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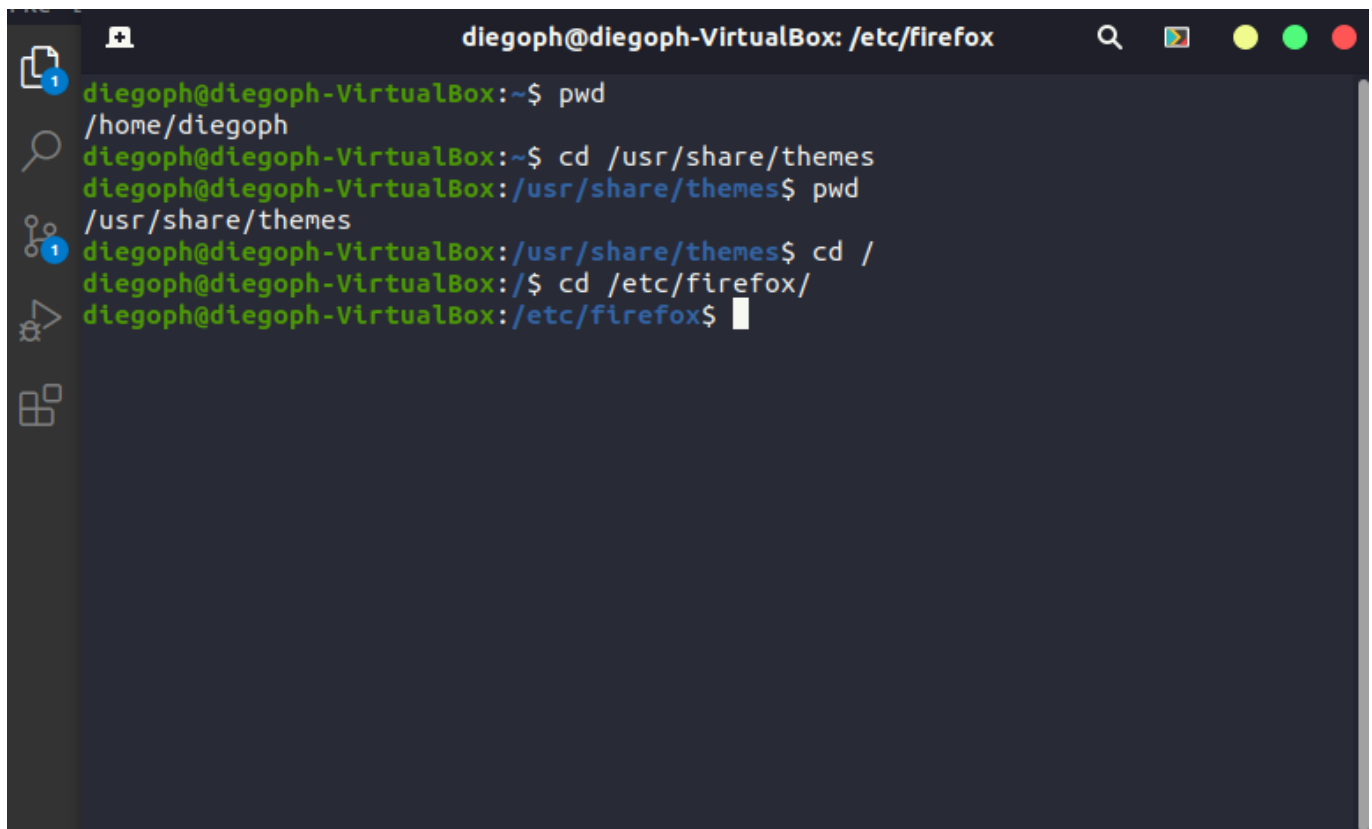
Lab 4 The Linux Filesystem

Question 1

Directory	Function
bin	Essential commands
dev	Device files
etc	System configuration files
home	User home directories
media	MOunt point removable media, such as DVDs and floppy disks
opt	Add-on software packages
proc	Kernel information, process control, system hardware information
srv	Information relating to services that run on the system
usr	Software not essential for system operation, such as applications
var	Dedicated to variable data, such as logs, databases, websites, and temporary spool (e-mail etc.) files that persist from one boot to the next

