

lab 5

Q1

```
1. Open the Tilix or the terminal application. What is your present working directory?

rap@cis106: /dev/cpu/0$ pwd
/home/rap
rap@cis106:~$ cd /usr/share/themes/
rap@cis106:/usr/share/themes$ pwd
/usr/share/themes
rap@cis106:/usr/share/themes$ cd /
rap@cis106:/$ cd /dev/cpu/0
rap@cis106:/dev/cpu/0$
```

```
rap@cis106: ~/Documents$ cd
rap@cis106:~$ ls
cis106      Downloads      essentials.sh.2  Pictures      snap      Videos
Desktop     essentials.sh  la4.script3.sh  Public        student   vscode.sh
Documents   essentials.sh.1 Music           Scripts       Templates

rap@cis106:~$ cd Downloads/
rap@cis106:~/Downloads$ pwd
/home/rap/Downloads
rap@cis106:~/Downloads$ cd ../../
rap@cis106:/home$ pwd
/home
rap@cis106:/home$ cd rap/Documents/
rap@cis106:~/Documents$
```

Q2

```
Applications
Oct 30 9:42 AM
$(student): rap@cis106: ~rap@cis106: ~

1/1 v + -
rap@cis106: ~/lab5files v
rap@cis106:~$ cd /usr/share
rap@cis106:/usr/share$ ls -A ~/lab5files
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv    globe.avi      Linux.pdf    Tux.png    website.html
rap@cis106:/usr/share$ cd ~/lab5files/
rap@cis106:~/lab5files$ ls -l
total 6580
-rw-rw-r-- 1 rap rap 20471 Feb 22 2022 countries.json
-rw-rw-r-- 1 rap rap 284042 Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 rap rap 764176 Feb 22 2022 document.docx
-rw-rw-r-- 1 rap rap 742478 Feb 22 2022 globe.avi
-rw-rw-r-- 1 rap rap 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 rap rap 2600138 Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 rap rap 8704 Feb 22 2022 sample.xls
-rw-rw-r-- 1 rap rap 42777 Feb 22 2022 Tux.png
-rw-rw-r-- 1 rap rap 2114053 Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 rap rap 137453 Feb 22 2022 website.html
rap@cis106:~/lab5files$ ls -lh
total 6.5M
-rw-rw-r-- 1 rap rap 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 rap rap 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 rap rap 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 rap rap 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 rap rap 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 rap rap 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 rap rap 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 rap rap 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 rap rap 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 rap rap 135K Feb 22 2022 website.html
rap@cis106:~/lab5files$ ls -lhs
total 6.5M
-rw-rw-r-- 1 rap rap 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 rap rap 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 rap rap 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 rap rap 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 rap rap 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 rap rap 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 rap rap 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 rap rap 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 rap rap 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 rap rap 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 rap rap 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 rap rap 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 rap rap 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 rap rap 135K Feb 22 2022 website.html
rap@cis106:~/lab5files$ ls -lhSGgi
total 6.9M
1084002 -rw-rw-r-- 1 3.5M Oct 29 14:47 lab5files.zip
1085540 -rw-rw-r-- 1 3.5M Oct 29 14:47 lab5files.zip.1
1048779 -rwxrwxr-x 1 7.6K Sep 25 15:05 essentials.sh
1048772 -rw-rw-r-- 1 7.6K Sep 25 15:05 essentials.sh.1
1048604 -rw-rw-r-- 1 7.6K Sep 25 15:05 essentials.sh.2
1064767 drwxrwxr-x 8 4.0K Oct 30 09:11 cis106
1048591 drwxr-xr-x 2 4.0K Sep 25 23:15 Desktop
1048596 drwxr-xr-x 2 4.0K Sep 25 23:15 Documents
1048593 drwxr-xr-x 2 4.0K Oct 23 19:35 Downloads
1085353 drwxrwxr-x 2 4.0K Oct 30 09:26 lab5files
1048597 drwxr-xr-x 2 4.0K Sep 25 23:15 Music
1048598 drwxr-xr-x 4 4.0K Oct 13 18:06 Pictures
1048595 drwxr-xr-x 2 4.0K Sep 25 23:15 Public
1073684 drwxrwxr-x 3 4.0K Oct 23 21:14 Scripts
1070559 drwx----- 3 4.0K Sep 26 22:54 snap
1085523 drwxrwxr-x 2 4.0K Oct 30 09:16 student
1048594 drwxr-xr-x 2 4.0K Sep 25 23:15 Templates
1048599 drwxr-xr-x 2 4.0K Sep 25 23:15 Videos
1048815 -rwxrwxr-x 1 2.5K Sep 25 15:05 vscode.sh
1078391 -rw-rw-r-- 1 42 Oct 22 11:37 la4.script3.sh
rap@cis106:~$ ls -Xr
lab5files.zip essentials.sh.2 Templates Public Downloads
vscode.sh lab5files.zip.1 student Pictures Documents
la4.script3.sh essentials.sh.1 snap Music Desktop
essentials.sh Videos Scripts lab5files cis106
rap@cis106:~$ ls -AlhSGgi
total 7.0M
1084002 -rw-rw-r-- 1 3.5M Oct 29 14:47 lab5files.zip
1085540 -rw-rw-r-- 1 3.5M Oct 29 14:47 lab5files.zip.1
1048779 -rwxrwxr-x 1 7.6K Sep 25 15:05 essentials.sh
1048772 -rw-rw-r-- 1 7.6K Sep 25 15:05 essentials.sh.1
1048604 -rw-rw-r-- 1 7.6K Sep 25 15:05 essentials.sh.2
1048782 -rw----- 1 5.9K Oct 30 09:38 .bash_history
```

