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Name: Rimonur Rashid cis 106 semester spring 2022

## Lab 4 The linux filesystem

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### Question 1

Table 1

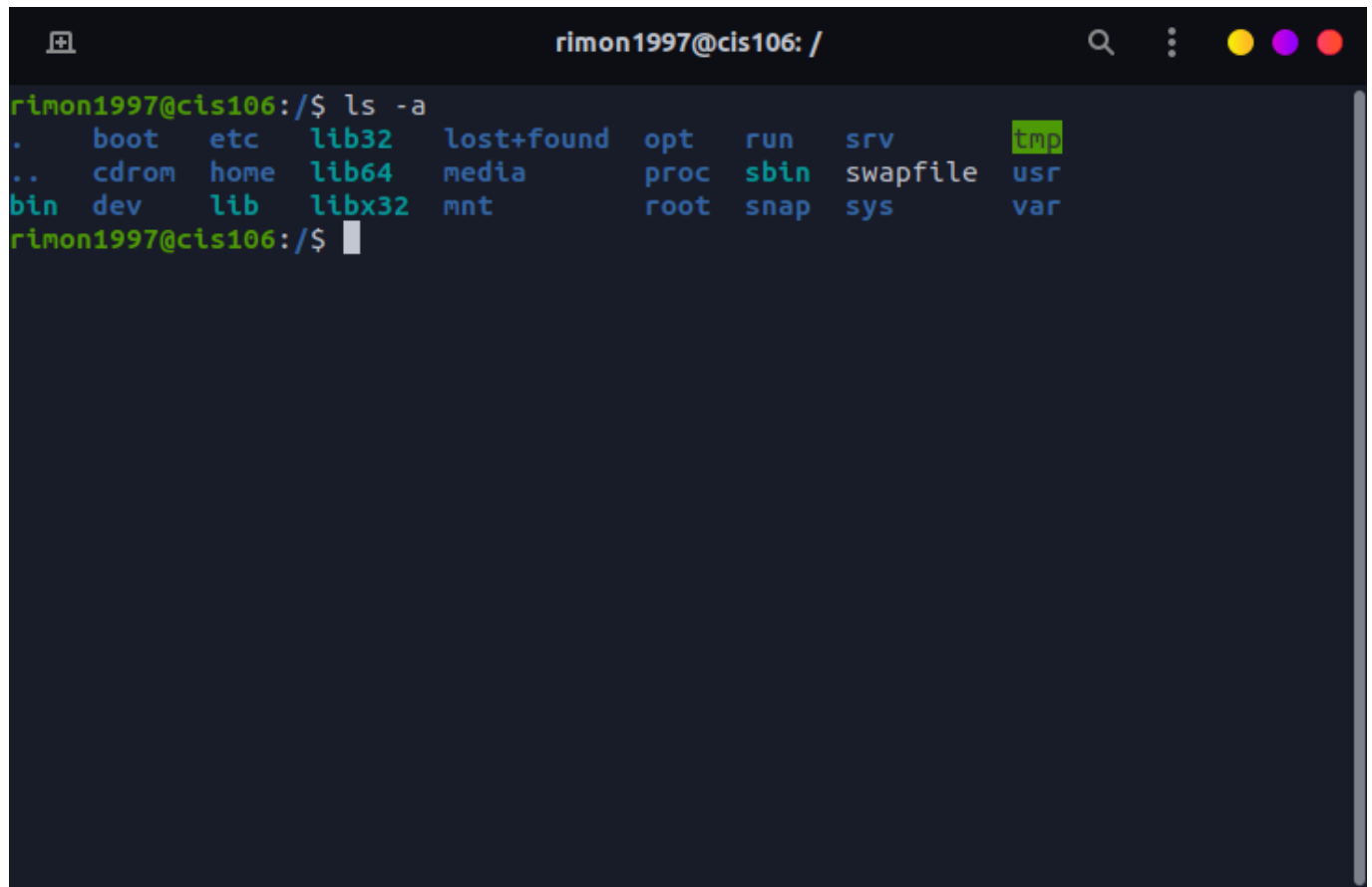
Directory	Function
BIN	ESSENTIAL COMMANDS
DEV	DEVICE FILE
ETC	SYSTEM CONFIGURATION
HOME	USER HOME DIRECTORIES
MEDIA	MOUNT POINT FOR REMOVABLE MEDIA,SUCH AS DVDs AND FLOPPY DISKS
OPT	ADD-ON SOFTWARE PACKAGES
PROC	KERNEL INFORMATION, PROCESS CONTROL,SYSTEM HARDWARE INFORMATION
SRV	INFORMATION RELATING TO SERVICE THAT RUN ON THE SYSTEM
USR	SOFTWARE NOY ESSENTIAL FOR SYSTEM OPERATION,SUCH AS APPLICATION