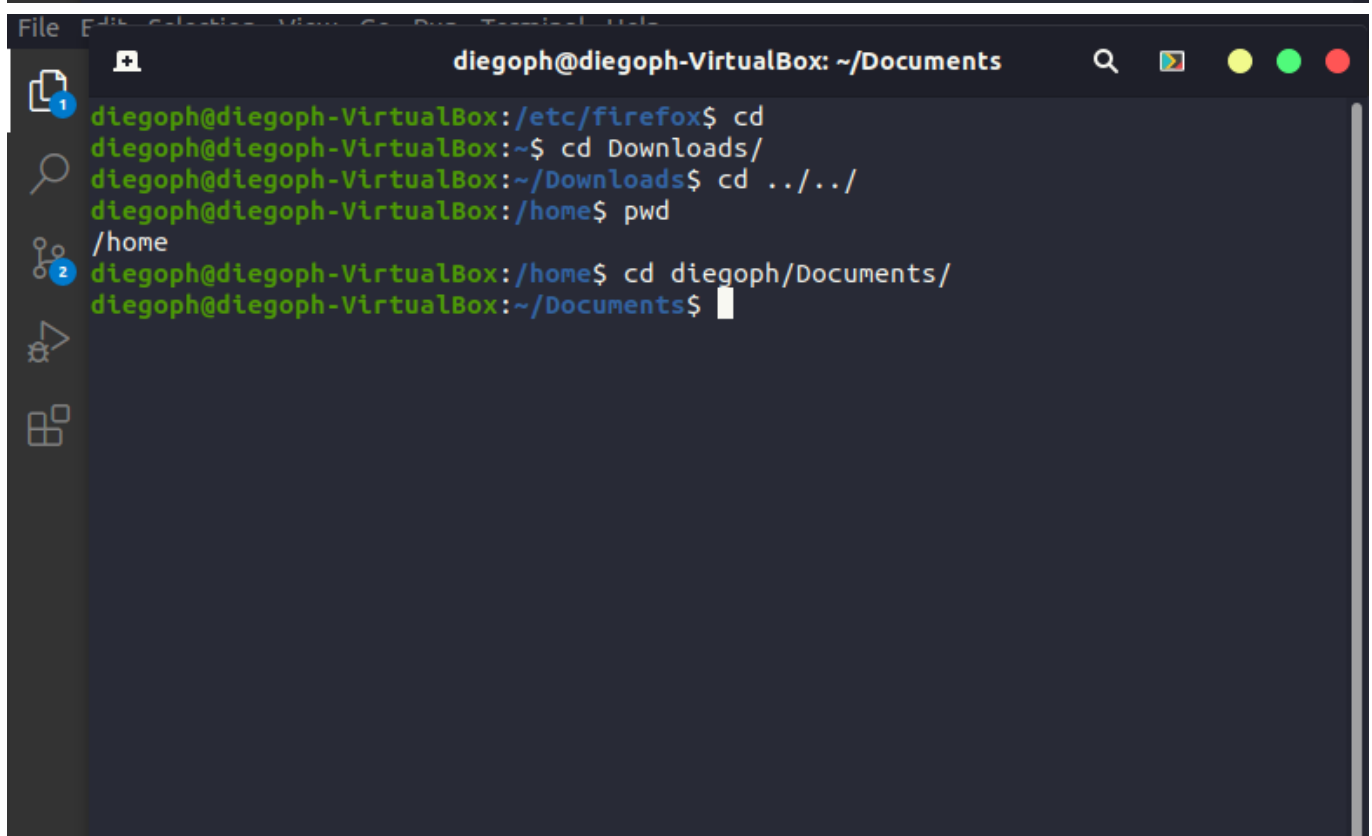
Command	WHat it does	Syntax	Example
pwd	Display the current working directory	pwd	pwd /home/diego (on the bottom)
cd	Changes the current working directory	cd + destination	cd /home/\$USER/Documents
ls	Used for listing the content ag a given directory or the file/directory itself	ls + directory	ls -a ~/Picture

Question 2



A terminal window titled "diegoph@diegoph-VirtualBox: /etc/firefox" with standard window controls. The terminal shows a series of commands and their outputs:

```
diegoph@diegoph-VirtualBox:~$ pwd
/home/diegoph
diegoph@diegoph-VirtualBox:~$ cd /usr/share/themes
diegoph@diegoph-VirtualBox:/usr/share/themes$ pwd
/usr/share/themes
diegoph@diegoph-VirtualBox:/usr/share/themes$ cd /
diegoph@diegoph-VirtualBox:/$ cd /etc/firefox/
diegoph@diegoph-VirtualBox:/etc/firefox$
```