Q3 Challenge Question

```

Applications Oct 30 11:00 AM $(student): rap@cis106: /home/rap@cis106: /home
1: rap@cis106: /home
rap@cis106:~$ wget https://cis106.com/assets/scripts/marstenhouse.sh
--2025-10-30 09:49:08-- https://cis106.com/assets/scripts/marstenhouse.sh
Resolving cis106.com (cis106.com)... 185.199.108.153
Connecting to cis106.com (cis106.com)|185.199.108.153|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3407 (3.3K) [application/x-sh]
Saving to: 'marstenhouse.sh'

marstenhouse 100% 3.33K --.-KB/s in 0.003s

2025-10-30 09:49:08 (1.01 MB/s) - 'marstenhouse.sh' saved [3407/3407]

rap@cis106:~$ bash marstenhouse.sh

Everything in Salem's Lot is connected to that house.
You can see it from every part of the town.
It's like a beacon throwing off an energy force.

Scenario:

You have been kidnapped by Barlow's minions and brought to Marsten House.
You wake up disoriented and surrounded by darkness.
Your only light comes from your smartphone - the pwd and ls commands.
Somewhere within this House are 5 hidden keys.
Each one contains a piece of the code you need to escape.
Once you find a key, reveal its true location using realpath.
Only then will you know where you truly are.

Challenge:

1. Explore Marsten House and locate all 5 hidden keys.
2. You may only use relative paths when navigating with cd.
3. You must use absolute paths only when revealing each key's location with realpath.
4. Commands allowed: ls, pwd, cd, tree, and realpath.

