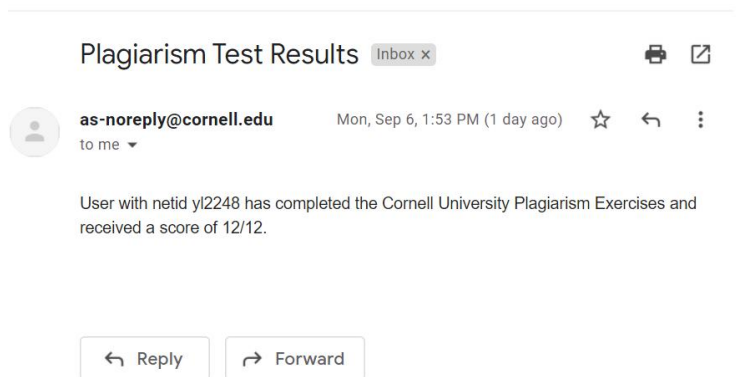


# Homework1

Name: Yanan Liu      Netid: yl2248

Q1:



Q3:

- What is permission 777 ?

Permission 777 mean the file owner,group members and everyone else all have access to read write and execute this file.

- why might this be dangerous.

Since everyone have access to read,write and execute this file,it can be changed randomly.

- What is permission 644 and what would it allow users to do with your file?

Permission 644 means **file owner** can read and write this file,but can't execute this file.

**Groups** and **others** can only read this file,they can't write and execute this file.

- What is permission 700 and what does this allow users to do with your file?

Permission 700 means **file owner** can read, write and execute this file.

**Groups** and **others** can't read, write and execute this file.

## Q4:

```
yl2248@ece5725-f21: /home
Using username "yl2248".
yl2248@132.236.79.64's password:
Linux ece5725-f21 5.10.52-v7l+ #1441 SMP Tue Aug 3 18:11:56 BST 2021 armv7l

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Sep  8 00:01:30 2021 from 24.97.110.216
yl2248@ece5725-f21:~ $ whoami
yl2248
yl2248@ece5725-f21:~ $ pwd
/home/yl2248
yl2248@ece5725-f21:~ $ date
Wed Sep  8 00:04:18 EDT 2021
yl2248@ece5725-f21:~ $ mkdir test_hw1
yl2248@ece5725-f21:~ $ ls
test  test_hw1
yl2248@ece5725-f21:~ $ cd ..
yl2248@ece5725-f21:/home $ chmod 744 yl2248
yl2248@ece5725-f21:/home $ ls -ld yl2248
drwxr--r-- 5 yl2248 students 4096 Sep  8 00:06 yl2248
yl2248@ece5725-f21:/home $ passwd
Changing password for yl2248.
Current password:
New password:
Retype new password:
Bad: new and old password must differ by more than just case
New password:
Retype new password:
You must choose a longer password
New password:
Retype new password:
passwd: password updated successfully
yl2248@ece5725-f21:/home $ █
```

## Q5:

```
yl2248@ece5725-f21:/home $ cd yl2248
yl2248@ece5725-f21:~ $ cd test_hw1
yl2248@ece5725-f21:~/test_hw1 $ echo "yl2248 YananLiu" > HW1.txt
yl2248@ece5725-f21:~/test_hw1 $ cd ..
yl2248@ece5725-f21:~ $ cd test_hw1
yl2248@ece5725-f21:~/test_hw1 $ chmod 600 HW1.txt
yl2248@ece5725-f21:~/test_hw1 $ ls -ld HW1.txt
-rw----- 1 yl2248 students 16 Sep  8 00:17 HW1.txt
yl2248@ece5725-f21:~/test_hw1 $ cat HW1.txt
yl2248 YananLiu
yl2248@ece5725-f21:~/test_hw1 $ ls
HW1.txt
yl2248@ece5725-f21:~/test_hw1 $ █
```

## Q7:

- **Df command description:** "df" means disk free, which refers to the usage of file system disk on linux.
- **"size settings for the /home entry":** the /home directory is a "place" to store all students directories and its files. Therefore the storage size should be big enough. As seen in the picture above, the size of home/ entry is around 910G which is the biggest among others.

```
yl2248@ece5725-f21:/home $ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root        15G   3.3G   11G   24% /
devtmpfs         776M    0   776M    0% /dev
tmpfs            937M    0   937M    0% /dev/shm
tmpfs            937M   97M   840M   11% /run
tmpfs            5.0M   4.0K   5.0M    1% /run/lock
tmpfs            937M    0   937M    0% /sys/fs/cgroup
/dev/mmcblk0p1  253M   50M   203M   20% /boot
/dev/sda1       916G   737M   869G    1% /home
tmpfs            188M    0   188M    0% /run/user/1000
tmpfs            188M    0   188M    0% /run/user/1075
tmpfs            188M    0   188M    0% /run/user/1033
tmpfs            188M    0   188M    0% /run/user/1021
tmpfs            188M    0   188M    0% /run/user/1076
tmpfs            188M    0   188M    0% /run/user/1047
tmpfs            188M    0   188M    0% /run/user/1059
tmpfs            188M    0   188M    0% /run/user/1042
tmpfs            188M    0   188M    0% /run/user/1025
tmpfs            188M    0   188M    0% /run/user/1057
tmpfs            188M    0   188M    0% /run/user/1014
tmpfs            188M    0   188M    0% /run/user/1046
tmpfs            188M    0   188M    0% /run/user/1065
tmpfs            188M    0   188M    0% /run/user/1027
tmpfs            188M    0   188M    0% /run/user/1015
tmpfs            188M    0   188M    0% /run/user/1039
tmpfs            188M    0   188M    0% /run/user/1034
```

## Q8:

```
yl2248@ece5725-f21:/home $ ps -ef | grep yl2248
root      16011    499    0 00:02 ?        00:00:00 sshd: yl2248 [priv]
yl2248    16060     1    0 00:02 ?        00:00:00 /lib/systemd/systemd --user
yl2248    16064 16060    0 00:02 ?        00:00:00 (sd-pam)
yl2248    16080 16011    0 00:02 ?        00:00:00 sshd: yl2248@pts/3
yl2248    16081 16080    0 00:02 pts/3    00:00:00 -bash
yl2248    25012 16081    0 00:26 pts/3    00:00:00 ps -ef
yl2248    25013 16081    0 00:26 pts/3    00:00:00 grep --color=auto yl2248
yl2248@ece5725-f21:/home $ ps -ef | wc -l
249
yl2248@ece5725-f21:/home $
```

### Q9:

Image source: <https://www.bilibili.com/read/cv3910347/>



① is a quad-core processor which is similar to Laptop's CPU

② ethernet

③/④ USB

⑤ is the place to insert SD card similar to Laptop's disk

⑥ Wifi & BlueTooth part.

**Advantages** : Raspberry Pi is small in size and low in energy consumption. It is more portable (just like a card) and cheaper than a computer. Raspberry Pi has GPIO which can connect to external devices.

**Disadvantages** : The OS of Raspberry Pi is Linux, which is not so common. Raspberry Pi doesn't have a battery; it needs to be plugged in to power all the time. Raspberry Pi is fragile.

**Q10:**

top	htop
<ul style="list-style-type: none"><li>● Single color</li><li>● Use PID to kill process</li></ul>	<ul style="list-style-type: none"><li>● colorful</li><li>● There are bars on the top, which can display each core's memory usage.</li><li>● Faster launching than top</li><li>● Can scroll down and up to see process list and command lines as well</li><li>● Can process by mouse click</li></ul>

Htop is preferable, since it is more powerful (with many functions integrated) and easy to manipulate.