

Lab 6

Exercise 1:

1. Use `ls -l` to display detailed information about each file and directory.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~
$ ls -l
total 20610
-rw-r--r-- 1 Deathstar 197121 6993 Jan 29 00:22 -1.14-windows.xml
drwxr-xr-x 1 Deathstar 197121 0 Dec 8 2022 AppData/
lrwxrwxrwx 1 Deathstar 197121 34 Dec 8 2022 'Application Data' -> '/c/Users/Deez Nuts/AppData/Roaming/'
lrwxrwxrwx 1 Deathstar 197121 62 Dec 8 2022 Cookies -> '/c/Users/Deez Nuts/AppData/Local/Microsoft/Windows/INetCookies/'
drwxr-xr-x 1 Deathstar 197121 0 Jun 27 2023 D2-1.14b-Installer-enUS/
drwxr-xr-x 1 Deathstar 197121 0 Jun 18 17:53 Desktop/
drwxr-xr-x 1 Deathstar 197121 0 Jun 13 02:40 Documents/
drwxr-xr-x 1 Deathstar 197121 0 Jun 19 16:15 Downloads/
drwxr-xr-x 1 Deathstar 197121 0 Dec 8 2022 Favorites/
drwxr-xr-x 1 Deathstar 197121 0 Dec 8 2022 Links/
lrwxrwxrwx 1 Deathstar 197121 32 Dec 8 2022 'Local Settings' -> '/c/Users/Deez Nuts/AppData/Local/'
drwxr-xr-x 1 Deathstar 197121 0 Feb 21 2023 Music/
lrwxrwxrwx 1 Deathstar 197121 28 Dec 8 2022 'My Documents' -> '/c/Users/Deez Nuts/Documents/'
-rw-r--r-- 1 Deathstar 197121 16252928 Jun 19 01:43 NTUSER.DAT
-rw-r--r-- 1 Deathstar 197121 65536 Dec 8 2022 NTUSER.DAT{93de7932-76b6-11ed-8e86-fc3497a65f95}.TM.blf
-rw-r--r-- 1 Deathstar 197121 524288 Dec 8 2022 NTUSER.DAT{93de7932-76b6-11ed-8e86-fc3497a65f95}.TMContainer00000000000000000001.regtrans-ms
-rw-r--r-- 1 Deathstar 197121 524288 Dec 8 2022 NTUSER.DAT{93de7932-76b6-11ed-8e86-fc3497a65f95}.TMContainer00000000000000000002.regtrans-ms
lrwxrwxrwx 1 Deathstar 197121 70 Dec 8 2022 NetHood -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/Network Shortcuts/'
drwxr-xr-x 1 Deathstar 197121 0 Jun 19 13:27 OneDrive/
drwxr-xr-x 1 Deathstar 197121 0 Dec 27 2022 Pictures/
lrwxrwxrwx 1 Deathstar 197121 70 Dec 8 2022 PrintHood -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/Printer Shortcuts/'
lrwxrwxrwx 1 Deathstar 197121 59 Dec 8 2022 Recent -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/Recent/'
drwxr-xr-x 1 Deathstar 197121 0 Feb 21 00:01 'Saved Games'/
drwxr-xr-x 1 Deathstar 197121 0 Dec 8 2022 Searches/
lrwxrwxrwx 1 Deathstar 197121 59 Dec 8 2022 SendTo -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/SendTo/'
lrwxrwxrwx 1 Deathstar 197121 63 Dec 8 2022 'Start Menu' -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/Start Menu/'
lrwxrwxrwx 1 Deathstar 197121 62 Dec 8 2022 Templates -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/Templates/'
drwxr-xr-x 1 Deathstar 197121 0 Jun 19 13:27 Videos/
drwxr-xr-x 1 Deathstar 197121 0 May 31 09:40 ansel/
-rw-r--r-- 1 Deathstar 197121 22 May 31 02:08 miktex-console.lock
-rw-r--r-- 1 Deathstar 197121 1376256 Dec 8 2022 ntuser.dat.LOG1
-rw-r--r-- 1 Deathstar 197121 2031616 Dec 8 2022 ntuser.dat.LOG2
-rw-r--r-- 1 Deathstar 197121 20 Dec 8 2022 ntuser.ini
```

2. Try `ls -a` to reveal hidden files and directories.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~
$ ls -a
-1.14-windows.xml      'Local Settings'@
./                      Music/
../                     'My Documents'@
.MCTranscodingSDK/     NTUSER.DAT
.bash_history*          NTUSER.DAT{93de7932-76b6-11ed-8e86-fc3497a65f95}.TM.blf
.git-for-windows-updater NTUSER.DAT{93de7932-76b6-11ed-8e86-fc3497a65f95}.TMContainer00000000000000000001.regtrans-ms
.gitconfig              NTUSER.DAT{93de7932-76b6-11ed-8e86-fc3497a65f95}.TMContainer00000000000000000002.regtrans-ms
.ipynthon/              NetHood@
.jupyter/               OneDrive/
.matplotlib/             Pictures/
.ms-ad/                  PrintHood@
.node_repl_history       Recent@
.runelite/              'Saved Games'/
.thinkorswim/            Searches/
.vscode/                 SendTo@
AppData/                 'Start Menu'@
'Application Data'@      Templates@
Cookies@                 Videos/
D2-1.14b-Installer-enUS/ ansel/
Desktop/                 miktex-console.lock
Documents/               ntuser.dat.LOG1
Downloads/               ntuser.dat.LOG2
Favorites/               ntuser.ini
Links/
```