```

```

Applications Oct 30 11:00 AM $(student): rap@cis106: /home/rap@cis106: /home
1: rap@cis106: /home
Documents lab5files.zip.1 student
Downloads marstenHouse Templates
essentials.sh marstenhouse.sh Videos
essentials.sh.1 Music vscode.sh
essentials.sh.2 Pictures
la4.script3.sh Public
rap@cis106:~$ cd marstenhouse
bash: cd: marstenhouse: No such file or directory
rap@cis106:~$ cd ~
rap@cis106:~$ pwd
/home/rap
rap@cis106:~$ wget https://cis106.com/assets/scripts/marstenhouse.sh
--2025-10-30 09:58:49-- https://cis106.com/assets/scripts/marstenhouse.sh
Resolving cis106.com (cis106.com)... 185.199.108.153
Connecting to cis106.com (cis106.com)|185.199.108.153|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3407 (3.3K) [application/x-sh]
Saving to: 'marstenhouse.sh.1'

marstenhouse 100% 3.33K --.-KB/s in 0s

2025-10-30 09:58:49 (6.65 MB/s) - 'marstenhouse.sh.1' saved [3407/3407]

rap@cis106:~$ chmod +x marstenhouse.sh.1
chmod: cannot access 'marstenhouse.sh.1': No such file or directory
rap@cis106:~$ marstenhouse.sh.1
bash: marstenhouse.sh.1: command not found
rap@cis106:~$ chmod +x marstenhouse.sh.1
rap@cis106:~$ bash marstenhouse.sh.1

Everything in Salem's Lot is connected to that house.
You can see it from every part of the town.
It's like a beacon throwing off an energy force.

```

```

2: rap@cis106: ~/marstenHouse
rap@cis106:~$ cd marstenHouse
rap@cis106:~/marstenHouse$ pwd
/home/rap/marstenHouse
rap@cis106:~/marstenHouse$ tree -a
.
├── basement
│   ├── .key2
│   └── master_bedroom
│       ├── basement
│       │   ├── .key1
│       │   └── .key5
│       └── master_bedroom
├── .key3
└── .key4

5 directories, 5 files
rap@cis106:~/marstenHouse$ ls
basement
rap@cis106:~/marstenHouse$ cd basement
rap@cis106:~/marstenHouse/basement$ ls
master_bedroom
rap@cis106:~/marstenHouse/basement$ realpath .key1
/home/rap/marstenHouse/basement/.key1
rap@cis106:~/marstenHouse/basement$ tree -a
.
├── .key2
├── master_bedroom
│   ├── basement
│   │   ├── .key1
│   │   └── .key5
│   └── master_bedroom
└── .key4

4 directories, 3 files
rap@cis106:~/marstenHouse$ cd master_bedroom
rap@cis106:~/marstenHouse/master_bedroom$ ls
basement
rap@cis106:~/marstenHouse/master_bedroom$ realpath .key5
/home/rap/marstenHouse/master_bedroom/.key5
rap@cis106:~/marstenHouse/master_bedroom$ cd basement
rap@cis106:~/marstenHouse/master_bedroom/basement$ ls
master_bedroom
rap@cis106:~/marstenHouse/master_bedroom/basement$ realpath .key1
/home/rap/marstenHouse/master_bedroom/basement/.key1
rap@cis106:~/marstenHouse/master_bedroom/basement$ cd ../../..
rap@cis106:~/marstenHouse$ ls
basement
rap@cis106:~/marstenHouse$ realpath .key3
/home/rap/marstenHouse/.key3
rap@cis106:~/marstenHouse$ realpath .key4
/home/rap/marstenHouse/.key4
rap@cis106:~/marstenHouse$

