Lab 4 Submission

Question 1
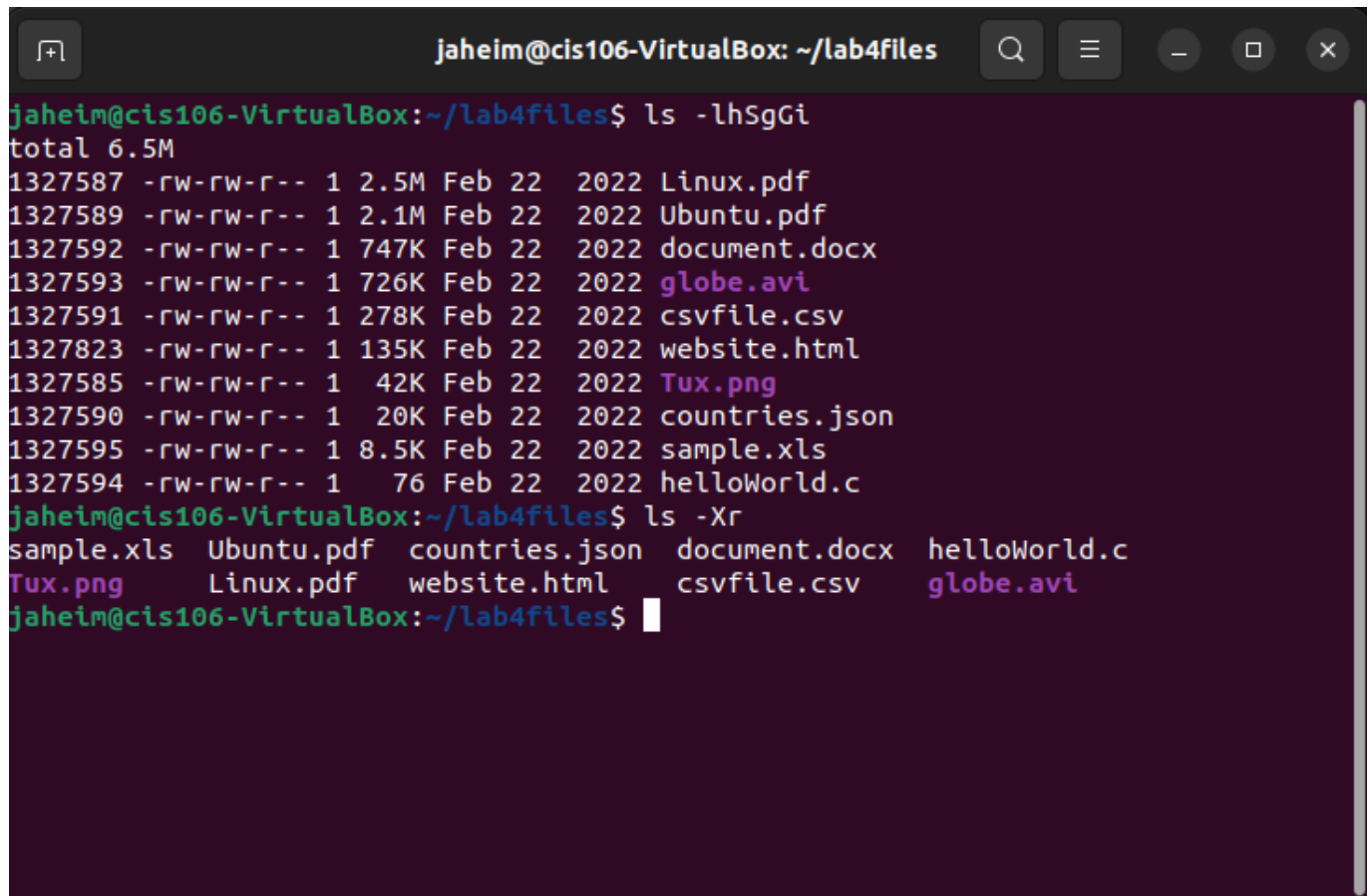
Question 2

```
jaheim@cis106-VirtualBox:~/lab4files$ ls -l
total 6580
-rw-rw-r-- 1 jaheim jaheim    20471 Feb 22  2022 countries.json
-rw-rw-r-- 1 jaheim jaheim   284042 Feb 22  2022 csvfile.csv
-rw-rw-r-- 1 jaheim jaheim   764176 Feb 22  2022 document.docx
-rw-rw-r-- 1 jaheim jaheim   742478 Feb 22  2022 globe.avi
-rw-rw-r-- 1 jaheim jaheim       76 Feb 22  2022 helloWorld.c
-rw-rw-r-- 1 jaheim jaheim  2600138 Feb 22  2022 Linux.pdf
-rw-rw-r-- 1 jaheim jaheim     8704 Feb 22  2022 sample.xls
-rw-rw-r-- 1 jaheim jaheim    42777 Feb 22  2022 Tux.png
-rw-rw-r-- 1 jaheim jaheim  2114053 Feb 22  2022 Ubuntu.pdf
-rw-rw-r-- 1 jaheim jaheim   137453 Feb 22  2022 website.html
jaheim@cis106-VirtualBox:~/lab4files$
```

```
total 6580
-rw-rw-r-- 1 jaheim jaheim    20471 Feb 22  2022 countries.json
-rw-rw-r-- 1 jaheim jaheim   284042 Feb 22  2022 csvfile.csv
-rw-rw-r-- 1 jaheim jaheim   764176 Feb 22  2022 document.docx
-rw-rw-r-- 1 jaheim jaheim   742478 Feb 22  2022 globe.avi
-rw-rw-r-- 1 jaheim jaheim       76 Feb 22  2022 helloWorld.c
-rw-rw-r-- 1 jaheim jaheim  2600138 Feb 22  2022 Linux.pdf
-rw-rw-r-- 1 jaheim jaheim     8704 Feb 22  2022 sample.xls
-rw-rw-r-- 1 jaheim jaheim    42777 Feb 22  2022 Tux.png
-rw-rw-r-- 1 jaheim jaheim  2114053 Feb 22  2022 Ubuntu.pdf
-rw-rw-r-- 1 jaheim jaheim   137453 Feb 22  2022 website.html
jaheim@cis106-VirtualBox:~/lab4files$ ls -lhS
total 6.5M
-rw-rw-r-- 1 jaheim jaheim 2.5M Feb 22  2022 Linux.pdf
-rw-rw-r-- 1 jaheim jaheim 2.1M Feb 22  2022 Ubuntu.pdf
-rw-rw-r-- 1 jaheim jaheim 747K Feb 22  2022 document.docx
-rw-rw-r-- 1 jaheim jaheim 726K Feb 22  2022 globe.avi
-rw-rw-r-- 1 jaheim jaheim 278K Feb 22  2022 csvfile.csv
-rw-rw-r-- 1 jaheim jaheim 135K Feb 22  2022 website.html
-rw-rw-r-- 1 jaheim jaheim  42K Feb 22  2022 Tux.png
-rw-rw-r-- 1 jaheim jaheim  20K Feb 22  2022 countries.json
-rw-rw-r-- 1 jaheim jaheim 8.5K Feb 22  2022 sample.xls
-rw-rw-r-- 1 jaheim jaheim   76 Feb 22  2022 helloWorld.c
jaheim@cis106-VirtualBox:~/lab4files$
```

```
┌┼┐                    jaheim@cis106-VirtualBox: ~/lab4files      🔍   ☰   —   ▢   ✕

jaheim@cis106-VirtualBox:~/lab4files$ ls -lhSgGi
total 6.5M
1327587 -rw-rw-r-- 1 2.5M Feb 22  2022 Linux.pdf
