

Lab 4 The Linux fs

Question 1

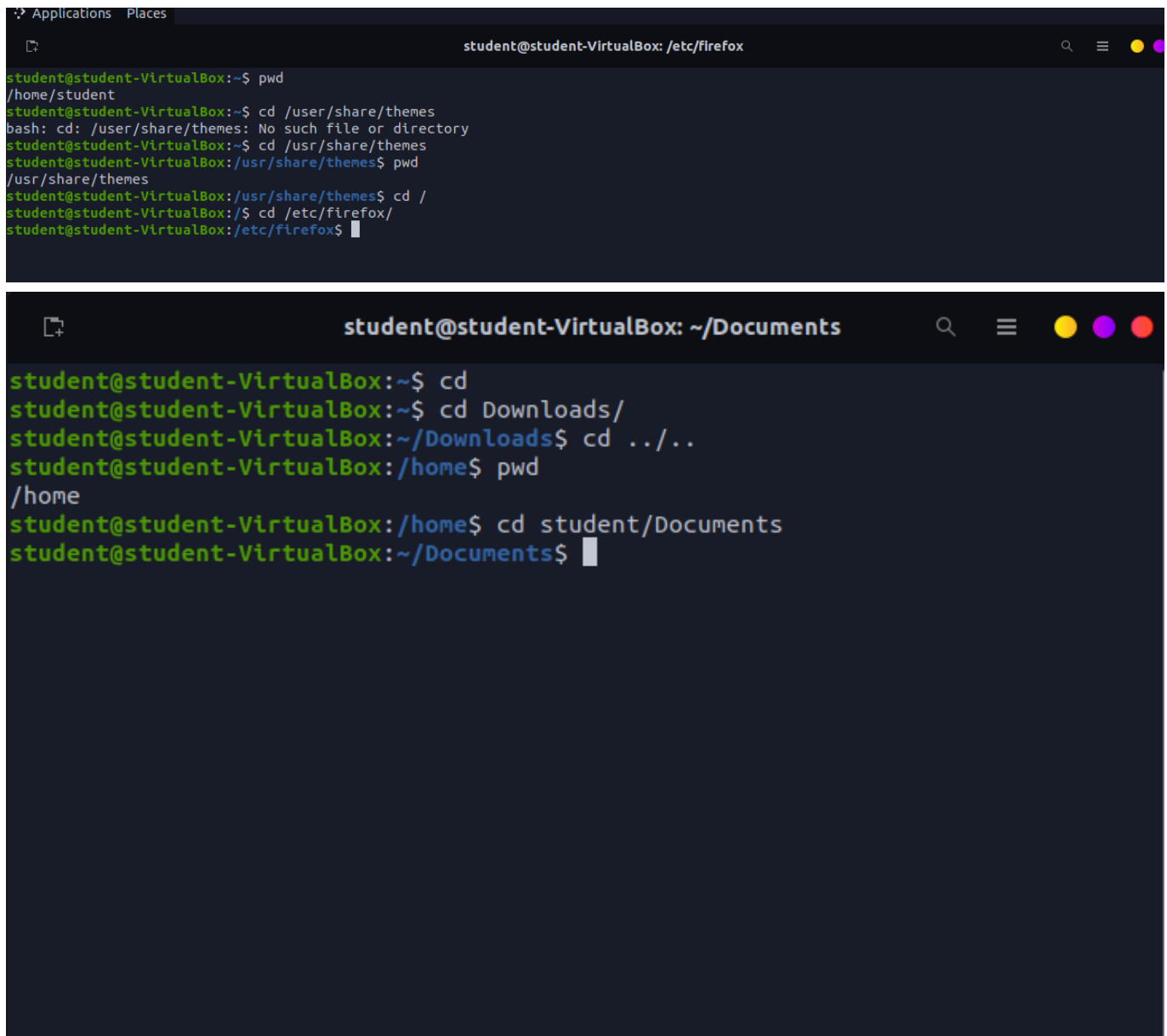
Table 1

Directory	Function
bin	essential commands
dev	device files
etc	system config files
home	user home directory
media	mounting point for removable media
opt	add on software packages
proc	kernel information
srv	files that have information on services that run on the system
usr	nonessential software
var	variable data

Table 2

Command	What it does	Syntax	Example
cd	changes the directory to a location	cd + location	cd \$HOME
pwd	lists current working directory	pwd	pwd
ls	lists files and folders in a directory	ls + option + directory	ls -a ~/Downloads

