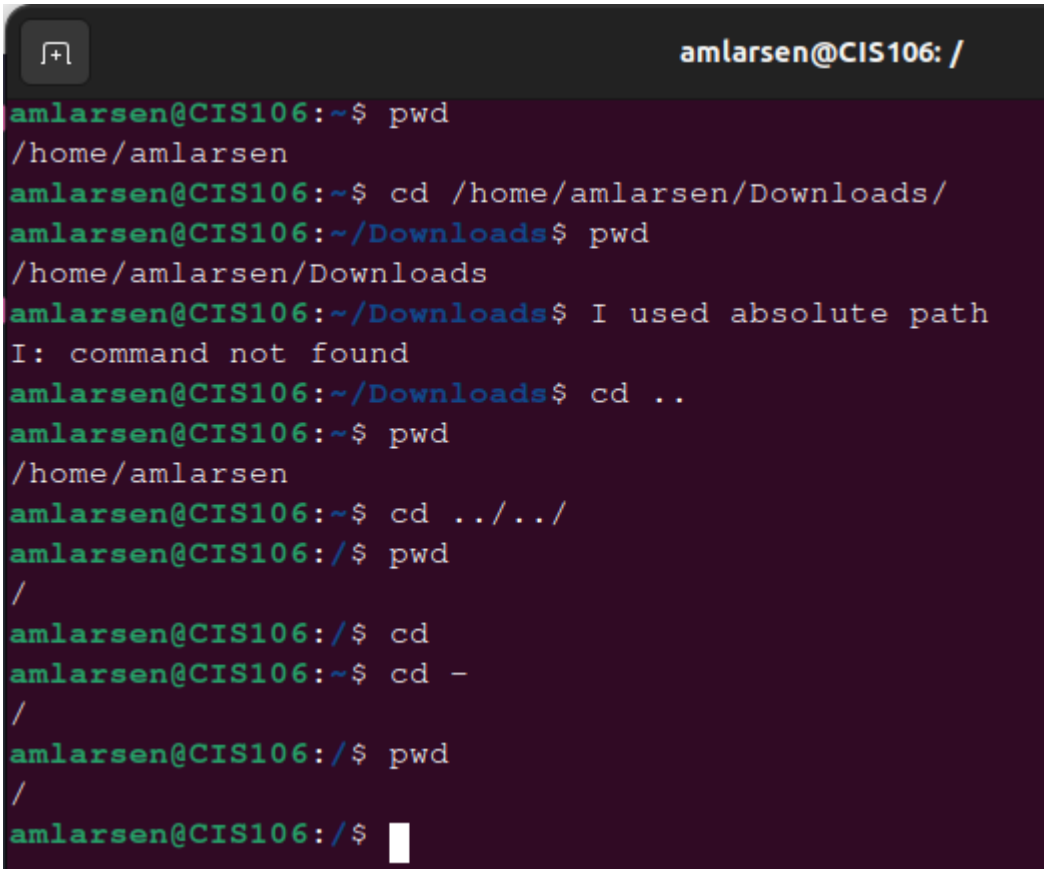
Week Report 4

Practice from the presentation The Linux File system:

