

Lab 4 The Linux fs

Question 1

Table 1

Directory	Function
bin	bin is short for binary. It generally refers to the built applications
dev	directory contains the special device files for all the devices. The device files are created during installation
etc	contain all your system configuration files in it
home	a directory for a particular user of the system and consists of individual files
media	This directory contains subdirectories which are used as mount points for removable media such as floppy disks, cdroms and zip disks
opt	The installation of add-on application software packages.
proc	contains a hierarchy of special files which represent the current state of the kernel
srv	contains site-specific data which is served by this system
usr	consists of several subdirectories that contain additional UNIX commands and data files
var	contains files to which the system writes data during the course of its operation

Table 2

Command	What it does	Syntax	Example
cd	change directory	cd directory_name	cd +Path
pwd	Print name of current/working	pwd + directory	pwd + L
ls	lists files and directories within the file system, and shows detailed information about them	ls + options	ls -ls

Question 2

```

x  -  [🔍]  cis106@cis106-standardpci440fxpiix1996:~/.mozilla...  🔍  ☰

[cis106@cis106-standardpci440fxpiix1996 ~]$ pwd
/home/cis106
[cis106@cis106-standardpci440fxpiix1996 ~]$ cd /usr/share/themes/
[cis106@cis106-standardpci440fxpiix1996 themes]$ pwd
/usr/share/themes
[cis106@cis106-standardpci440fxpiix1996 themes]$ cd /
[cis106@cis106-standardpci440fxpiix1996 /]$ cd ~/.mozilla/firefox/
[cis106@cis106-standardpci440fxpiix1996 firefox]$
```

```

x  -  [🔍]  cis106@cis106-standardpci440fxpiix1996:~/Docume...  🔍  ☰

[cis106@cis106-standardpci440fxpiix1996 firefox]$ cd
[cis106@cis106-standardpci440fxpiix1996 ~]$ cd Downloads/
[cis106@cis106-standardpci440fxpiix1996 Downloads]$ cd ../../
[cis106@cis106-standardpci440fxpiix1996 home]$ pwd
/home
[cis106@cis106-standardpci440fxpiix1996 home]$ cd cis106/Documents/
[cis106@cis106-standardpci440fxpiix1996 Documents]$
```

Question 3

```

cis106@cis106-standardpci440fxpiix1996:~/lab4files
[cis106@cis106-standardpci440fxpiix1996 ~]$ cd /usr/share/
[cis106@cis106-standardpci440fxpiix1996 share]$ ls /home/cis106/lab4files
countries.json csvfile.csv document.docx globe.avi helloWorld.c Linux.pdf sample.xls Tux.png Ubuntu.pdf website.html
[cis106@cis106-standardpci440fxpiix1996 share]$ cd ~/lab4files/
[cis106@cis106-standardpci440fxpiix1996 lab4files]$ ls -lh
total 6.5M
-rw-rw-r-- 1 cis106 cis106 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 cis106 cis106 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 cis106 cis106 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 cis106 cis106 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 cis106 cis106 76 Feb 22 14:18 helloWorld.c
-rw-rw-r-- 1 cis106 cis106 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 cis106 cis106 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 cis106 cis106 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 cis106 cis106 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 cis106 cis106 135K Feb 22 14:16 website.html
[cis106@cis106-standardpci440fxpiix1996 lab4files]$ ls -lhs
total 6.5M
 20K -rw-rw-r-- 1 cis106 cis106 20K Feb 22 14:16 countries.json
280K -rw-rw-r-- 1 cis106 cis106 278K Feb 22 14:15 csvfile.csv
748K -rw-rw-r-- 1 cis106 cis106 747K Feb 22 14:13 document.docx
728K -rw-rw-r-- 1 cis106 cis106 726K Feb 22 14:12 globe.avi
 4.0K -rw-rw-r-- 1 cis106 cis106 76 Feb 22 14:18 helloWorld.c
 2.5M -rw-rw-r-- 1 cis106 cis106 2.5M Feb 22 14:10 Linux.pdf
 12K -rw-rw-r-- 1 cis106 cis106 8.5K Feb 22 14:12 sample.xls
 44K -rw-rw-r-- 1 cis106 cis106 42K Feb 22 14:10 Tux.png
 2.1M -rw-rw-r-- 1 cis106 cis106 2.1M Feb 22 14:11 Ubuntu.pdf
136K -rw-rw-r-- 1 cis106 cis106 135K Feb 22 14:16 website.html
[cis106@cis106-standardpci440fxpiix1996 lab4files]$

```

```

cis106@cis106-standardpci440fxpiix1996:~/lab4files
[cis106@cis106-standardpci440fxpiix1996 lab4files]$ ls -lhSgGi
total 6.5M
74568 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
74572 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
74575 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
74576 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
74574 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
74579 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
74571 -rw-rw-r-- 1 42K Feb 22 14:10 Tux.png
74573 -rw-rw-r-- 1 20K Feb 22 14:16 countries.json
74578 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
74577 -rw-rw-r-- 1 76 Feb 22 14:18 helloWorld.c
[cis106@cis106-standardpci440fxpiix1996 lab4files]$ ls -Xr
sample.xls Ubuntu.pdf countries.json document.docx helloWorld.c
Tux.png Linux.pdf website.html csvfile.csv globe.avi
[cis106@cis106-standardpci440fxpiix1996 lab4files]$