Question 2



```
student@student-VirtualBox: ~$ pwd
/home/student
student@student-VirtualBox:~$ cd /user/share/themes
bash: cd: /user/share/themes: No such file or directory
student@student-VirtualBox:~$ cd /usr/share/themes
student@student-VirtualBox:/usr/share/themes$ pwd
/usr/share/themes
student@student-VirtualBox:/usr/share/themes$ cd /
student@student-VirtualBox:/$ cd /etc/firefox/
student@student-VirtualBox:/etc/firefox$

student@student-VirtualBox: ~/Documents

student@student-VirtualBox:~$ cd
student@student-VirtualBox:~$ cd Downloads/
student@student-VirtualBox:~/Downloads$ cd ../../
student@student-VirtualBox:/home$ pwd
/home
student@student-VirtualBox:/home$ cd student/Documents
student@student-VirtualBox:~/Documents$
```

Question 3

```

student@student-VirtualBox:~$ cd /usr/share
student@student-VirtualBox:/usr/share$ ls /home/student/lab4files
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv    globe.avi      Linux.pdf     Tux.png     website.html
student@student-VirtualBox:/usr/share$ cd ~/lab4files
student@student-VirtualBox:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 student student 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 student student 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 student student 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 student student 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 student student 76 Feb 22 14:18 helloWorld.c
-rw-rw-r-- 1 student student 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 student student 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 student student 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 student student 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 student student 135K Feb 22 14:16 website.html
student@student-VirtualBox:~/lab4files$ ls -lhs
total 6.5M
-rw-rw-r-- 1 student student 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 student student 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 student student 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 student student 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 student student 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 student student 135K Feb 22 14:16 website.html
-rw-rw-r-- 1 student student 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 student student 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 student student 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 student student 76 Feb 22 14:18 helloWorld.c
student@student-VirtualBox:~/lab4files$ ls -lhSgGi
total 6.5M
1327160 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
1327162 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
1327165 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
1327166 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
1327164 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
1327171 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
1327161 -rw-rw-r-- 1 42K Feb 22 14:10 Tux.png
1327163 -rw-rw-r-- 1 20K Feb 22 14:16 countries.json
1327168 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
1327167 -rw-rw-r-- 1 76 Feb 22 14:18 helloWorld.c
student@student-VirtualBox:~/lab4files$ ls -Xr
sample.xls  Tux.png  Ubuntu.pdf  Linux.pdf  countries.json  website.html  document.docx  csvfile.csv  helloWorld.c  globe.avi
student@student-VirtualBox:~/lab4files$ 

```

Question 4

```

student@student-VirtualBox:~$ cd /etc
student@student-VirtualBox:/etc$ tree ~/lab4files
/home/student/lab4files
├── countries.json
├── csvfile.csv
├── document.docx
├── globe.avi
├── helloWorld.c
├── Linux.pdf
├── sample.xls
├── Tux.png
├── Ubuntu.pdf
└── website.html

0 directories, 10 files
student@student-VirtualBox:/etc$ cd ~/Downloads
student@student-VirtualBox:~/Downloads$ tree ../lab4files/ -fph
../lab4files
├── [-rw-rw-r-- 20K]  ../lab4files/countries.json
├── [-rw-rw-r-- 277K]  ../lab4files/csvfile.csv
├── [-rw-rw-r-- 746K]  ../lab4files/document.docx
├── [-rw-rw-r-- 725K]  ../lab4files/globe.avi
├── [-rw-rw-r-- 76]    ../lab4files/helloWorld.c
├── [-rw-rw-r-- 2.5M]  ../lab4files/Linux.pdf
├── [-rw-rw-r-- 8.5K]  ../lab4files/sample.xls
├── [-rw-rw-r-- 42K]   ../lab4files/Tux.png
├── [-rw-rw-r-- 2.0M]  ../lab4files/Ubuntu.pdf
└── [-rw-rw-r-- 134K]  ../lab4files/website.html

```

```
0 directories, 10 files
student@student-VirtualBox:~/Downloads$ tree -tug
.
├── [student student ] Screenshot_11.png
├── [student student ] Screenshot_12.png
├── [student student ] Screenshot_9.png
├── [student student ] Vortex-Dark-Icons.tar.gz
├── [student student ] Sweet-Dark-v40.tar.xz
├── [student student ] Oreo-Border.tar.xz
└── [student student ] lab4files.zip

0 directories, 7 files
student@student-VirtualBox:~/Downloads$ tree -X
<?xml version="1.0" encoding="UTF-8"?>
<tree>
  <directory name=".">
    <file name="lab4files.zip"></file>
    <file name="Oreo-Border.tar.xz"></file>
    <file name="Screenshot_11.png"></file>
    <file name="Screenshot_12.png"></file>
    <file name="Screenshot_9.png"></file>
    <file name="Sweet-Dark-v40.tar.xz"></file>
    <file name="Vortex-Dark-Icons.tar.gz"></file>
  </directory>
  <report>
    <directories>0</directories>
    <files>7</files>
  </report>
</tree>
student@student-VirtualBox:~/Downloads$ tree -J
[{"type":"directory","name": ".", "contents": [
  {"type":"file","name":"lab4files.zip"},
  {"type":"file","name":"Oreo-Border.tar.xz"},
  {"type":"file","name":"Screenshot_11.png"},
  {"type":"file","name":"Screenshot_12.png"},
  {"type":"file","name":"Screenshot_9.png"},
  {"type":"file","name":"Sweet-Dark-v40.tar.xz"},
  {"type":"file","name":"Vortex-Dark-Icons.tar.gz"}
]},
{"type":"report","directories":0,"files":7}]
```