1327589 -rw-rw-r-- 1 2.1M Feb 22  2022 Ubuntu.pdf
1327592 -rw-rw-r-- 1 747K Feb 22  2022 document.docx
1327593 -rw-rw-r-- 1 726K Feb 22  2022 globe.avi
1327591 -rw-rw-r-- 1 278K Feb 22  2022 csvfile.csv
1327823 -rw-rw-r-- 1 135K Feb 22  2022 website.html
1327585 -rw-rw-r-- 1  42K Feb 22  2022 Tux.png
1327590 -rw-rw-r-- 1  20K Feb 22  2022 countries.json
1327595 -rw-rw-r-- 1 8.5K Feb 22  2022 sample.xls
1327594 -rw-rw-r-- 1   76 Feb 22  2022 helloWorld.c
jaheim@cis106-VirtualBox:~/lab4files$ ls -Xr
sample.xls   Ubuntu.pdf   countries.json   document.docx   helloWorld.c
Tux.png      Linux.pdf    website.html     csvfile.csv     globe.avi
jaheim@cis106-VirtualBox:~/lab4files$ ▮
```

Question 3

```
jaheim@cis106-VirtualBox:~$ cd /etc/
jaheim@cis106-VirtualBox:/etc$ tree ~/lab4files/
/home/jaheim/lab4files/
├── countries.json
├── csvfile.csv
├── document.docx
├── globe.avi                                                    4 / 6
├── helloWorld.c
├── Linux.pdf
├── sample.xls
├── Tux.png
├── Ubuntu.pdf
└── website.html

0 directories, 10 files
jaheim@cis106-VirtualBox:/etc$ cd ~/Downloads/
jaheim@cis106-VirtualBox:~/Downloads$ tree -fph ../lab4files/
[drwxrwxr-x 4.0K]  ../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
jaheim@cis106-VirtualBox:~/Downloads$
```

```
jaheim@cis106-VirtualBox:~/Downloads$ tree -tug ../lab4files/
[jaheim    jaheim ]  ../lab4files/
├── [jaheim    jaheim ]  Linux.pdf
├── [jaheim    jaheim ]  Tux.png
├── [jaheim    jaheim ]  Ubuntu.pdf
├── [jaheim    jaheim ]  sample.xls
├── [jaheim    jaheim ]  globe.avi
├── [jaheim    jaheim ]  document.docx
├── [jaheim    jaheim ]  csvfile.csv
├── [jaheim    jaheim ]  countries.json
├── [jaheim    jaheim ]  website.html
└── [jaheim    jaheim ]  helloWorld.c

0 directories, 10 files
jaheim@cis106-VirtualBox:~/Downloads$ 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)
```

```
jaheim@cis106-VirtualBox:~/Downloads$ exa ~/lab4files/ -l
.rw-rw-r--   20k jaheim 22 Feb 14:16 countries.json
.rw-rw-r--  284k jaheim 22 Feb 14:15 csvfile.csv
.rw-rw-r--  764k jaheim 22 Feb 14:13 document.docx
.rw-rw-r--  742k jaheim 22 Feb 14:12 globe.avi
.rw-rw-r--   76 jaheim 22 Feb 14:18 helloWorld.c
.rw-rw-r--  2.6M jaheim 22 Feb 14:10 Linux.pdf
.rw-rw-r--  8.7k jaheim 22 Feb 14:12 sample.xls