Table 2

command	What is does	Syntax	Example
CD	USED FOR CHANGING THE CURRENT WORKING DIRECTORY	<code>cd+destination</code>	<code>cd</code> <code>~/downloads</code>
PWD	USED FOR DISPLAYING THE CURRENT WORKING DIRECTORY	<code>~/option + pwd</code>	<code>~/logs\$ pwd</code> <code>-l</code>
LS	USED FOR DISPLAYING ALL FILES INSIDE A GIVEN DIRECTORY	<code>ls+ option</code> <code>~/documents</code>	<code>ls -x</code> <code>~/documents</code>

```
rimon1997@cis106: /  
rimon1997@cis106:~$ pwd  
/home/rimon1997  
rimon1997@cis106:~$ cd Downloads/  
rimon1997@cis106:~/Downloads$ pwd  
/home/rimon1997/Downloads  
rimon1997@cis106:~/Downloads$ cd ..  
rimon1997@cis106:~$ pwd  
/home/rimon1997  
rimon1997@cis106:~$ cd ../../  
rimon1997@cis106:/$ pwd  
/  
rimon1997@cis106:/$ cd  
rimon1997@cis106:~$ cd -  
/  
rimon1997@cis106:/$ pwd  
/  
rimon1997@cis106:/$
```

```
rimon1997@cis106: /  
rimon1997@cis106:/$ wget https://cis106.com/assets/practicels.tar.xz  
--2022-03-11 20:32:29-- 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]  
practicels.tar.xz: Permission denied  
  
Cannot write to 'practicels.tar.xz' (Success).  
rimon1997@cis106:/$ tar Jxf practicels.tar,xz  
tar (child): practicels.tar,xz: Cannot open: No such file or directory  
tar (child): Error is not recoverable: exiting now  
tar: Child returned status 2  
tar: Error is not recoverable: exiting now  
rimon1997@cis106:/$ is  
is: command not found  
rimon1997@cis106:/$ ls  
bin    dev    lib    libx32  mnt    root   snap   sys    var  
boot   etc    lib32  lost+found  opt    run    srv    tmp  
cdrom  home  lib64  media    proc   sbin   swapfile  usr  
rimon1997@cis106:/$
```