A terminal window titled "diegoph@diegoph-VirtualBox: ~/Documents" with standard window controls. The terminal shows a series of commands and their outputs:

```
diegoph@diegoph-VirtualBox:/etc/firefox$ cd
diegoph@diegoph-VirtualBox:~$ cd Downloads/
diegoph@diegoph-VirtualBox:~/Downloads$ cd ../../
diegoph@diegoph-VirtualBox:/home$ pwd
/home
diegoph@diegoph-VirtualBox:/home$ cd diegoph/Documents/
diegoph@diegoph-VirtualBox:~/Documents$
```

Question 3

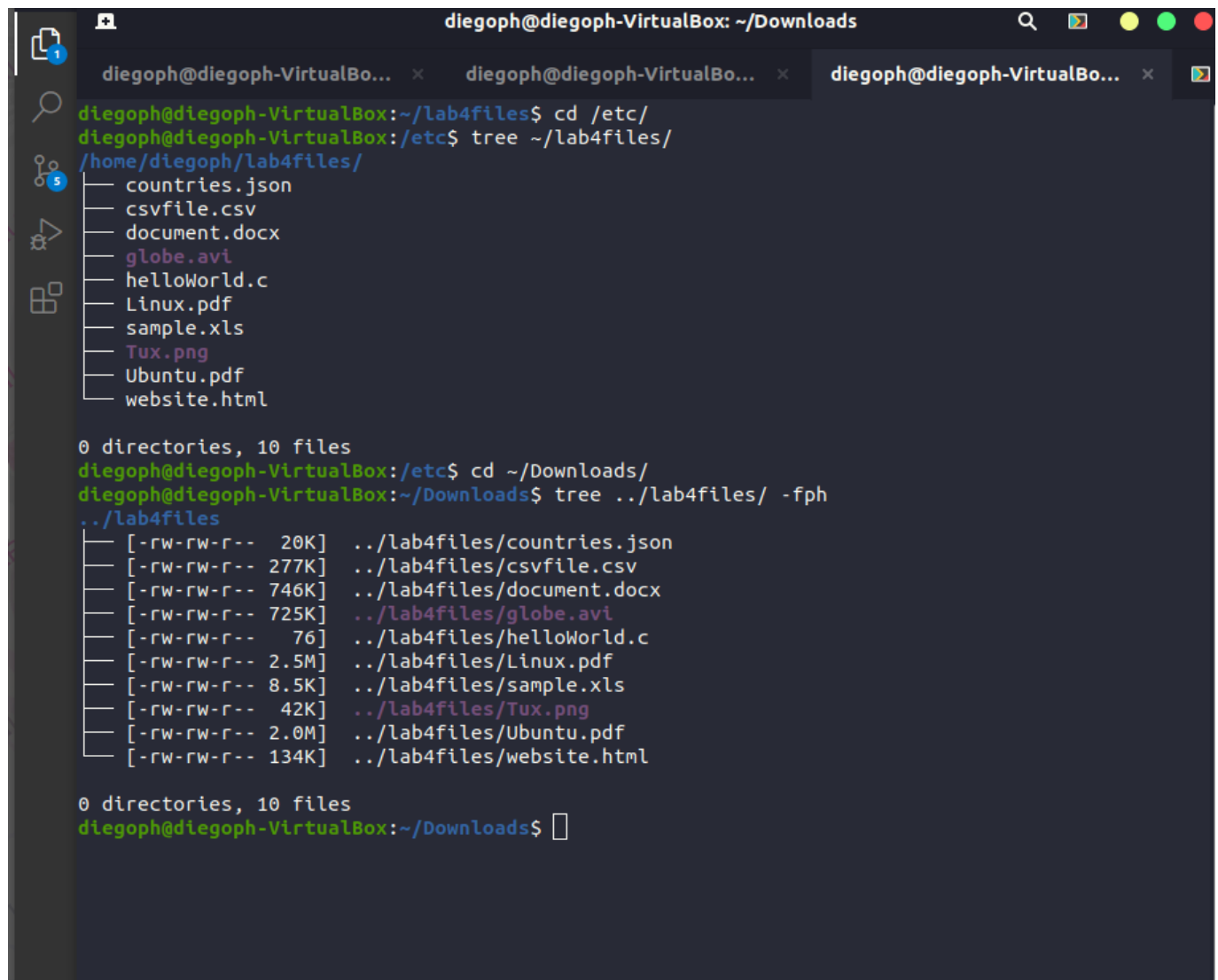
```
diegoph@diegoph-VirtualBox: ~/lab4files

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