3. Combine options: `ls -la`. Note the difference.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~
$ ls -la
total 23593
-rw-r--r-- 1 Deathstar 197121 6993 Jan 29 00:22 -1.14-windows.xml
drwxr-xr-x 1 Deathstar 197121 0 Jun 15 22:56 ./
drwxr-xr-x 1 Deathstar 197121 0 Dec 8 2022 ../
drwxr-xr-x 1 Deathstar 197121 0 Jan 10 2023 .MCTranscodingSDK/
-rwxr-xr-x 1 Deathstar 197121 2704 Jun 13 19:28 .bash_history*
-rw-r--r-- 1 Deathstar 197121 53 Nov 23 2023 .git-for-windows-updater
-rw-r--r-- 1 Deathstar 197121 217 Jun 11 14:25 .gitconfig
drwxr-xr-x 1 Deathstar 197121 0 May 16 15:42 .ipython/
drwxr-xr-x 1 Deathstar 197121 0 May 31 01:12 .jupyter/
drwxr-xr-x 1 Deathstar 197121 0 May 24 13:00 .matplotlib/
drwxr-xr-x 1 Deathstar 197121 0 May 13 2023 .ms-ad/
-rw-r--r-- 1 Deathstar 197121 45 Oct 11 2023 .node_repl_history
drwxr-xr-x 1 Deathstar 197121 0 Feb 24 2023 .runelite/
drwxr-xr-x 1 Deathstar 197121 0 Aug 21 2023 .thinkorswim/
drwxr-xr-x 1 Deathstar 197121 0 Jun 13 2023 .vscode/
drwxr-xr-x 1 Deathstar 197121 0 Dec 8 2022 AppData/
lrwxrwxrwx 1 Deathstar 197121 34 Dec 8 2022 'Application Data' -> '/c/Users/Deez Nuts/AppData/Roaming/'
62 Dec 8 2022 Cookies -> '/c/Users/Deez Nuts/AppData/Local/Microsoft/Windows/INetCookies/'
drwxr-xr-x 1 Deathstar 197121 0 Jun 27 2023 D2-1.14b-Installer-enUS/
drwxr-xr-x 1 Deathstar 197121 0 Jun 18 17:53 Desktop/
drwxr-xr-x 1 Deathstar 197121 0 Jun 13 02:40 Documents/
drwxr-xr-x 1 Deathstar 197121 0 Jun 19 16:15 Downloads/
drwxr-xr-x 1 Deathstar 197121 0 Dec 8 2022 Favorites/
drwxr-xr-x 1 Deathstar 197121 0 Dec 8 2022 Links/
lrwxrwxrwx 1 Deathstar 197121 32 Dec 8 2022 'Local Settings' -> '/c/Users/Deez Nuts/AppData/Local/'
drwxr-xr-x 1 Deathstar 197121 0 Feb 21 2023 Music/
lrwxrwxrwx 1 Deathstar 197121 28 Dec 8 2022 'My Documents' -> '/c/Users/Deez Nuts/Documents/'
-rw-r--r-- 1 Deathstar 197121 16252928 Jun 19 01:43 NTUSER.DAT
-rw-r--r-- 1 Deathstar 197121 65536 Dec 8 2022 NTUSER.DAT{93de7932-76b6-11ed-8e86-fc3497a65f95}.TM.blf
-rw-r--r-- 1 Deathstar 197121 524288 Dec 8 2022 NTUSER.DAT{93de7932-76b6-11ed-8e86-fc3497a65f95}.TMContainer00000000000000000001.
regtrans-ms
-rw-r--r-- 1 Deathstar 197121 524288 Dec 8 2022 NTUSER.DAT{93de7932-76b6-11ed-8e86-fc3497a65f95}.TMContainer00000000000000000002.
regtrans-ms
lrwxrwxrwx 1 Deathstar 197121 70 Dec 8 2022 NetHood -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/Network Shortcuts/'
drwxr-xr-x 1 Deathstar 197121 0 Jun 19 13:27 OneDrive/
drwxr-xr-x 1 Deathstar 197121 0 Dec 27 2022 Pictures/
lrwxrwxrwx 1 Deathstar 197121 70 Dec 8 2022 PrintHood -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/Printer Shortcuts/'
lrwxrwxrwx 1 Deathstar 197121 59 Dec 8 2022 Recent -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/Recent/'
drwxr-xr-x 1 Deathstar 197121 0 Feb 21 00:01 'Saved Games'/
drwxr-xr-x 1 Deathstar 197121 0 Dec 8 2022 Searches/
lrwxrwxrwx 1 Deathstar 197121 59 Dec 8 2022 SendTo -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/SendTo/'
63 Dec 8 2022 'Start Menu' -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/Start Menu/'
lrwxrwxrwx 1 Deathstar 197121 62 Dec 8 2022 Templates -> '/c/Users/Deez Nuts/AppData/Roaming/Microsoft/Windows/Templates/'
drwxr-xr-x 1 Deathstar 197121 0 Jun 19 13:27 Videos/
drwxr-xr-x 1 Deathstar 197121 0 May 31 09:40 ansel/
-rw-r--r-- 1 Deathstar 197121 22 May 31 02:08 miktex-console.lock
-rw-r--r-- 1 Deathstar 197121 1376256 Dec 8 2022 ntuser.dat.LOG1
-rw-r--r-- 1 Deathstar 197121 5054464 Dec 8 2022 ntuser.dat.LOG2
-rw-r--r-- 1 Deathstar 197121 20 Dec 8 2022 ntuser.ini
```

Exercise 2:

1. From your home directory, navigate to a deeper directory using combined paths, e.g., `cd Documents/dir1/dir2`.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~  
$ cd Desktop/Coding/Git\ Repos/COT2000/  
  
Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding/Git Repos/COT2000 (main)  
$ |
```