A terminal window titled "rimon1997@cis106: /" with standard window controls (search, menu, and three colored buttons). The terminal shows the command "ls -a" being executed, resulting in a list of system directories. The output is as follows:

```
rimon1997@cis106:/$ ls -a
.      boot  etc    lib32  lost+found  opt   run   srv    tmp
..     cdrom  home   lib64  media       proc  sbin  swapfile  usr
bin    dev     lib    libx32  mnt         root  snap  sys      var
rimon1997@cis106:/$
```

```

rimon1997@cis106:/$ ls -l
total 2097232
lrwxrwxrwx    1 root root          7 Feb 18 18:11 bin -> usr/bin
drwxr-xr-x    4 root root    4096 Mar  9 14:16 boot
drwxrwxr-x    2 root root    4096 Feb 18 18:14 cdrom
drwxr-xr-x   21 root root   4360 Mar  9 16:10 dev
drwxr-xr-x  143 root root  12288 Mar  9 14:17 etc
drwxr-xr-x    3 root root    4096 Feb 18 18:15 home
lrwxrwxrwx    1 root root          7 Feb 18 18:11 lib -> usr/lib
lrwxrwxrwx    1 root root          9 Feb 18 18:11 lib32 -> usr/lib32
lrwxrwxrwx    1 root root          9 Feb 18 18:11 lib64 -> usr/lib64
lrwxrwxrwx    1 root root         10 Feb 18 18:11 libx32 -> usr/libx32
drwx-----    2 root root  16384 Feb 18 18:10 lost+found
drwxr-xr-x    2 root root    4096 Aug 19  2021 media
drwxr-xr-x    2 root root    4096 Aug 19  2021 mnt
drwxr-xr-x    2 root root    4096 Aug 19  2021 opt
dr-xr-xr-x  298 root root      0 Mar  9 13:35 proc
drwx-----    4 root root    4096 Mar  9 13:35 root
drwxr-xr-x   34 root root    980 Mar 11 20:14 run
lrwxrwxrwx    1 root root          8 Feb 18 18:11/sbin -> usr/sbin
drwxr-xr-x   14 root root    4096 Feb 24 20:25 snap
drwxr-xr-x    2 root root    4096 Aug 19  2021 srv
-rw-----    1 root root 2147483648 Feb 18 18:11 swapfile
dr-xr-xr-x   13 root root      0 Mar  9 13:35 sys
drwxrwxrwt   20 root root    4096 Mar 11 20:35 tmp
drwxr-xr-x   14 root root    4096 Aug 19  2021 usr
drwxr-xr-x   14 root root    4096 Aug 19  2021 var
rimon1997@cis106:/$