```
diegoph@diegoph-VirtualBox: ~/lab4files

diegoph@diegoph-VirtualBox:~/lab4files$ ls -lhSgGi
total 6.5M
2370004 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
2370006 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
2370009 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
2370010 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
2370008 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
2372987 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
2370005 -rw-rw-r-- 1 42K Feb 22 14:10 Tux.png
2370007 -rw-rw-r-- 1 20K Feb 22 14:16 countries.json
2372986 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
2370011 -rw-rw-r-- 1 76 Feb 22 14:18 helloWorld.c
diegoph@diegoph-VirtualBox:~/lab4files$ ls -Xr
sample.xls  Ubuntu.pdf  countries.json  document.docx  helloWorld.c
Tux.png     Linux.pdf   website.html    csvfile.csv    globe.avi
diegoph@diegoph-VirtualBox:~/lab4files$
```

Question 4



A terminal window titled 'diegoph@diegoph-VirtualBox: ~/Downloads' with three tabs. The first tab shows the user navigating to `/etc/` and running `tree ~/lab4files/`, which lists 10 files in `/home/diegoph/lab4files/`. The second tab shows the user running `cd ~/Downloads/` and `tree ../lab4files/ -fph`, displaying a detailed tree view of the same files with permissions and sizes. The third tab is empty.

```
diegoph@diegoph-VirtualBox: ~/Downloads
diegoph@diegoph-VirtualBo... x  diegoph@diegoph-VirtualBo... x  diegoph@diegoph-VirtualBo... x
diegoph@diegoph-VirtualBox:~/lab4files$ cd /etc/
diegoph@diegoph-VirtualBox:/etc$ tree ~/lab4files/
/home/diegoph/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
diegoph@diegoph-VirtualBox:/etc$ cd ~/Downloads/
diegoph@diegoph-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
diegoph@diegoph-VirtualBox:~/Downloads$
```

Question 5

```

diegoph@diegoph-VirtualBox:~$ exa --help
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
diegoph@diegoph-VirtualBox:~$

```

```
diegoph@diegoph-VirtualBox: ~  
-rw-rw-r-- 20k diegoph 22 Feb 14:16 countries.json  
-rw-rw-r-- 284k diegoph 22 Feb 14:15 csvfile.csv  
-rw-rw-r-- 764k diegoph 22 Feb 14:13 document.docx  
-rw-rw-r-- 742k diegoph 22 Feb 14:12 globe.avi  
-rw-rw-r-- 76 diegoph 22 Feb 14:18 helloWorld.c  
-rw-rw-r-- 2.6M diegoph 22 Feb 14:10 Linux.pdf  
-rw-rw-r-- 8.7k diegoph 22 Feb 14:12 sample.xls  
-rw-rw-r-- 43k diegoph 22 Feb 14:10 Tux.png  
-rw-rw-r-- 2.1M diegoph 22 Feb 14:11 Ubuntu.pdf  
-rw-rw-r-- 137k diegoph 22 Feb 14:16 website.html  
diegoph@diegoph-VirtualBox:~$ exa -T lab4files  
lab4files  
├── countries.json  
├── csvfile.csv  
├── document.docx  
├── globe.avi  
├── helloWorld.c  
├── Linux.pdf  
├── sample.xls  
├── Tux.png  
├── Ubuntu.pdf  
└── website.html
```

```
diegoph@diegoph-VirtualBox: ~  
diegoph@diegoph-VirtualBox: ~  
diegoph@diegoph-VirtualBox:~$ exa --no-user lab4files/  
countries.json document.docx helloWorld.c sample.xls Ubuntu.pdf  
csvfile.csv globe.avi Linux.pdf Tux.png website.html  
diegoph@diegoph-VirtualBox:~$
```