2. Use `cd ../../` to jump back two levels up.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding/Git Repos/COT2000 (main)  
$ cd ../../  
  
Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding  
$ |
```

3. Use `cd /` to navigate to the root.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding  
$ cd /  
  
Deathstar@Liesenfelt-Deathstar MINGW64 /  
$ |
```

4. Navigate back to the home directory using just `cd`.

```
Deathstar@Liesenfelt-Deathstar MINGW64 /  
$ cd ~  
  
Deathstar@Liesenfelt-Deathstar MINGW64 ~  
$ |
```

Exercise 3:

1. Navigate to a directory of your choice. Use `ls -lh` to display file sizes in a human-readable format.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding/Git Repos/COT2000 (main)
$ ls -lh
total 8.0K
drwxr-xr-x 1 Deathstar 197121 0 Jun  7 18:24 HW2/
drwxr-xr-x 1 Deathstar 197121 0 Jun 14 22:32 HW3/
drwxr-xr-x 1 Deathstar 197121 0 May 30 18:11 'Lab 2'/
drwxr-xr-x 1 Deathstar 197121 0 May 31 12:55 'Lab 3'/
drwxr-xr-x 1 Deathstar 197121 0 Jun  7 12:34 'Lab 4'/
drwxr-xr-x 1 Deathstar 197121 0 Jun 14 12:22 'Lab 5'/
drwxr-xr-x 1 Deathstar 197121 0 Jun 19 20:09 'Lab 6'/'
```

2. Use `ls -lt` to list files based on modification time, newest first.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding/Git Repos/COT2000 (main)
$ ls -lt
total 8
drwxr-xr-x 1 Deathstar 197121 0 Jun 19 20:09 'Lab 6'/'
drwxr-xr-x 1 Deathstar 197121 0 Jun 14 22:32 HW3/
drwxr-xr-x 1 Deathstar 197121 0 Jun 14 12:22 'Lab 5'/'
drwxr-xr-x 1 Deathstar 197121 0 Jun  7 18:24 HW2/
drwxr-xr-x 1 Deathstar 197121 0 Jun  7 12:34 'Lab 4'/'
drwxr-xr-x 1 Deathstar 197121 0 May 31 12:55 'Lab 3'/'
drwxr-xr-x 1 Deathstar 197121 0 May 30 18:11 'Lab 2'/'
```

3. Try `ls -ls` to sort by file size, largest first.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding/Git Repos/COT2000 (main)
$ ls -ls
total 8
4 drwxr-xr-x 1 Deathstar 197121 0 Jun  7 18:24 HW2/
0 drwxr-xr-x 1 Deathstar 197121 0 Jun 14 22:32 HW3/
0 drwxr-xr-x 1 Deathstar 197121 0 May 30 18:11 'Lab 2'/'
4 drwxr-xr-x 1 Deathstar 197121 0 May 31 12:55 'Lab 3'/'
0 drwxr-xr-x 1 Deathstar 197121 0 Jun  7 12:34 'Lab 4'/'
0 drwxr-xr-x 1 Deathstar 197121 0 Jun 14 12:22 'Lab 5'/'
0 drwxr-xr-x 1 Deathstar 197121 0 Jun 19 20:09 'Lab 6'/'
```


Exercise 4:

1. Use `cd -` to toggle between the current directory and the previous directory.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding/Git Repos
$ cd -
/c/Users/Deez Nuts/Desktop/Coding

Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding
$ cd -
/c/Users/Deez Nuts/Desktop/Coding/Git Repos

Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding/Git Repos
$
```

2. Navigate three levels deep. Use `cd ../../../../` to jump back to where you started.

```
Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop/Coding/Git Repos/COT2000 (main)
$ cd ../../../../

Deathstar@Liesenfelt-Deathstar MINGW64 ~/Desktop
$
```