Practice 1 Solution



Practice 2 Solution

```
amlarsen@CIS106:~$ wget https://cis106.com/assets/practicels.tar.xz
--2023-03-13 20:37:10--  https://cis106.com/assets/practicels.tar.xz
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: 2229212 (2.1M) [application/x-xz]
Saving to: 'practicels.tar.xz'

practicels.tar.xz   100%[===================>]   2.12M  --.-KB/s    in 0.1s

2023-03-13 20:37:10 (22.1 MB/s) - 'practicels.tar.xz' saved [2229212/2229212]

amlarsen@CIS106:~$ tar Jxf practicels.tar.xz
amlarsen@CIS106:~$ cd practicels/
amlarsen@CIS106:~/practicels$ ls
book.txt       history-debian.pdf  movie.mp4   song.mp3      tux-penguin.gif
countries.xml  homework.docx       people.csv  tux-nobg.png
amlarsen@CIS106:~/practicels$ ls -a
.          countries.xml       movie.mp4   tux-nobg.png
..         history-debian.pdf  people.csv  tux-penguin.gif
book.txt   homework.docx       song.mp3
amlarsen@CIS106:~/practicels$ ls -l
total 2932
-rw-rw-r-- 1 amlarsen amlarsen    1043 Feb 27  2022 book.txt
-rw-rw-r-- 1 amlarsen amlarsen   23972 Feb 27  2022 countries.xml
-rw-rw-r-- 1 amlarsen amlarsen  163057 Feb 27  2022 history-debian.pdf
-rw-rw-r-- 1 amlarsen amlarsen  111303 Feb 22  2022 homework.docx
-rw-rw-r-- 1 amlarsen amlarsen 1570024 Feb 27  2022 movie.mp4
-rw-rw-r-- 1 amlarsen amlarsen  284042 Feb 27  2022 people.csv