```

Question 4

```
[cis106@cis106-standardpci440fxpiix1996 lab4files]$ cd /etc/
[cis106@cis106-standardpci440fxpiix1996 etc]$ tree ~/lab4files
/home/cis106/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
[cis106@cis106-standardpci440fxpiix1996 etc]$
```

```
x - + [🔍] cis106@cis106-standardpci440fxpiix1996:~/Downloads

[cis106@cis106-standardpci440fxpiix1996 Downloads]$ tree ../lab4files/ -fph
[drwxrwxr-x 214] ../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
[cis106@cis106-standardpci440fxpiix1996 Downloads]$ tree ../lab4files/ -tug
[cis106 cis106 ] ../lab4files/
├── [cis106 cis106 ] Linux.pdf
├── [cis106 cis106 ] Tux.png
├── [cis106 cis106 ] Ubuntu.pdf
├── [cis106 cis106 ] sample.xls
├── [cis106 cis106 ] globe.avi
├── [cis106 cis106 ] document.docx
├── [cis106 cis106 ] csvfile.csv
├── [cis106 cis106 ] countries.json
├── [cis106 cis106 ] website.html
└── [cis106 cis106 ] helloWorld.c

0 directories, 10 files
[cis106@cis106-standardpci440fxpiix1996 Downloads]$
```

```

x  -  +  [🔍]  cis106@cis106-standardpci440fxpiix1996:~/Downloads

[cis106@cis106-standardpci440fxpiix1996 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>
[cis106@cis106-standardpci440fxpiix1996 Downloads]$ █

[cis106@cis106-standardpci440fxpiix1996 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
  }
]
[cis106@cis106-standardpci440fxpiix1996 Downloads]$ █
```

Question 5

```

x - + [ ] cis106@cis106-standardpci440fxpiix1996:~
[cis106@cis106-standardpci440fxpiix1996 ~]$ exa --help
Usage:
  exa [options] [files...]

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

DISPLAY OPTIONS
  -l, --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
  -O, --extended     list each file's extended attributes and sizes
[cis106@cis106-standardpci440fxpiix1996 ~]$

```

```

[cis106@cis106-standardpci440fxpiix1996 ~]$ exa -l lab4files/
.rw-rw-r-- 20k cis106 22 Feb 14:16 countries.json
.rw-rw-r-- 284k cis106 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k cis106 22 Feb 14:13 document.docx
.rw-rw-r-- 742k cis106 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 cis106 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M cis106 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k cis106 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k cis106 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M cis106 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k cis106 22 Feb 14:16 website.html
[cis106@cis106-standardpci440fxpiix1996 ~]$ exa -T lab4files/
lab4files
├── countries.json
├── csvfile.csv
├── document.docx
├── globe.avi
├── helloWorld.c
├── Linux.pdf
├── sample.xls
├── Tux.png
├── Ubuntu.pdf
└── website.html
[cis106@cis106-standardpci440fxpiix1996 ~]$

```

```

x  -  +  [F]  cis106@cis106-standardpci440fxpiix1996:~
cis106@cis106-standardpci440fxpiix1996:~  x  cis106@cis106-standardpci440fx
[cis106@cis106-standardpci440fxpiix1996 ~]$ exa -lh lab4files/
Permissions Size User Date Modified Name
.rw-rw-r-- 20k cis106 22 Feb 14:16 countries.json
.rw-rw-r-- 284k cis106 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k cis106 22 Feb 14:13 document.docx
.rw-rw-r-- 742k cis106 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 cis106 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M cis106 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k cis106 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k cis106 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M cis106 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k cis106 22 Feb 14:16 website.html
[cis106@cis106-standardpci440fxpiix1996 ~]$ exa -lht created --no-user lab4files/
Permissions Size Date Created Name
.rw-rw-r-- 20k 6 Mar 17:13 countries.json
.rw-rw-r-- 284k 6 Mar 17:13 csvfile.csv
.rw-rw-r-- 764k 6 Mar 17:13 document.docx
.rw-rw-r-- 742k 6 Mar 17:13 globe.avi
.rw-rw-r-- 76 6 Mar 17:13 helloWorld.c
.rw-rw-r-- 2.6M 6 Mar 17:13 Linux.pdf
.rw-rw-r-- 8.7k 6 Mar 17:13 sample.xls
.rw-rw-r-- 43k 6 Mar 17:13 Tux.png
.rw-rw-r-- 2.1M 6 Mar 17:13 Ubuntu.pdf
.rw-rw-r-- 137k 6 Mar 17:13 website.html
[cis106@cis106-standardpci440fxpiix1996 ~]$
```