**CYBR 1500 Command Line Environments – Midterm Exam**

**Student Name: Andrew Koenig**

**Student ID: 700690760**

**Please answer the questions of part I, II, III on this document. For terminal session, please copy your terminal capture then paste it in this document. After you finish your midterm, please submit it via the link “Midterm Exam” under Assignment section on Blackboard.**

**Part I- Read the questions carefully and choose the correct answer. (25 points – Each question worth 5 points)**

1. \_\_\_\_\_C\_\_\_\_command creates the new file you specify and assigns your username as the file owner

a. mkdir

b. cp

c. touch

d. sleep

2. Standard wildcard characters \_\_\_\_\_\_A\_\_\_\_\_\_ represent one character.

a. asterisk (\*)

b. question mark (?)

c. exclamation mark (!)

3. There are two types of file links that are available in Linux: D

a. symbolic link and broken link.

b. hard link and fixed link

c. symbolic link and fixed link

d. symbolic link and hard link

4. We can use the \_\_\_\_A\_\_\_\_\_command to display all the data inside a text file.

a. cat

b. ps

c. rm

d. cp

5. The \_\_\_\_\_\_Top\_\_\_\_command can display process information similarly to the \_\_\_\_\_ps\_\_\_\_ command but it does it in a real-time mode. B

a. touch, ps

b. top, ps

c. rm, touch

d. rm, ps

**Part II - True or False? For each of the following statements, choose either true or false. (60 points – Each question worth 6 points)**

1. T F There are four main parts that make up a Linux system. T

2. T F The ls -l command will give a "lite" view of the contents of the directory that is shorter, and less informative, than ls alone. T

3. T F A directory path beginning with '/', such as /home/mine/div/howdy, is a relative path. F

4. T F The cp command, "chain process," links multiple processes together so that the output from one flow into the input for the other. F

5. T F rmdir this will always delete the directory "this" if it exists within the current working directory. F

6. T F For the ps command, you can mix BSD and GNU operations/parameters. F

7. T F If you don’t specify a destination on the cd command, it will take you to your home directory F

8. T F The destination parameter, though, can be expressed using two different methods: an absolute file path and a relative file path. T

9. T F The commands,

sleep 100

and

sleep100 &

execute the same command, but the first one executes in background mode, so the shell can process other tasks. F

10. T F The top command can display process information similarity to the ps command but it does it in a real-time mode. T

**Part III – Short answer questions: (30 points – Each question worth 15 points)**

1. Define “absolute file path” and “relative file path”. The absolute path specifies the path all the way from the root directory, going through every level. The relative path is more like a shortcut, and relates the path to a current directory.
2. Define “Linux Kernel”. The kernel is what communicates between a systems hardware and the processes on it. It tries to do this as efficiently as possible.

**Part IV – Terminal Session (85 points - Each step from 1-13 worth 5 points, each step from 14-15 worth 10 points).**

**Please copy or take screen shots of your terminal, put all your terminal captures in one .docx file or google docs file. Please submit your .docx file or a link to your google docs file on Blackboard.**

1. Start a new terminal session.
2. Show your current working directory by using the appropriate command.
3. Create a directory called **“Midterm”** in your **~/Documents** directory.
4. Under **“Midterm”** directory, create three files called **<name>1**, **<name>2**, and **<name>3**, where **<name>** is your last name, e.g., “**horn1**,” etc. Use the **touch** command to create the files.
5. Create hard links for each of the files you created in the last step.
6. Use **ls** to verify the contents of the “**Midterm**” directory
7. Make a subdirectory within the “**Midterm**” directory called “**Link\_Midterm**”, then move the hard links to that location.
8. Use **ls** to verify the contents of the “**Link\_Midterm**” subdirectory.
9. Go back to your home directory (which should be something look like this “**/home/trang**”)
10. From your home directory (not root), run the command, **du -h**, to see how much disk space is being used in your home directory tree. Run the command again, adding the **-s** option (i.e., **du -h** **-s**, or **du -hs**). NB. You will probably get a message that one or more directories are not readable because of permissions--that’s fine.
11. Start a bash subshell, and from within the subshell, launch another bash subshell.
12. Use the **ps** command with the **--forest** option to see the relationship of running processes.
13. Use the **type** command to figure out whether the **history** command is built in commands.

14. In your Midterm directory, please create a script with the following content. Remember to change the permission of your script to include execution privilege and add the directory containing your script to the PATH environment before executing the script.