-rw-rw-r-- 1 amlarsen amlarsen  764176 Feb 27  2022 song.mp3
-rw-rw-r-- 1 amlarsen amlarsen   21314 Feb 27  2022 tux-nobg.png
-rw-rw-r-- 1 amlarsen amlarsen   44299 Jan 31  2020 tux-penguin.gif
amlarsen@CIS106:~/practicels$ ls -lh
total 2.9M
-rw-rw-r-- 1 amlarsen amlarsen 1.1K Feb 27  2022 book.txt
-rw-rw-r-- 1 amlarsen amlarsen  24K Feb 27  2022 countries.xml
-rw-rw-r-- 1 amlarsen amlarsen 160K Feb 27  2022 history-debian.pdf
-rw-rw-r-- 1 amlarsen amlarsen 109K Feb 22  2022 homework.docx
-rw-rw-r-- 1 amlarsen amlarsen 1.5M Feb 27  2022 movie.mp4
-rw-rw-r-- 1 amlarsen amlarsen 278K Feb 27  2022 people.csv
-rw-rw-r-- 1 amlarsen amlarsen 747K Feb 27  2022 song.mp3
-rw-rw-r-- 1 amlarsen amlarsen  21K Feb 27  2022 tux-nobg.png
-rw-rw-r-- 1 amlarsen amlarsen  44K Jan 31  2020 tux-penguin.gif
```

```
amlarsen@CIS106:~/practicels$ ls -lh
total 2.9M
-rw-rw-r-- 1 amlarsen amlarsen 1.1K Feb 27  2022 book.txt
-rw-rw-r-- 1 amlarsen amlarsen  24K Feb 27  2022 countries.xml
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-rw-rw-r-- 1 amlarsen amlarsen  21K Feb 27  2022 tux-nobg.png
-rw-rw-r-- 1 amlarsen amlarsen  44K Jan 31  2020 tux-penguin.gif
amlarsen@CIS106:~/practicels$ ls -lht
total 2.9M
-rw-rw-r-- 1 amlarsen amlarsen  24K Feb 27  2022 countries.xml
-rw-rw-r-- 1 amlarsen amlarsen 278K Feb 27  2022 people.csv