Question 5


```

Usage:
  exa [options] [files...]

META OPTIONS
  -?, --help          show list of command-line options
  -v, --version       show version of exa

DISPLAY OPTIONS
  -1, --oneline       display one entry per line
  -l, --long          display extended file metadata as a table
  -G, --grid          display entries as a grid (default)
  -x, --across        sort the grid across, rather than downwards
  -R, --recurse       recurse into directories
  -T, --tree          recurse into directories as a tree
  -F, --classify      display type indicator by file names
  --colo[u]r=WHEN    when to use terminal colours (always, auto, never)
  --colo[u]r-scale    highlight levels of file sizes distinctly
  --icons             display icons
  --no-icons          don't display icons (always overrides --icons)

FILTERING AND SORTING OPTIONS
  -a, --all           show hidden and 'dot' files
  -d, --list-dirs     list directories as files; don't list their contents
  -L, --level DEPTH  limit the depth of recursion
  -r, --reverse       reverse the sort order
  -s, --sort SORT_FIELD which field to sort by
  --group-directories-first list directories before other files
  -D, --only-dirs     list only directories
  -I, --ignore-glob GLOBS glob patterns (pipe-separated) of files to ignore
  --git-ignore        ignore files mentioned in '.gitignore'
Valid sort fields:    name, Name, extension, Extension, size, type,
                      modified, accessed, created, inode, and none.
                      date, time, old, and new all refer to modified.

LONG VIEW OPTIONS
  -b, --binary        list file sizes with binary prefixes
  -B, --bytes         list file sizes in bytes, without any prefixes
  -g, --group         list each file's group
  -h, --header        add a header row to each column
  -H, --links         list each file's number of hard links
  -i, --inode         list each file's inode number
  -m, --modified      use the modified timestamp field
  -n, --numeric       list numeric user and group IDs
  -S, --blocks        show number of file system blocks
  -t, --time FIELD    which timestamp field to list (modified, accessed, created)
  -u, --accessed      use the accessed timestamp field
  -U, --created       use the created timestamp field
  --changed           use the changed timestamp field
  --time-style        how to format timestamps (default, iso, long-iso, full-iso)
  --no-permissions    suppress the permissions field
  --octal-permissions list each file's permission in octal format
  --no-filesize       suppress the filesize field
  --no-user           suppress the user field
  --no-time           suppress the time field
  --git              list each file's Git status, if tracked or ignored
  -@, --extended      list each file's extended attributes and sizes
student@student-VirtualBox:~$

```

```

student@student-VirtualBox:~$ exa -lh lab4files/
Permissions Size User Date Modified Name
.rw-rw-r-- 20k student 22 Feb 14:16 countries.json
.rw-rw-r-- 284k student 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k student 22 Feb 14:13 document.docx
.rw-rw-r-- 742k student 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 student 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M student 22 Feb 14:10 Linux.pdf

```

```
.rw-rw-r-- 8.7k student 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k student 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M student 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k student 22 Feb 14:16 website.html
student@student-VirtualBox:~$ exa -lhU --no-user lab4files
Permissions Size Date Created Name
.rw-rw-r-- 20k 12 Mar 21:00 countries.json
.rw-rw-r-- 284k 12 Mar 21:00 csvfile.csv
.rw-rw-r-- 764k 12 Mar 21:00 document.docx
.rw-rw-r-- 742k 12 Mar 21:00 globe.avi
.rw-rw-r-- 76 12 Mar 21:00 helloWorld.c
.rw-rw-r-- 2.6M 12 Mar 21:00 Linux.pdf
.rw-rw-r-- 8.7k 12 Mar 21:00 sample.xls
.rw-rw-r-- 43k 12 Mar 21:00 Tux.png
.rw-rw-r-- 2.1M 12 Mar 21:00 Ubuntu.pdf
.rw-rw-r-- 137k 12 Mar 21:00 website.html
student@student-VirtualBox:~$
```