```

```
rimon1997@cis106:/$ ls -lh
total 2.1G
lrwxrwxrwx    1 root root    7 Feb 18 18:11 bin -> usr/bin
drwxr-xr-x    4 root root 4.0K Mar  9 14:16 boot
drwxrwxr-x    2 root root 4.0K Feb 18 18:14 cdrom
drwxr-xr-x   21 root root 4.3K Mar  9 16:10 dev
drwxr-xr-x  143 root root  12K Mar  9 14:17 etc
drwxr-xr-x    3 root root 4.0K Feb 18 18:15 home
lrwxrwxrwx    1 root root    7 Feb 18 18:11 lib -> usr/lib
lrwxrwxrwx    1 root root    9 Feb 18 18:11 lib32 -> usr/lib32
lrwxrwxrwx    1 root root    9 Feb 18 18:11 lib64 -> usr/lib64
lrwxrwxrwx    1 root root   10 Feb 18 18:11 libx32 -> usr/libx32
drwx-----   2 root root  16K Feb 18 18:10 lost+found
drwxr-xr-x    2 root root 4.0K Aug 19  2021 media
drwxr-xr-x    2 root root 4.0K Aug 19  2021 mnt
drwxr-xr-x    2 root root 4.0K Aug 19  2021 opt
dr-xr-xr-x  299 root root    0 Mar  9 13:35 proc
drwx-----   4 root root 4.0K Mar  9 13:35 root
drwxr-xr-x   34 root root  980 Mar 11 20:14 run
lrwxrwxrwx    1 root root    8 Feb 18 18:11/sbin -> usr/sbin
drwxr-xr-x   14 root root 4.0K Feb 24 20:25 snap
drwxr-xr-x    2 root root 4.0K Aug 19  2021 srv
-rw-----   1 root root 2.0G Feb 18 18:11 swapfile
dr-xr-xr-x   13 root root    0 Mar  9 13:35 sys
drwxrwxrwt   20 root root 4.0K Mar 11 20:36 tmp
drwxr-xr-x   14 root root 4.0K Aug 19  2021 usr
drwxr-xr-x   14 root root 4.0K Aug 19  2021 var
rimon1997@cis106:/$
```

```
rimon1997@cis106:/$ ls -lht
total 2.1G
drwxrwxrwt  20 root root  4.0K Mar 11 20:37 tmp
drwxr-xr-x  34 root root   980 Mar 11 20:14 run
drwxr-xr-x  21 root root  4.3K Mar  9 16:10 dev
drwxr-xr-x 143 root root   12K Mar  9 14:17 etc
drwxr-xr-x   4 root root  4.0K Mar  9 14:16 boot
drwx-----  4 root root  4.0K Mar  9 13:35 root
dr-xr-xr-x 299 root root    0 Mar  9 13:35 proc
dr-xr-xr-x  13 root root    0 Mar  9 13:35 sys
drwxr-xr-x  14 root root  4.0K Feb 24 20:25 snap
drwxr-xr-x   3 root root  4.0K Feb 18 18:15 home
drwxrwxr-x   2 root root  4.0K Feb 18 18:14 cdrom
lrwxrwxrwx   1 root root    8 Feb 18 18:11 sbin -> usr/sbin
lrwxrwxrwx   1 root root    7 Feb 18 18:11 lib -> usr/lib
lrwxrwxrwx   1 root root    9 Feb 18 18:11 lib32 -> usr/lib32
lrwxrwxrwx   1 root root    9 Feb 18 18:11 lib64 -> usr/lib64
lrwxrwxrwx   1 root root   10 Feb 18 18:11 libx32 -> usr/libx32
lrwxrwxrwx   1 root root    7 Feb 18 18:11 bin -> usr/bin
-rw-----   1 root root 2.0G Feb 18 18:11 swapfile
drwx-----  2 root root   16K Feb 18 18:10 lost+found
drwxr-xr-x  14 root root  4.0K Aug 19  2021 var
drwxr-xr-x  14 root root  4.0K Aug 19  2021 usr
drwxr-xr-x   2 root root  4.0K Aug 19  2021 media
drwxr-xr-x   2 root root  4.0K Aug 19  2021 mnt
drwxr-xr-x   2 root root  4.0K Aug 19  2021 opt
drwxr-xr-x   2 root root  4.0K Aug 19  2021 srv
rimon1997@cis106:/$
```

```

rimon1997@cis106:/$ ls -lhGS
total 2.1G
-rw----- 1 2.0G Feb 18 18:11 swapfile
drwx----- 2 16K Feb 18 18:10 lost+found
drwxr-xr-x 143 12K Mar 9 14:17 etc
drwxr-xr-x 21 4.3K Mar 9 16:10 dev
drwxr-xr-x 4 4.0K Mar 9 14:16 boot
drwxrwxr-x 2 4.0K Feb 18 18:14 cdrom
drwxr-xr-x 3 4.0K Feb 18 18:15 home
drwxr-xr-x 2 4.0K Aug 19 2021 media
drwxr-xr-x 2 4.0K Aug 19 2021 mnt
drwxr-xr-x 2 4.0K Aug 19 2021 opt
drwx----- 4 4.0K Mar 9 13:35 root
drwxr-xr-x 14 4.0K Feb 24 20:25 snap
drwxr-xr-x 2 4.0K Aug 19 2021 srv
drwxrwxrwt 20 4.0K Mar 11 20:38 tmp
drwxr-xr-x 14 4.0K Aug 19 2021 usr
drwxr-xr-x 14 4.0K Aug 19 2021 var
drwxr-xr-x 34 980 Mar 11 20:14 run
lrwxrwxrwx 1 10 Feb 18 18:11 libx32 -> usr/libx32
lrwxrwxrwx 1 9 Feb 18 18:11 lib32 -> usr/lib32
lrwxrwxrwx 1 9 Feb 18 18:11 lib64 -> usr/lib64
lrwxrwxrwx 1 8 Feb 18 18:11 sbin -> usr/sbin
lrwxrwxrwx 1 7 Feb 18 18:11 bin -> usr/bin
lrwxrwxrwx 1 7 Feb 18 18:11 lib -> usr/lib
dr-xr-xr-x 299 0 Mar 9 13:35 proc
dr-xr-xr-x 13 0 Mar 9 13:35 sys
rimon1997@cis106:/$