Graphical user interface, text, chat or text message

Description automatically generated

1. Run your script.

>>>>>Paste your terminal capture below this line >>>>>

**andrew@andrew-VirtualBox**:**~**$ dir

backup.tar  Documents  Music Public     Videos

Desktop     Downloads  Pictures  Templates  week4

**andrew@andrew-VirtualBox**:**~**$ cd ./Documents/

**andrew@andrew-VirtualBox**:**~/Documents**$ mkdir Midterm

**andrew@andrew-VirtualBox**:**~/Documents**$ touch koenig1

**andrew@andrew-VirtualBox**:**~/Documents**$ touch koenig2

**andrew@andrew-VirtualBox**:**~/Documents**$ touch koneig3

**andrew@andrew-VirtualBox**:**~/Documents**$ ls

**afolder**  koenig1  koneig3  morerandom  **week2**

a.out    koenig2  **Midterm**  random      **week6**

**andrew@andrew-VirtualBox**:**~/Documents**$ rm koneig3

**andrew@andrew-VirtualBox**:**~/Documents**$ touch koenig3

**andrew@andrew-VirtualBox**:**~/Documents**$ ls

**afolder**  koenig1  koenig3  morerandom  **week2**

a.out    koenig2  **Midterm**  random      **week6**

**andrew@andrew-VirtualBox**:**~/Documents**$ ln koenig1

ln: failed to create hard link './koenig1': File exists

**andrew@andrew-VirtualBox**:**~/Documents**$ ln koenig1 first

**andrew@andrew-VirtualBox**:**~/Documents**$ ln koenig2 second

**andrew@andrew-VirtualBox**:**~/Documents**$ ln koenig3 third

**andrew@andrew-VirtualBox**:**~/Documents**$ ls

**afolder**  first    koenig2  **Midterm**     random  third  **week6**

a.out    koenig1  koenig3  morerandom  second  **week2**

**andrew@andrew-VirtualBox**:**~/Documents**$ mv first Midterm/

**andrew@andrew-VirtualBox**:**~/Documents**$ ls

**afolder**  koenig1  koenig3  morerandom  second  **week2**

a.out    koenig2  **Midterm**  random      third   **week6**

**andrew@andrew-VirtualBox**:**~/Documents**$ mv second Midterm/

**andrew@andrew-VirtualBox**:**~/Documents**$ mv third Midterm/

**andrew@andrew-VirtualBox**:**~/Documents**$ ls

**afolder**  koenig1  koenig3  morerandom  **week2**

a.out    koenig2  **Midterm**  random      **week6**

**andrew@andrew-VirtualBox**:**~/Documents**$ cd ./Midterm/

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ ls

first  second  third

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ mkdir link\_midterm

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ mv first link\_midterm/

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ mv second link\_midterm/

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ mv third link\_midterm/

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ ls

**link\_midterm**

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ cd ./link\_midterm/

**andrew@andrew-VirtualBox**:**~/Documents/Midterm/link\_midterm**$ ls

first  second  third

**andrew@andrew-VirtualBox**:**~/Documents/Midterm/link\_midterm**$ cd ./home

bash: cd: ./home: No such file or directory

**andrew@andrew-VirtualBox**:**~/Documents/Midterm/link\_midterm**$ cd /home/

**andrew@andrew-VirtualBox**:**/home**$ du -h

4.0K ./andrew/Templates

4.0K ./andrew/Pictures

4.0K ./andrew/.mozilla/extensions

4.0K ./andrew/.mozilla/firefox/Pending Pings

996K ./andrew/.mozilla/firefox/ifai5usm.default-release/extensions

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/saved-telemetry-pings

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/permanent/chrome/idb/3870112724rsegmnoittet-es.files/journals

1.8M ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/permanent/chrome/idb/3870112724rsegmnoittet-es.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/permanent/chrome/idb/2823318777ntouromlalnodry--naod.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/permanent/chrome/idb/1657114595AmcateirvtiSty.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/permanent/chrome/idb/2918063365piupsah.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/permanent/chrome/idb/3561288849sdhlie.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/permanent/chrome/idb/1451318868ntouromlalnodry--epcr.files