.rw-rw-r--   43k jaheim 22 Feb 14:10 Tux.png
.rw-rw-r--  2.1M jaheim 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r--  137k jaheim 22 Feb 14:16 website.html
jaheim@cis106-VirtualBox:~/Downloads$ exa ~/lab4files/ -lh
Permissions Size User   Date Modified Name
.rw-rw-r--   20k jaheim 22 Feb 14:16  countries.json
.rw-rw-r--  284k jaheim 22 Feb 14:15  csvfile.csv
.rw-rw-r--  764k jaheim 22 Feb 14:13  document.docx
.rw-rw-r--  742k jaheim 22 Feb 14:12  globe.avi
.rw-rw-r--   76 jaheim 22 Feb 14:18  helloWorld.c
.rw-rw-r--  2.6M jaheim 22 Feb 14:10  Linux.pdf
.rw-rw-r--  8.7k jaheim 22 Feb 14:12  sample.xls
.rw-rw-r--   43k jaheim 22 Feb 14:10  Tux.png
.rw-rw-r--  2.1M jaheim 22 Feb 14:11  Ubuntu.pdf
.rw-rw-r--  137k jaheim 22 Feb 14:16  website.html
jaheim@cis106-VirtualBox:~/Downloads$
```

```
.rw-rw-r--   76 jaheim 22 Feb 14:18 helloWorld.c
.rw-rw-r--  2.6M jaheim 22 Feb 14:10 Linux.pdf
.rw-rw-r--  8.7k jaheim 22 Feb 14:12 sample.xls
.rw-rw-r--   43k jaheim 22 Feb 14:10 Tux.png
.rw-rw-r--  2.1M jaheim 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r--  137k jaheim 22 Feb 14:16 website.html
jaheim@cis106-VirtualBox:~/Downloads$ exa ~/lab4files/ -lh
Permissions Size User   Date Modified Name
.rw-rw-r--   20k jaheim 22 Feb 14:16  countries.json
.rw-rw-r--  284k jaheim 22 Feb 14:15  csvfile.csv
.rw-rw-r--  764k jaheim 22 Feb 14:13  document.docx
.rw-rw-r--  742k jaheim 22 Feb 14:12  globe.avi
.rw-rw-r--   76 jaheim 22 Feb 14:18  helloWorld.c
.rw-rw-r--  2.6M jaheim 22 Feb 14:10  Linux.pdf
.rw-rw-r--  8.7k jaheim 22 Feb 14:12  sample.xls
.rw-rw-r--   43k jaheim 22 Feb 14:10  Tux.png
.rw-rw-r--  2.1M jaheim 22 Feb 14:11  Ubuntu.pdf
.rw-rw-r--  137k jaheim 22 Feb 14:16  website.html
jaheim@cis106-VirtualBox:~/Downloads$ exa ~/lab4files/ -lh --no-user -U
Permissions Size Date Created Name
.rw-rw-r--   20k 22 Oct 20:16 countries.json
.rw-rw-r--  284k 22 Oct 20:16 csvfile.csv
.rw-rw-r--  764k 22 Oct 20:16 document.docx
.rw-rw-r--  742k 22 Oct 20:16 globe.avi
.rw-rw-r--   76 22 Oct 20:16 helloWorld.c
.rw-rw-r--  2.6M 22 Oct 20:16 Linux.pdf
.rw-rw-r--  8.7k 22 Oct 20:16 sample.xls
.rw-rw-r--   43k 22 Oct 20:16 Tux.png
.rw-rw-r--  2.1M 22 Oct 20:16 Ubuntu.pdf
.rw-rw-r--  137k 22 Oct 20:16 website.html
jaheim@cis106-VirtualBox:~/Downloads$
```

Question 4