```

```

rimon1997@cis106:/$ ls -mr
var, usr, tmp, sys, swapfile, srv, snap, sbin, run, root, proc, opt, mnt, media, lost+found, libx32, lib64, lib32, lib, home, etc, dev, cdrom, boot, bin
rimon1997@cis106:/$ ls -lx
bin boot cdrom dev etc home lib lib32 lib64 libx32 lost+found media mnt opt proc root run sbin snap srv swapfile sys tmp usr var
rimon1997@cis106:/$

```

```

rimon1997@cis106:/$ pwd
/
rimon1997@cis106:/$ cd
rimon1997@cis106:~$ cd /
rimon1997@cis106:/$ cd /share/themes
bash: cd: /share/themes: No such file or directory
rimon1997@cis106:/$ cd /home/music
bash: cd:/home/music: No such file or directory
rimon1997@cis106:/$ ls -A ~
.bash_history  cis_106      Documents  .icons     Pictures   snap        .themes      .vboxclient-seamless.pid
.bash_logout  .CIS106.png Downloads  .local     .pkg       .ssh        .vboxclient-clipboard.pid  Videos
.bashrc       .config     .gitconfig .mozilla   .profile   .sudo_as_admin_successful .vboxclient-display-svg-x11.pid .vscode
.cache        Desktop     .gnupg     Music      Public     Templates   .vboxclient-draganddrop.pid
rimon1997@cis106:/$ cd; ls -tX githubrepo/
ls: cannot access 'githubrepo/': No such file or directory
rimon1997@cis106:~$ ls -rR ~/githubrepo/
ls: cannot access '/home/rimon1997/githubrepo/': No such file or directory
rimon1997@cis106:~$ ls -lh ~
total 40K
drwxrwxr-x 7 rimon1997 rimon1997 4.0K Mar  4 17:50 cis_106
drwxr-xr-x 2 rimon1997 rimon1997 4.0K Feb 24 20:32 Desktop
drwxr-xr-x 2 rimon1997 rimon1997 4.0K Feb 18 18:26 Documents
drwxr-xr-x 2 rimon1997 rimon1997 4.0K Mar  4 17:49 Downloads
drwxr-xr-x 2 rimon1997 rimon1997 4.0K Feb 18 18:26 Music
drwxr-xr-x 2 rimon1997 rimon1997 4.0K Feb 18 18:26 Pictures
drwxr-xr-x 2 rimon1997 rimon1997 4.0K Feb 18 18:26 Public
drwx----- 4 rimon1997 rimon1997 4.0K Feb 18 19:23 snap
drwxr-xr-x 2 rimon1997 rimon1997 4.0K Feb 18 18:26 Templates
drwxr-xr-x 2 rimon1997 rimon1997 4.0K Feb 18 18:26 Videos
rimon1997@cis106:~$ ls -lgg -full-time ~
ls: invalid option -- '-'
Try 'ls --help' for more information.
rimon1997@cis106:~$

```

## Question 2

```

rimon1997@cis106:~$ pwd
/home/rimon1997
rimon1997@cis106:~$ cd /usr/share/themes/
bash: cd: /usr/share/themes/: No such file or directory
rimon1997@cis106:~$ cd /
rimon1997@cis106:/$ cd /etc/firefox/
rimon1997@cis106:/etc/firefox$

```

```

rimon1997@cis106:~$ cd
rimon1997@cis106:~$ cd Downloads/
rimon1997@cis106:~/Downloads$ cd ../../
rimon1997@cis106:/home$ pwd
/home
rimon1997@cis106:/home$ cd rimon1997/Documents/
rimon1997@cis106:~/Documents$