10M ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/permanent/chrome/idb

10M ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/permanent/chrome

10M ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/permanent

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/temporary

16K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++accounts.google.com/ls

24K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++accounts.google.com

16K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/ls

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/idb/295498498yCt7-%iCd7b%-UpurQeNf.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/idb/2232182701SeesravbiacteaWDosrgk.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/idb/2171031483YattIedMb.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/idb/2581170943PCe7r%sCi7s%tUeunQtNE.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/idb/1755483016yCt7-%iCt7-%rUeusQpNo.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/idb/3211250388sbwdpsunsohintoatciif.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/idb/329412932LCo7g%sCD7a%tUaubQaNs.files

356K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/idb

48K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/cache/morgue/21

8.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/cache/morgue/213

60K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/cache/morgue

148K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com/cache

528K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.youtube.com

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/moz-extension+++c1d0555e-e517-4c0f-bf1d-44f60963c401^userContextId=4294967295/idb/3647222921wleabcEoxlt-eengsairo.files

52K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/moz-extension+++c1d0555e-e517-4c0f-bf1d-44f60963c401^userContextId=4294967295/idb

60K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/moz-extension+++c1d0555e-e517-4c0f-bf1d-44f60963c401^userContextId=4294967295

16K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++drive.google.com/ls

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++drive.google.com/idb/548905059db.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++drive.google.com/idb/4041069256GsoDoegvlierD.files

356K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++drive.google.com/idb

380K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++drive.google.com

16K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++docs.google.com/ls

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++docs.google.com/idb/548905059db.files

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++docs.google.com/idb/4041069256GsoDoegvlierD.files

220K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++docs.google.com/idb

244K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++docs.google.com

20K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.google.com/ls

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.google.com/idb/548905059db.files

52K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.google.com/idb

80K ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default/https+++www.google.com

1.3M ./andrew/.mozilla/firefox/ifai5usm.default-release/storage/default

12M ./andrew/.mozilla/firefox/ifai5usm.default-release/storage

8.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/bookmarkbackups

136K ./andrew/.mozilla/firefox/ifai5usm.default-release/features/{503e12f3-71ea-449e-8b72-8491f1447dae}

140K ./andrew/.mozilla/firefox/ifai5usm.default-release/features

1.4M ./andrew/.mozilla/firefox/ifai5usm.default-release/gmp-gmpopenh264/1.8.1.1

1.4M ./andrew/.mozilla/firefox/ifai5usm.default-release/gmp-gmpopenh264

120K ./andrew/.mozilla/firefox/ifai5usm.default-release/datareporting/archived/2022-01

120K ./andrew/.mozilla/firefox/ifai5usm.default-release/datareporting/archived/2022-02

244K ./andrew/.mozilla/firefox/ifai5usm.default-release/datareporting/archived

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/datareporting/glean/pending\_pings