-rw-rw-r-- 1 amlarsen amlarsen 747K Feb 27  2022 song.mp3
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```

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-rw-rw-r-- 1 amlarsen amlarsen 160K Feb 27  2022 history-debian.pdf
-rw-rw-r-- 1 amlarsen amlarsen  21K Feb 27  2022 tux-nobg.png
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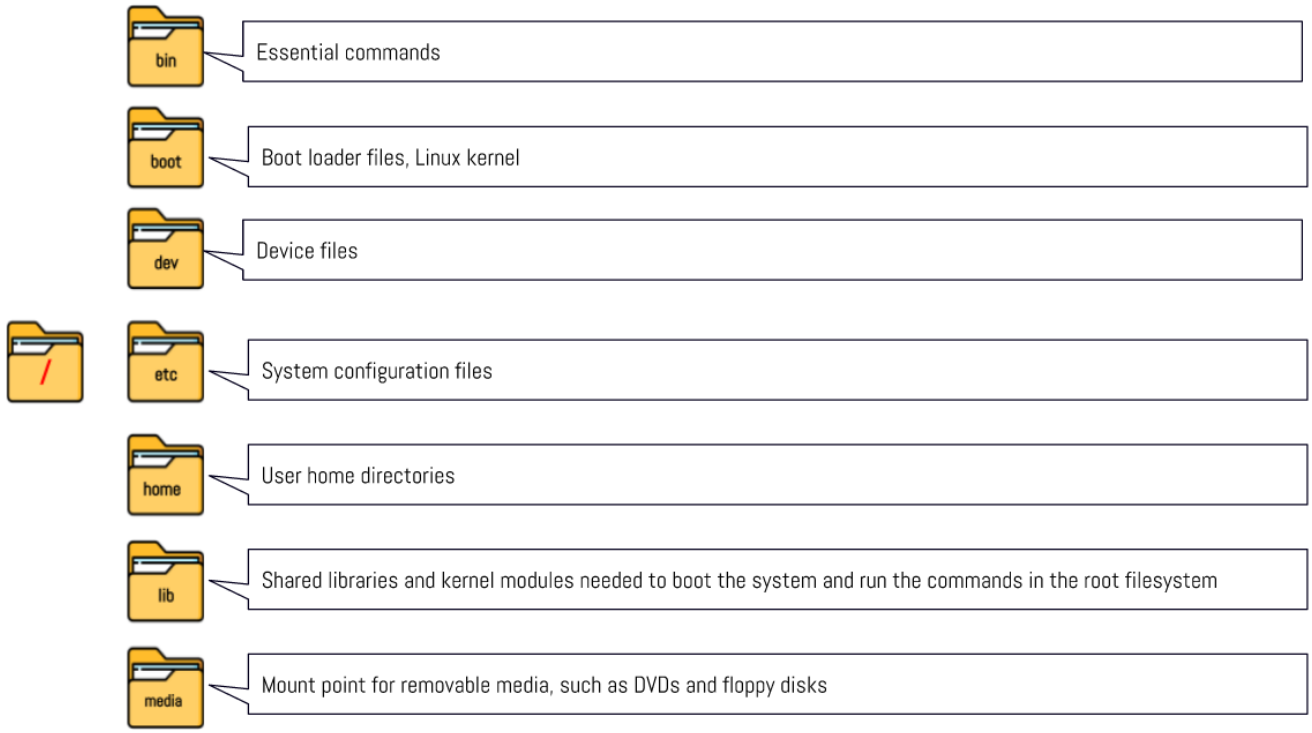
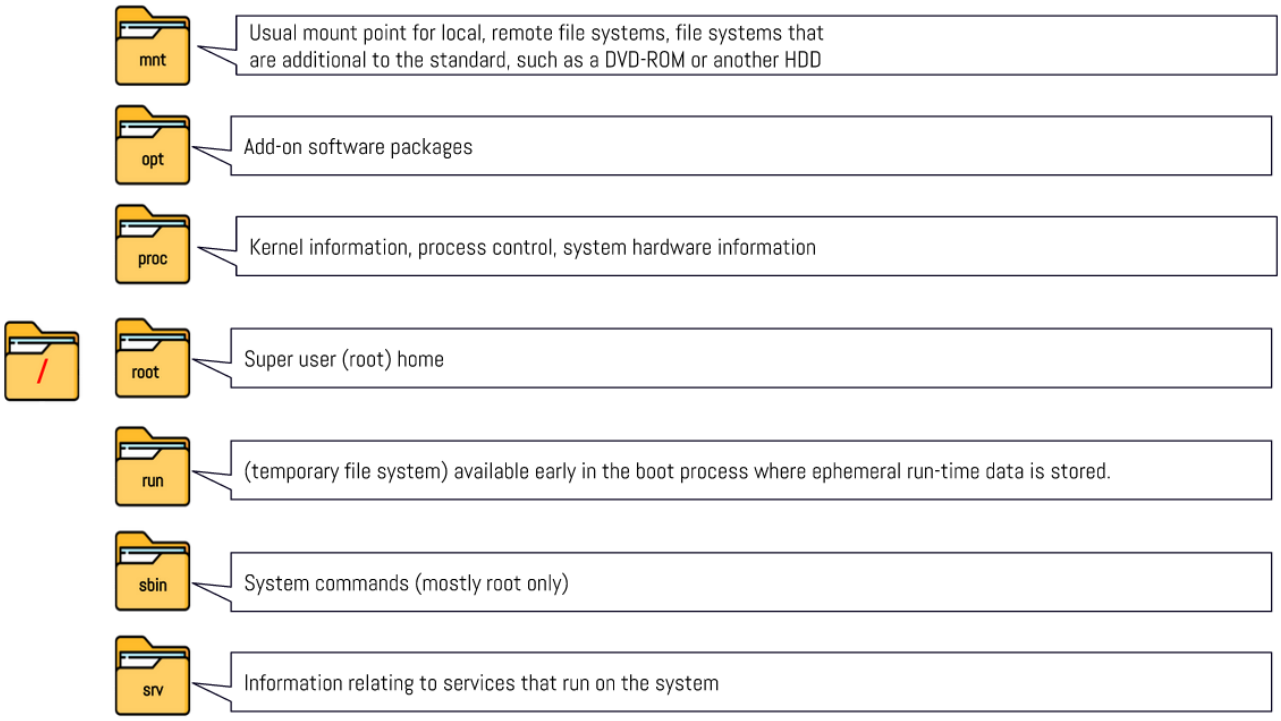
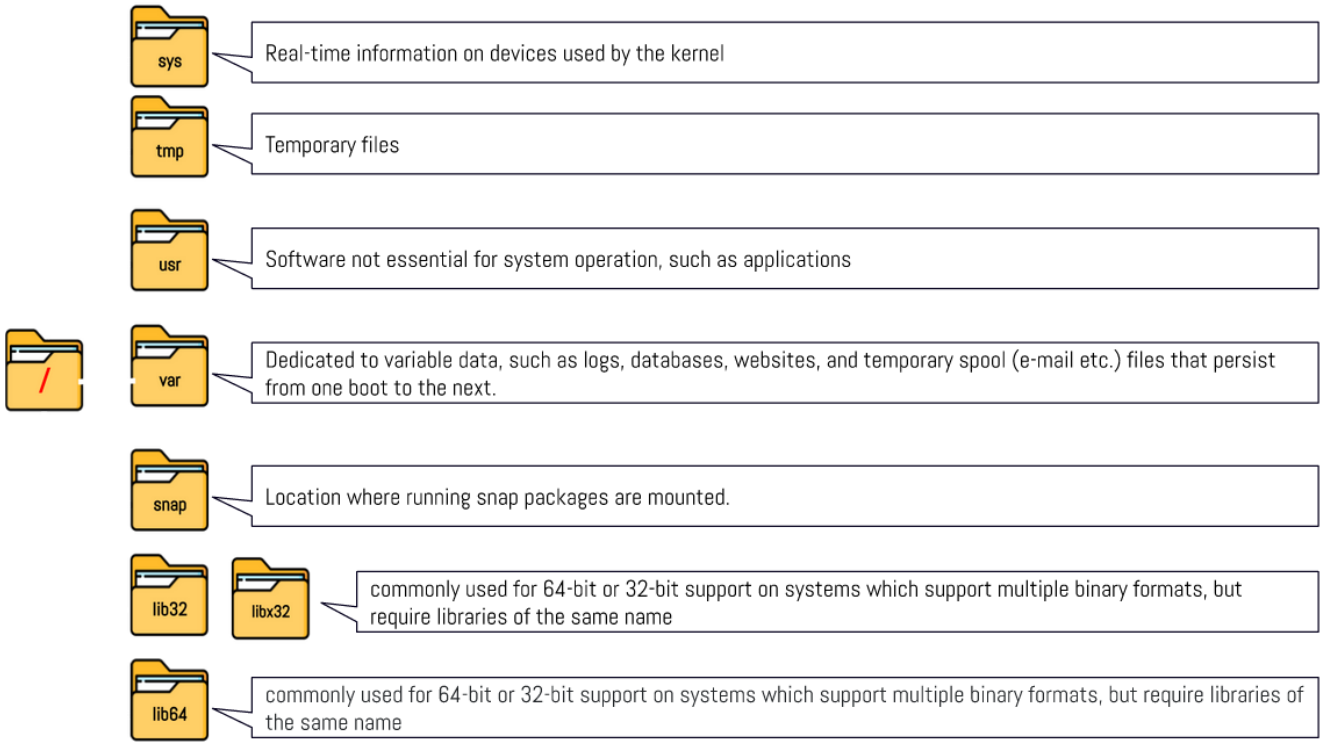
-rw-rw-r-- 1 amlarsen amlarsen 109K Feb 22  2022 homework.docx
-rw-rw-r-- 1 amlarsen amlarsen  44K Jan 31  2020 tux-penguin.gif
amlarsen@CIS106:~/practicels$ ls -lhgGS
total 2.9M
-rw-rw-r-- 1 1.5M Feb 27  2022 movie.mp4
-rw-rw-r-- 1 747K Feb 27  2022 song.mp3
-rw-rw-r-- 1 278K Feb 27  2022 people.csv
-rw-rw-r-- 1 160K Feb 27  2022 history-debian.pdf
-rw-rw-r-- 1 109K Feb 22  2022 homework.docx
-rw-rw-r-- 1  44K Jan 31  2020 tux-penguin.gif
-rw-rw-r-- 1  24K Feb 27  2022 countries.xml
-rw-rw-r-- 1  21K Feb 27  2022 tux-nobg.png
-rw-rw-r-- 1 1.1K Feb 27  2022 book.txt
amlarsen@CIS106:~/practicels$ ls -mr
tux-penguin.gif, tux-nobg.png, song.mp3, people.csv, movie.mp4, homework.docx,
history-debian.pdf, countries.xml, book.txt
amlarsen@CIS106:~/practicels$ ls -1X
people.csv
homework.docx
tux-penguin.gif
song.mp3
movie.mp4
history-debian.pdf
tux-nobg.png
book.txt
countries.xml
```