```

## Question 3



```

rimon1997@cis106:~$ cd /usr/share/
rimon1997@cis106:/usr/share$ ls /home/rimon1997/lab4files/
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv    globe.avi      Linux.pdf     Tux.png     website.html
rimon1997@cis106:/usr/share$ cd ~/lab4files/
rimon1997@cis106:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 rimon1997 rimon1997 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 rimon1997 rimon1997 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 rimon1997 rimon1997 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 rimon1997 rimon1997 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 rimon1997 rimon1997 76 Feb 22 14:18 helloWorld.c
-rw-rw-r-- 1 rimon1997 rimon1997 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 rimon1997 rimon1997 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 rimon1997 rimon1997 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 rimon1997 rimon1997 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 rimon1997 rimon1997 135K Feb 22 14:16 website.html
rimon1997@cis106:~/lab4files$ ls -lhs
total 6.5M
-rw-rw-r-- 1 rimon1997 rimon1997 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 rimon1997 rimon1997 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 rimon1997 rimon1997 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 rimon1997 rimon1997 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 rimon1997 rimon1997 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 rimon1997 rimon1997 135K Feb 22 14:16 website.html
-rw-rw-r-- 1 rimon1997 rimon1997 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 rimon1997 rimon1997 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 rimon1997 rimon1997 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 rimon1997 rimon1997 76 Feb 22 14:18 helloWorld.c
rimon1997@cis106:~/lab4files$

```

```

rimon1997@cis106:~/lab4files$ ls -lhSglt
total 6.5M
3540756 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
3540758 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
3540761 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
3540762 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
3540760 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
3540765 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
3540757 -rw-rw-r-- 1 42K Feb 22 14:10 Tux.png
3540759 -rw-rw-r-- 1 20K Feb 22 14:16 countries.json
3540764 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
3540763 -rw-rw-r-- 1 76 Feb 22 14:18 helloWorld.c
rimon1997@cis106:~/lab4files$ ls -Xr
sample.xls  Tux.png  Ubuntu.pdf  Linux.pdf  countries.json  website.html  document.docx  csvfile.csv  helloWorld.c  globe.avi
rimon1997@cis106:~/lab4files$

```

## Question 4



```

rimon1997@cis106:~/lab4files$ ls -lhSgG
total 6.5M
3540756 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
3540758 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
3540761 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
3540762 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
3540760 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
3540765 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
3540757 -rw-rw-r-- 1 42K Feb 22 14:10 Tux.png
3540759 -rw-rw-r-- 1 20K Feb 22 14:16 countries.json
3540764 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
3540763 -rw-rw-r-- 1 76 Feb 22 14:18 helloWorld.c
rimon1997@cis106:~/lab4files$ ls -Xr
sample.xls  Tux.png  Ubuntu.pdf  Linux.pdf  countries.json  website.html  document.docx  csvfile.csv  helloWorld.c  globe.avi
rimon1997@cis106:~/lab4files$ cd /etc/
rimon1997@cis106:/etc$ tree ~/lab4files/
/home/rimon1997/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
rimon1997@cis106:/etc$

```

```

rimon1997@cis106: ~/Downloads

rimon1997@cis106:~/Downloads$ tree ../labfiles/ -fph
../labfiles [error opening dir]

0 directories, 0 files
rimon1997@cis106:~/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
rimon1997@cis106:~/Downloads$ tree /lab4files/ -Dg
/lab4files/ [error opening dir]

0 directories, 0 files
rimon1997@cis106:~/Downloads$ tree ../lab4files/ -dg
../lab4files/

0 directories
rimon1997@cis106:~/Downloads$ tree ../lab4files/ -Dg
../lab4files/
├── [rimon1997 Feb 22 14:16] countries.json
├── [rimon1997 Feb 22 14:15] csvfile.csv
├── [rimon1997 Feb 22 14:13] document.docx
├── [rimon1997 Feb 22 14:12] globe.avi
├── [rimon1997 Feb 22 14:18] helloWorld.c
└── [rimon1997 Feb 22 14:10] Linux.pdf