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/datareporting/glean/events

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/datareporting/glean/tmp

12K ./andrew/.mozilla/firefox/ifai5usm.default-release/datareporting/glean/db

28K ./andrew/.mozilla/firefox/ifai5usm.default-release/datareporting/glean

284K ./andrew/.mozilla/firefox/ifai5usm.default-release/datareporting

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/crashes/events

12K ./andrew/.mozilla/firefox/ifai5usm.default-release/crashes

4.0K ./andrew/.mozilla/firefox/ifai5usm.default-release/minidumps

2.5M ./andrew/.mozilla/firefox/ifai5usm.default-release/security\_state

20K ./andrew/.mozilla/firefox/ifai5usm.default-release/sessionstore-backups

29M ./andrew/.mozilla/firefox/ifai5usm.default-release

4.0K ./andrew/.mozilla/firefox/Crash Reports/events

12K ./andrew/.mozilla/firefox/Crash Reports

8.0K ./andrew/.mozilla/firefox/4spvhaim.default

29M ./andrew/.mozilla/firefox

29M ./andrew/.mozilla

4.0K ./andrew/Videos

496K ./andrew/.cinnamon/spices.cache/desklet

1.8M ./andrew/.cinnamon/spices.cache/applet

62M ./andrew/.cinnamon/spices.cache/theme

184K ./andrew/.cinnamon/spices.cache/extension

64M ./andrew/.cinnamon/spices.cache

8.0K ./andrew/.cinnamon/configs/sound@cinnamon.org

16K ./andrew/.cinnamon/configs/menu@cinnamon.org

8.0K ./andrew/.cinnamon/configs/printers@cinnamon.org

8.0K ./andrew/.cinnamon/configs/show-desktop@cinnamon.org

8.0K ./andrew/.cinnamon/configs/notifications@cinnamon.org

8.0K ./andrew/.cinnamon/configs/power@cinnamon.org

8.0K ./andrew/.cinnamon/configs/favorites@cinnamon.org

8.0K ./andrew/.cinnamon/configs/network@cinnamon.org

16K ./andrew/.cinnamon/configs/grouped-window-list@cinnamon.org

8.0K ./andrew/.cinnamon/configs/calendar@cinnamon.org

100K ./andrew/.cinnamon/configs

64M ./andrew/.cinnamon

4.0K ./andrew/Downloads

12K ./andrew/.local/share/keyrings

4.0K ./andrew/.local/share/evolution/calendar/system

4.0K ./andrew/.local/share/evolution/calendar/trash

12K ./andrew/.local/share/evolution/calendar

4.0K ./andrew/.local/share/evolution/memos/trash

8.0K ./andrew/.local/share/evolution/memos

4.0K ./andrew/.local/share/evolution/tasks/system

4.0K ./andrew/.local/share/evolution/tasks/trash

12K ./andrew/.local/share/evolution/tasks

4.0K ./andrew/.local/share/evolution/addressbook/system/photos

92K ./andrew/.local/share/evolution/addressbook/system

4.0K ./andrew/.local/share/evolution/addressbook/trash

100K ./andrew/.local/share/evolution/addressbook

4.0K ./andrew/.local/share/evolution/mail/trash

8.0K ./andrew/.local/share/evolution/mail

144K ./andrew/.local/share/evolution

4.0K ./andrew/.local/share/applications

40K ./andrew/.local/share/gvfs-metadata

4.0K ./andrew/.local/share/icc

4.0K ./andrew/.local/share/nemo/actions

4.0K ./andrew/.local/share/nemo/scripts

12K ./andrew/.local/share/nemo

4.0K ./andrew/.local/share/nano

4.0K ./andrew/.local/share/cinnamon/desklets

4.0K ./andrew/.local/share/cinnamon/extensions

4.0K ./andrew/.local/share/cinnamon/search\_providers

4.0K ./andrew/.local/share/cinnamon/applets

20K ./andrew/.local/share/cinnamon

248K ./andrew/.local/share

252K ./andrew/.local

4.0K ./andrew/.gnupg/private-keys-v1.d

8.0K ./andrew/.gnupg

4.0K ./andrew/Documents/Midterm/link\_midterm

8.0K ./andrew/Documents/Midterm

4.0K ./andrew/Documents/week2/links

8.0K ./andrew/Documents/week2

12K ./andrew/Documents/week6

36K ./andrew/Documents

8.0K ./andrew/.linuxmint/mintupdate

12K ./andrew/.linuxmint

4.0K ./andrew/Music

8.0K ./andrew/.config/evolution/sources

12K ./andrew/.config/evolution

8.0K ./andrew/.config/caja

84K ./andrew/.config/pulse

8.0K ./andrew/.config/gtk-3.0

4.0K ./andrew/.config/autostart

8.0K ./andrew/.config/qt5ct

4.0K ./andrew/.config/cinnamon-session/saved-session

8.0K ./andrew/.config/cinnamon-session

8.0K ./andrew/.config/nemo

4.0K ./andrew/.config/goa-1.0

4.0K ./andrew/.config/menus/applications-merged

8.0K ./andrew/.config/menus

4.0K ./andrew/.config/procps

8.0K ./andrew/.config/dconf

20K ./andrew/.config/hexchat

196K ./andrew/.config

4.0K ./andrew/.cache/obexd

4.0K ./andrew/.cache/evolution/calendar/trash

8.0K ./andrew/.cache/evolution/calendar

4.0K ./andrew/.cache/evolution/memos/trash

8.0K ./andrew/.cache/evolution/memos

4.0K ./andrew/.cache/evolution/tasks/trash

8.0K ./andrew/.cache/evolution/tasks

4.0K ./andrew/.cache/evolution/addressbook/trash

8.0K ./andrew/.cache/evolution/addressbook

4.0K ./andrew/.cache/evolution/mail/trash

8.0K ./andrew/.cache/evolution/mail

4.0K ./andrew/.cache/evolution/sources/trash

8.0K ./andrew/.cache/evolution/sources

52K ./andrew/.cache/evolution

12K ./andrew/.cache/fontconfig

1.4M ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/personality-provider

144K ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/settings/main/quicksuggest

12K ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/settings/main/ms-language-packs/browser/newtab