The Linux File system directories and their purpose:


/
bin
Essential commands
boot
Boot loader files, Linux kernel
dev
Device files
etc
System configuration files
home
User home directories
lib
Shared libraries and kernel modules needed to boot the system and run the commands in the root filesystem
media
Mount point for removable media, such as DVDs and floppy disks


/
mnt
Usual mount point for local, remote file systems, file systems that are additional to the standard, such as a DVD-ROM or another HDD
opt
Add-on software packages
proc
Kernel information, process control, system hardware information
root
Super user (root) home
run
(temporary file system) available early in the boot process where ephemeral run-time data is stored.
sbin
System commands (mostly root only)
srv
Information relating to services that run on the system



All the commands for navigating the filesystem

command	what it does	Syntax	Example
pwd	Prints out the current directory	pwd	`home/amlarsen`
list	Shows a list of files in directory	ls 'letter'	`ls --help`
cd	Changes the working directory	cd 'directory'	`cd /usr/share`

Basic terminology

- **File system** - The way files are stored and organized
- **Current directory** - The current directory that you are in
- **parent directory** - The current directory that you are in and have the options to move to another directory.
- **the difference between your home directory and the home directory** -Absolute path starts from the root and relative and relative path goes to the file that is in the current "directory"
- **pathname** -it indicates the location of the file in the filesystem
- **relative path** the location of a file starting from the current working directory
- **absolute path** - the location of a file starting at the root of the file system