```

```

— [rimon1997 Feb 22 14:12] sample.xls
— [rimon1997 Feb 22 14:10] Tux.png
— [rimon1997 Feb 22 14:11] Ubuntu.pdf
— [rimon1997 Feb 22 14:16] website.html

```

```
0 directories, 10 files
```

```
rimon1997@cis106:~/Downloads$ tree ../lab4files/ -X
```

```

<?xml version="1.0" encoding="UTF-8"?>
<tree>
  <directory name="../lab4files/">
    <file name="countries.json"></file>
    <file name="csvfile.csv"></file>
    <file name="document.docx"></file>
    <file name="globe.avi"></file>
    <file name="helloWorld.c"></file>
    <file name="Linux.pdf"></file>
    <file name="sample.xls"></file>
    <file name="Tux.png"></file>
    <file name="Ubuntu.pdf"></file>
    <file name="website.html"></file>
  </directory>
  <report>
    <directories>0</directories>
    <files>10</files>
  </report>
</tree>

```

```
rimon1997@cis106:~/Downloads$ tree ../lab4files/ -J
```

```

[
  {"type":"directory","name":"../lab4files/","contents":[
    {"type":"file","name":"countries.json"},
    {"type":"file","name":"csvfile.csv"},
    {"type":"file","name":"document.docx"},
    {"type":"file","name":"globe.avi"},
    {"type":"file","name":"helloWorld.c"},
    {"type":"file","name":"Linux.pdf"},
    {"type":"file","name":"sample.xls"},
    {"type":"file","name":"Tux.png"},
    {"type":"file","name":"Ubuntu.pdf"},
    {"type":"file","name":"website.html"}
  ]},
  {"type":"report","directories":0,"files":10}
]

```

## Question 5

```

rimon1997@cis106:~$ 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

  -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
rimon1997@cis106:~$

```

```

rimon1997@cis106:~$ exa -l lab4files/
.rw-rw-r-- 20k rimon1997 22 Feb 14:16 countries.json
.rw-rw-r-- 284k rimon1997 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k rimon1997 22 Feb 14:13 document.docx
.rw-rw-r-- 742k rimon1997 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 rimon1997 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M rimon1997 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k rimon1997 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k rimon1997 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M rimon1997 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k rimon1997 22 Feb 14:16 website.html
rimon1997@cis106:~$ exa -T lab4files
lab4files
├── countries.json
├── csvfile.csv
├── document.docx
├── globe.avi
├── helloWorld.c
├── Linux.pdf
├── sample.xls
├── Tux.png
├── Ubuntu.pdf
└── website.html
rimon1997@cis106:~$ exa -h lab4files
countries.json csvfile.csv document.docx globe.avi helloWorld.c Linux.pdf sample.xls Tux.png Ubuntu.pdf website.html
rimon1997@cis106:~$ exa -lh
Permissions Size User Date Modified Name
drwxrwxr-x - rimon1997 4 Mar 17:50 cis_106
drwxr-xr-x - rimon1997 24 Feb 20:32 Desktop
drwxr-xr-x - rimon1997 18 Feb 18:26 Documents
drwxr-xr-x - rimon1997 11 Mar 20:59 Downloads
drwxrwxr-x - rimon1997 22 Feb 14:18 lab4files
drwxr-xr-x - rimon1997 18 Feb 18:26 Music
drwxr-xr-x - rimon1997 18 Feb 18:26 Pictures
drwxr-xr-x - rimon1997 18 Feb 18:26 Public
drwx----- rimon1997 18 Feb 19:23 snap
drwxr-xr-x - rimon1997 18 Feb 18:26 Templates
drwxr-xr-x - rimon1997 18 Feb 18:26 Videos
rimon1997@cis106:~$

```