16K ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/settings/main/ms-language-packs/browser

20K ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/settings/main/ms-language-packs

168K ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/settings/main

172K ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/settings

12M ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/safebrowsing/google4

14M ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/safebrowsing

21M ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/startupCache

20K ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/thumbnails

16K ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/cache2/doomed

126M ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/cache2/entries

126M ./andrew/.cache/mozilla/firefox/ifai5usm.default-release/cache2

161M ./andrew/.cache/mozilla/firefox/ifai5usm.default-release

4.0K ./andrew/.cache/mozilla/firefox/4spvhaim.default

161M ./andrew/.cache/mozilla/firefox

161M ./andrew/.cache/mozilla

4.0K ./andrew/.cache/gnome-screenshot

8.0K ./andrew/.cache/mesa\_shader\_cache/35

8.0K ./andrew/.cache/mesa\_shader\_cache/9f

8.0K ./andrew/.cache/mesa\_shader\_cache/54

8.0K ./andrew/.cache/mesa\_shader\_cache/81

4.0K ./andrew/.cache/mesa\_shader\_cache/aa

8.0K ./andrew/.cache/mesa\_shader\_cache/c4

8.0K ./andrew/.cache/mesa\_shader\_cache/2f

8.0K ./andrew/.cache/mesa\_shader\_cache/2e

8.0K ./andrew/.cache/mesa\_shader\_cache/cc

8.0K ./andrew/.cache/mesa\_shader\_cache/1e

8.0K ./andrew/.cache/mesa\_shader\_cache/30

8.0K ./andrew/.cache/mesa\_shader\_cache/4e

4.0K ./andrew/.cache/mesa\_shader\_cache/64

8.0K ./andrew/.cache/mesa\_shader\_cache/d7

8.0K ./andrew/.cache/mesa\_shader\_cache/1f

8.0K ./andrew/.cache/mesa\_shader\_cache/c0

8.0K ./andrew/.cache/mesa\_shader\_cache/2d

8.0K ./andrew/.cache/mesa\_shader\_cache/77

8.0K ./andrew/.cache/mesa\_shader\_cache/d2

12K ./andrew/.cache/mesa\_shader\_cache/6b

8.0K ./andrew/.cache/mesa\_shader\_cache/6f

8.0K ./andrew/.cache/mesa\_shader\_cache/38

8.0K ./andrew/.cache/mesa\_shader\_cache/c6

8.0K ./andrew/.cache/mesa\_shader\_cache/98

8.0K ./andrew/.cache/mesa\_shader\_cache/29

8.0K ./andrew/.cache/mesa\_shader\_cache/0f

8.0K ./andrew/.cache/mesa\_shader\_cache/6e

8.0K ./andrew/.cache/mesa\_shader\_cache/b0

8.0K ./andrew/.cache/mesa\_shader\_cache/0c

8.0K ./andrew/.cache/mesa\_shader\_cache/04

8.0K ./andrew/.cache/mesa\_shader\_cache/7d

12K ./andrew/.cache/mesa\_shader\_cache/70

8.0K ./andrew/.cache/mesa\_shader\_cache/4f

8.0K ./andrew/.cache/mesa\_shader\_cache/fa

8.0K ./andrew/.cache/mesa\_shader\_cache/3c

