

Activity 1

```
student7@PiStudent7 ~> ls
Bookshelf/ Desktop/ Documents/ Downloads/ Music/ Pictures/ Public/ Templates/ Videos/
student7@PiStudent7 ~> pwd
/home/student7
student7@PiStudent7 ~> cd /etc
student7@PiStudent7 /etc> cd
student7@PiStudent7 ~>
```

ls: lists the files and directories with in the current directory

pwd: shows the current directory

cd /etc: cd navigates to a directory of users choice

cd: shortcut that navigates to user home

Activity 2

```
garrett@PiStudent7 ~> mkdir LinuxEssentials
garrett@PiStudent7 ~> cd LinuxEssentials/
garrett@PiStudent7 ~/LinuxEssentials> touch my_first_file.txt
garrett@PiStudent7 ~/LinuxEssentials> mv my_first_file.txt renamed_file.txt
garrett@PiStudent7 ~/LinuxEssentials> echo "Hello Raspberry Pi" > notes.txt
garrett@PiStudent7 ~/LinuxEssentials> cat notes.txt
Hello Raspberry Pi
garrett@PiStudent7 ~/LinuxEssentials> rm renamed_file.txt
garrett@PiStudent7 ~/LinuxEssentials>
```

Mkdir: makes a directory in the current directory

Touch: creates a file of users choice

Mv: can move a file to a new location or rename it

Echo: puts the string as an output in the terminal, but I used a redirect to have it create a file named notes.txt with the echo

Cat: Lets you read the contents of file in the terminal

Rm: removes files

Activity 3

```

garrett@PiStudent7 ~/LinuxEssentials> cat notes.txt
Hello Raspberry Pi
garrett@PiStudent7 ~/LinuxEssentials> grep -i "Raspberry" notes.txt
Hello Raspberry Pi
garrett@PiStudent7 ~/LinuxEssentials> uptime
11:15:17 up 48 min, 3 users, load average: 0.01, 0.03, 0.07
garrett@PiStudent7 ~/LinuxEssentials> df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            2.0G   0    2.0G   0% /dev
tmpfs           405M  6.1M  399M   2% /run
/dev/mmcblk0p2  117G  5.0G  107G   5% /
tmpfs           2.0G  320K  2.0G   1% /dev/shm
tmpfs           5.0M   48K  5.0M   1% /run/lock
/dev/mmcblk0p1  510M   76M  435M  15% /boot/firmware
tmpfs           405M  208K  405M   1% /run/user/1000
tmpfs           405M  176K  405M   1% /run/user/999
garrett@PiStudent7 ~/LinuxEssentials> free
              total        used        free      shared  buff/cache   available
Mem:           4142080        610576       2423328         61520       1235296       3531504
Swap:          204784            0         204784
garrett@PiStudent7 ~/LinuxEssentials>

```

Grep: lets you search a file or list for a value

Uptime: lets you see how long and how many users are logged in

Df: lets you see the disk usage

Free: Lets you see the memory usage

Activity 4

```

garrett@PiStudent7 ~/LinuxEssentials> nvim notes.txt
garrett@PiStudent7 ~/LinuxEssentials> cat notes.txt
Hello Raspberry Pi

Learning Linux Essentials

Rasberyy Pi is great for embedded systems!
garrett@PiStudent7 ~/LinuxEssentials>

```

Activity 5

```

garrett@PiStudent7 ~ [1]> sudo adduser teststudent
Adding user `teststudent' ...
Adding new group `teststudent' (1002) ...
Adding new user `teststudent' (1002) with group `teststudent (1002)' ...
Creating home directory `/home/teststudent' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for teststudent
Enter the new value, or press ENTER for the default
    Full Name []:
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n]
Adding new user `teststudent' to supplemental / extra groups `users' ...
Adding user `teststudent' to group `users' ...
garrett@PiStudent7 ~> cat /etc/passwd
root:x:0:0:root:/root:/usr/bin/fish
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
_apt:x:42:65534::/nonexistent:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:998:998:systemd Network Management:/:/usr/sbin/nologin
systemd-timesync:x:997:997:systemd Time Synchronization:/:/usr/sbin/nologin
messagebus:x:100:107::/nonexistent:/usr/sbin/nologin
_rpc:x:101:65534::/run/rpcbind:/usr/sbin/nologin
sshd:x:102:65534::/run/sshd:/usr/sbin/nologin
statd:x:103:65534::/var/lib/nfs:/usr/sbin/nologin
avahi:x:104:110:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
polkitd:x:996:996:polkit:/nonexistent:/usr/sbin/nologin
dnsmasq:x:105:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
lightdm:x:106:111:Light Display Manager:/var/lib/lightdm:/bin/false
rtkit:x:107:112:RealtimeKit,,,:/proc:/usr/sbin/nologin
pulse:x:108:117:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
saned:x:109:120::/var/lib/saned:/usr/sbin/nologin
vnc:x:992:992:vnc:/nonexistent:/usr/sbin/nologin
colord:x:110:121:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
hplip:x:111:7:HPLIP system user,,,:/run/hplip:/bin/false
student7:x:1000:1000::,:/home/student7:/usr/bin/fish
test:x:1001:1001::/home/test:/usr/bin/fish
garrett:x:999:991::/home/garrett:/usr/bin/fish
teststudent:x:1002:1002::,:/home/teststudent:/bin/bash
garrett@PiStudent7 ~> ls -l
total 4
drwxr-xr-x 2 garrett garrett 4096 Jan 17 11:16 LinuxEssentials/
garrett@PiStudent7 ~> chmod 444 LinuxEssentials/
garrett@PiStudent7 ~> ls -l
total 4
dr--r--r-- 2 garrett garrett 4096 Jan 17 11:16 LinuxEssentials/
garrett@PiStudent7 ~> █

```

File permissions are important because they limit how other users can interact with each other. Without it any user could access any file and modify it.