/
devtmpfs	218416	0	218416	0%	/dev
tmpfs	222688	0	222688	0%	/dev/shm
tmpfs	222688	4512	218176	3%	/run
tmpfs	5120	4	5116	1%	/run/lock
tmpfs	222688	0	222688	0%	/sys/fs/cgroup
/dev/mmcblk0p1	61384	26176	35208	43%	/boot
tmpfs	44540	0	44540	0%	/run/user/1000

When we typed “sudo raspi-config”

```
1 Expand Filesystem            Ensures that all of the SD card s s
2 Change User Password         Change password for the default u u
3 Boot Options                 Choose whether to boot into a deses
4 Wait for Network at Boot     Choose whether to wait for networor
5 Internationalisation Options Set up language and regional setttt
6 Enable Camera                Enable this Pi to work with the R R
7 Add to Rastrack              Add this Pi to the online Raspberer
8 Overclock                    Configure overclocking for your P P
9 Advanced Options             Configure advanced settings
0 About raspi-config           Information about this configuratat
```

Above these options, we would be able to change the setting of the device. There are ten of different options: Expanding Filesystem, Change PW, Boot options, Wait for Network, Internationalisation Options, Enable Camera, Add to Rastrack, Overclock, Advanced Options, and About raspi-config. Specifically, we explored three other options.
We would change the password so that it could keep its own security and it did not allow other users to use this device. In section 5(internationalisation Options), user could change the language and regional setting in computer. Also, in the USB, there were some ports to be able to connected to some other device. The camera would be available for the camera and the setting can be arranged from the section 6 (Enable Camera).

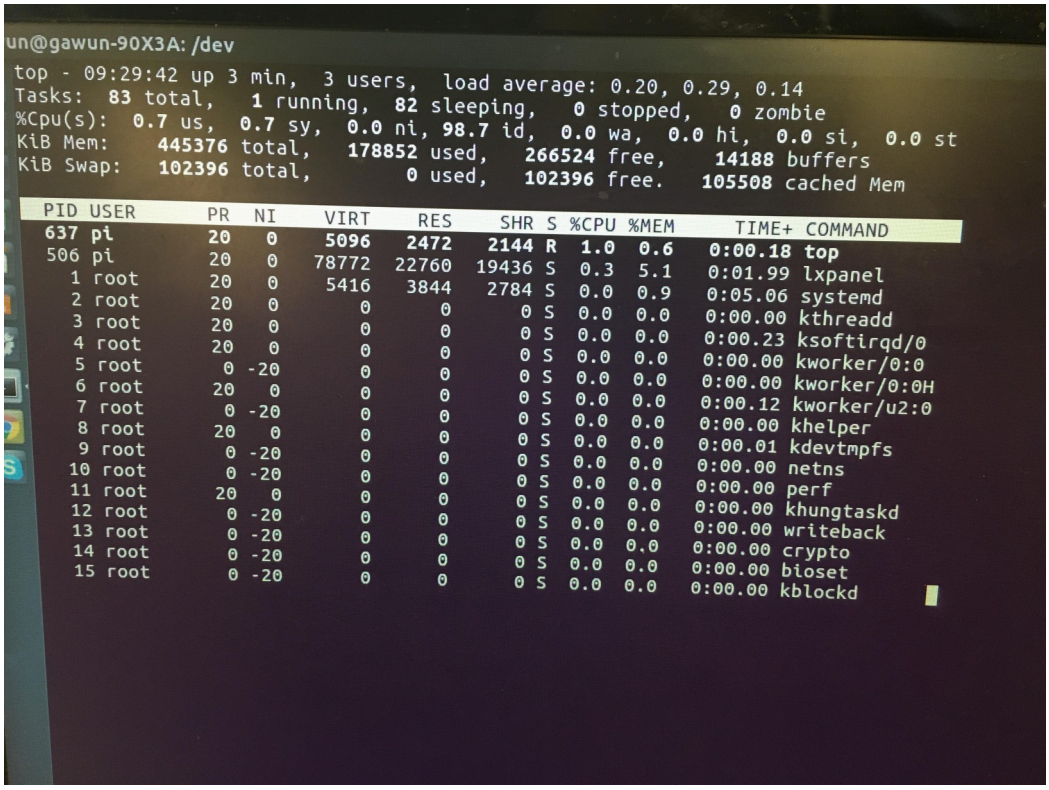
We mainly dealt with Expanding Filesystem. After that we expanded Filesystem and then it had been rebooted when we hit finish botton.; we should login again with the account. The available data was expanded from 3.7Gb to 7.6 Gb in /dev/root. Personally, I think the initial total data was 4 Gb and total expanded data was 8 Gb.

When we confirmed the version of java in the device, we used the command which is “java -version”.

```
pi@raspberrypi:~$ java -version
java version "1.8.0_65"
Java(TM) SE Runtime Environment (build 1.8.0_65-b17)
Java HotSpot(TM) Client VM (build 25.65-b01, mixed mode)
```

The version was “1.8.0_65”

When we typed “top” on the command line, the below box was shown on the page.
The memory on the system was 445376 total.



At that time, 83 of tasks were currently on our system. 1 was running and 82 was sleeping.

When we typed the command(cd /boot/XFER), we would be able to go into the folder.
There were some of files or folder inside. The files regarding that are below.

```
pi@raspberrypi:/boot/XFER$ ls
bashrc  exrc   j8header-b-plus.png  newuser  SETUP    wiringPi
C       HexBug  Java                packages  TODO.txt
```

Also, we changed directories to /boot/XFER/packages and explored the files into that folder.

For the last step, we run cowsay command and we were able to notice this output that is below.
pi@raspberrypi:~$ cowsay Hello Nick Give me an A!

```
 _____________________________
< Hello Nick Give me an A! >
 -----------------------------
        \  ^__^
         \ (oo)\_____
           (__)\       )\/\
              ||----w |
              ||     ||
```

After all the lab, we finished it with the command(sudo shutdown -h now) and it was able to go out.
pi@raspberrypi:~$ sudo shutdown -h now
[513.346434] reboot: Power down