8.0K ./andrew/.cache/mesa\_shader\_cache/39

8.0K ./andrew/.cache/mesa\_shader\_cache/da

8.0K ./andrew/.cache/mesa\_shader\_cache/24

8.0K ./andrew/.cache/mesa\_shader\_cache/7c

8.0K ./andrew/.cache/mesa\_shader\_cache/2a

8.0K ./andrew/.cache/mesa\_shader\_cache/ad

8.0K ./andrew/.cache/mesa\_shader\_cache/55

8.0K ./andrew/.cache/mesa\_shader\_cache/89

8.0K ./andrew/.cache/mesa\_shader\_cache/13

12K ./andrew/.cache/mesa\_shader\_cache/16

12K ./andrew/.cache/mesa\_shader\_cache/5b

8.0K ./andrew/.cache/mesa\_shader\_cache/75

8.0K ./andrew/.cache/mesa\_shader\_cache/a1

12K ./andrew/.cache/mesa\_shader\_cache/03

8.0K ./andrew/.cache/mesa\_shader\_cache/59

12K ./andrew/.cache/mesa\_shader\_cache/8d

8.0K ./andrew/.cache/mesa\_shader\_cache/b7

480K ./andrew/.cache/mesa\_shader\_cache

436K ./andrew/.cache/samba

140K ./andrew/.cache/wallpaper

162M ./andrew/.cache

4.0K ./andrew/.themes

4.0K ./andrew/Desktop

4.0K ./andrew/week4

4.0K ./andrew/Public

469M ./andrew

4.0K ./koenigtest/Templates

4.0K ./koenigtest/Pictures

du: cannot read directory './koenigtest/.mozilla': Permission denied

4.0K ./koenigtest/.mozilla

4.0K ./koenigtest/Videos

4.0K ./koenigtest/.cinnamon/spices.cache/desklet

4.0K ./koenigtest/.cinnamon/spices.cache/applet

4.0K ./koenigtest/.cinnamon/spices.cache/theme

4.0K ./koenigtest/.cinnamon/spices.cache/extension

20K ./koenigtest/.cinnamon/spices.cache

8.0K ./koenigtest/.cinnamon/configs/sound@cinnamon.org

16K ./koenigtest/.cinnamon/configs/menu@cinnamon.org

8.0K ./koenigtest/.cinnamon/configs/printers@cinnamon.org

8.0K ./koenigtest/.cinnamon/configs/show-desktop@cinnamon.org

8.0K ./koenigtest/.cinnamon/configs/notifications@cinnamon.org

8.0K ./koenigtest/.cinnamon/configs/power@cinnamon.org

8.0K ./koenigtest/.cinnamon/configs/favorites@cinnamon.org

8.0K ./koenigtest/.cinnamon/configs/network@cinnamon.org

16K ./koenigtest/.cinnamon/configs/grouped-window-list@cinnamon.org

8.0K ./koenigtest/.cinnamon/configs/calendar@cinnamon.org

100K ./koenigtest/.cinnamon/configs

124K ./koenigtest/.cinnamon

4.0K ./koenigtest/Downloads

du: cannot read directory './koenigtest/.local/share/keyrings': Permission denied

4.0K ./koenigtest/.local/share/keyrings

du: cannot read directory './koenigtest/.local/share/evolution': Permission denied

4.0K ./koenigtest/.local/share/evolution

4.0K ./koenigtest/.local/share/applications

4.0K ./koenigtest/.local/share/icc

4.0K ./koenigtest/.local/share/nemo/actions

4.0K ./koenigtest/.local/share/nemo/scripts

12K ./koenigtest/.local/share/nemo

du: cannot read directory './koenigtest/.local/share/cinnamon': Permission denied