```

```
3: rap@cis106: /home ▾  
rap@cis106:~$ cd ~/marstenHouse  
rap@cis106:~/marstenHouse$ pwd  
/home/rap/marstenHouse  
rap@cis106:~/marstenHouse$ cd basement  
rap@cis106:~/marstenHouse/basement$ ls  
master_bedroom  
rap@cis106:~/marstenHouse/basement$ realpath .key2  
/home/rap/marstenHouse/basement/.key2  
rap@cis106:~/marstenHouse/basement$ cd master_bedrom  
bash: cd: master_bedrom: No such file or directory  
rap@cis106:~/marstenHouse/basement$ ls  
master_bedroom  
rap@cis106:~/marstenHouse/basement$ realpath .key5  
/home/rap/marstenHouse/basement/.key5  
rap@cis106:~/marstenHouse/basement$ cd basement  
bash: cd: basement: No such file or directory  
rap@cis106:~/marstenHouse/basement$ ls  
master_bedroom  
rap@cis106:~/marstenHouse/basement$ realpath .key1  
/home/rap/marstenHouse/basement/.key1  
rap@cis106:~/marstenHouse/basement$ cd ../../..  
rap@cis106:/home$ ls  
rap  
rap@cis106:/home$ realpath .key3  
/home/.key3  
rap@cis106:/home$ realpath .key4  
/home/.key4  
rap@cis106:/home$
```

```
3: rap@cis106: ~ ▾  
rap@cis106:~$ echo "marstenHouse  
> | .key3 [KEY 3]  
> | .key4 [KEY 4]  
> | basement  
> | | .key2 [KEY 2]  
> | | master_bedroom  
> | | | .key5 [KEY 5]  
> | | | basement  
> | | | | .key1 [KEY 1]"
```

```
Applications Oct 30 10:52 AM 20% 57% 38% 0.0kB 0.0kB
$(student): rap@cis106: ~/marstenHouse/basement/master_bedroom/basementrap@cis106: ~/marstenHouse/basement/master_bedroom/basement

1: rap@cis106: /home
bash: cd: marstenhouse: No such file or directory
rap@cis106:~$ cd ~
rap@cis106:~$ pwd
/home/rap
rap@cis106:~$ wget https://cis106.com/assets/scripts/marstenhouse.sh
--2025-10-30 09:58:49-- https://cis106.com/assets/scripts/marstenhouse.sh
Resolving cis106.com (cis106.com)... 185.199.108.153
Connecting to cis106.com (cis106.com)|185.199.108.153|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3407 (3.3K) [application/x-sh]
Saving to: 'marstenhouse.sh.1'

marstenhouse 100% 3.33K --.-KB/s in 0s

2025-10-30 09:58:49 (6.65 MB/s) - 'marstenhouse.sh.1' saved [3407/3407]

rap@cis106:~$ chmod +x marstenhouse.sh.1
chmod: cannot access 'marstenhouse.sh.1': No such file or directory
rap@cis106:~$ marstenhouse.sh.1
bash: marstenhouse.sh.1: command not found
rap@cis106:~$ chmod +x marstenhouse.sh.1
rap@cis106:~$ bash marstenhouse.sh.1

Everything in Salem's Lot is connected to the house.
You can see it from every part of the town.

2: rap@cis106: ~/marstenHouse/basement/master_bedroom/basement
├── .key3
└── .key4

5 directories, 5 files
rap@cis106:~/marstenHouse$ ls
basement
rap@cis106:~/marstenHouse$ cd basement
rap@cis106:~/marstenHouse/basement$ ls
master_bedroom
rap@cis106:~/marstenHouse/basement$ realpath .key1
/home/rap/marstenHouse/basement/.key1
rap@cis106:~/marstenHouse/basement$ tree -a
.
├── .key2
└── master_bedroom
    ├── basement
    │   ├── .key1
    │   └── .key5
    └── master_bedroom

4 directories, 3 files
rap@cis106:~/marstenHouse$ realpath .key2/home/rap/marstenHouse/basement/.key2
/home/rap/marstenHouse/basement/master_bedroom/.key2
rap@cis106:~/marstenHouse/basement$ cd master_bedroom
rap@cis106:~/marstenHouse/basement/master_bedroom$ ls
basement master_bedroom
rap@cis106:~/marstenHouse/basement/master_bedroom$ realpath .key5
/home/rap/marstenHouse/basement/master_bedroom/.key5
rap@cis106:~/marstenHouse/basement/master_bedroom$ cd basement
rap@cis106:~/marstenHouse/basement/master_bedroom/basement$ ls
rap@cis106:~/marstenHouse/basement/master_bedroom/basement$ realpath .key1
/home/rap/marstenHouse/basement/master_bedroom/basement/.key1
rap@cis106:~/marstenHouse/basement/master_bedroom/basement$ cd ..
```