4.0K ./koenigtest/.local/share/cinnamon

36K ./koenigtest/.local/share

40K ./koenigtest/.local

du: cannot read directory './koenigtest/.gnupg': Permission denied

4.0K ./koenigtest/.gnupg

4.0K ./koenigtest/Documents

4.0K ./koenigtest/Music

du: cannot read directory './koenigtest/.config/evolution': Permission denied

4.0K ./koenigtest/.config/evolution

8.0K ./koenigtest/.config/caja

du: cannot read directory './koenigtest/.config/pulse': Permission denied

4.0K ./koenigtest/.config/pulse

du: cannot read directory './koenigtest/.config/gtk-3.0': Permission denied

4.0K ./koenigtest/.config/gtk-3.0

4.0K ./koenigtest/.config/autostart

8.0K ./koenigtest/.config/qt5ct

4.0K ./koenigtest/.config/cinnamon-session/saved-session

8.0K ./koenigtest/.config/cinnamon-session

8.0K ./koenigtest/.config/nemo

4.0K ./koenigtest/.config/goa-1.0

4.0K ./koenigtest/.config/menus/applications-merged

8.0K ./koenigtest/.config/menus

du: cannot read directory './koenigtest/.config/dconf': Permission denied

4.0K ./koenigtest/.config/dconf

20K ./koenigtest/.config/hexchat

96K ./koenigtest/.config

du: cannot read directory './koenigtest/.cache/obexd': Permission denied

4.0K ./koenigtest/.cache/obexd

du: cannot read directory './koenigtest/.cache/evolution': Permission denied

4.0K ./koenigtest/.cache/evolution

12K ./koenigtest/.cache/fontconfig

du: cannot read directory './koenigtest/.cache/mozilla': Permission denied

4.0K ./koenigtest/.cache/mozilla

8.0K ./koenigtest/.cache/mesa\_shader\_cache/9f

8.0K ./koenigtest/.cache/mesa\_shader\_cache/54

8.0K ./koenigtest/.cache/mesa\_shader\_cache/c4

8.0K ./koenigtest/.cache/mesa\_shader\_cache/2f

8.0K ./koenigtest/.cache/mesa\_shader\_cache/cc

8.0K ./koenigtest/.cache/mesa\_shader\_cache/4e

8.0K ./koenigtest/.cache/mesa\_shader\_cache/d7

8.0K ./koenigtest/.cache/mesa\_shader\_cache/1f

8.0K ./koenigtest/.cache/mesa\_shader\_cache/c0

12K ./koenigtest/.cache/mesa\_shader\_cache/6b

8.0K ./koenigtest/.cache/mesa\_shader\_cache/98

8.0K ./koenigtest/.cache/mesa\_shader\_cache/6e

8.0K ./koenigtest/.cache/mesa\_shader\_cache/b0

8.0K ./koenigtest/.cache/mesa\_shader\_cache/0c

8.0K ./koenigtest/.cache/mesa\_shader\_cache/04

8.0K ./koenigtest/.cache/mesa\_shader\_cache/70

8.0K ./koenigtest/.cache/mesa\_shader\_cache/4f

8.0K ./koenigtest/.cache/mesa\_shader\_cache/3c

8.0K ./koenigtest/.cache/mesa\_shader\_cache/7c

8.0K ./koenigtest/.cache/mesa\_shader\_cache/ad

8.0K ./koenigtest/.cache/mesa\_shader\_cache/55

8.0K ./koenigtest/.cache/mesa\_shader\_cache/13

12K ./koenigtest/.cache/mesa\_shader\_cache/16

8.0K ./koenigtest/.cache/mesa\_shader\_cache/75

8.0K ./koenigtest/.cache/mesa\_shader\_cache/a1

8.0K ./koenigtest/.cache/mesa\_shader\_cache/59

8.0K ./koenigtest/.cache/mesa\_shader\_cache/8d

268K ./koenigtest/.cache/mesa\_shader\_cache

du: cannot read directory './koenigtest/.cache/wallpaper': Permission denied

4.0K ./koenigtest/.cache/wallpaper

300K ./koenigtest/.cache

4.0K ./koenigtest/.themes

4.0K ./koenigtest/Desktop

4.0K ./koenigtest/Public

652K ./koenigtest

4.0K ./scriptdirectory

12K ./scripts\_hw

469M .

**andrew@andrew-VirtualBox**:**/home**$ du -hs

du: cannot read directory './koenigtest/.mozilla': Permission denied

du: cannot read directory './koenigtest/.local/share/keyrings': Permission denied

du: cannot read directory './koenigtest/.local/share/evolution': Permission denied

du: cannot read directory './koenigtest/.local/share/cinnamon': Permission denied

du: cannot read directory './koenigtest/.gnupg': Permission denied

du: cannot read directory './koenigtest/.config/evolution': Permission denied

du: cannot read directory './koenigtest/.config/pulse': Permission denied

du: cannot read directory './koenigtest/.config/gtk-3.0': Permission denied

du: cannot read directory './koenigtest/.config/dconf': Permission denied

du: cannot read directory './koenigtest/.cache/obexd': Permission denied

du: cannot read directory './koenigtest/.cache/evolution': Permission denied

du: cannot read directory './koenigtest/.cache/mozilla': Permission denied

du: cannot read directory './koenigtest/.cache/wallpaper': Permission denied

469M .

**andrew@andrew-VirtualBox**:**/home**$ /bin/bash

**andrew@andrew-VirtualBox**:**/home**$ /bin/bash

**andrew@andrew-VirtualBox**:**/home**$ ps -forest

error: unknown user-defined format specifier "rest"

Usage:

 ps [options]

 Try 'ps --help <simple|list|output|threads|misc|all>'

  or 'ps --help <s|l|o|t|m|a>'

 for additional help text.

For more details see ps(1).

**andrew@andrew-VirtualBox**:**/home**$ ps --forest

    PID TTY          TIME CMD

   1386 pts/0    00:00:00 bash

   2161 pts/0    00:00:00  \\_ bash

   2167 pts/0    00:00:00      \\_ bash

   2178 pts/0    00:00:00          \\_ ps

**andrew@andrew-VirtualBox**:**/home**$ type history

history is a shell builtin

**andrew@andrew-VirtualBox**:**/home**$ cd /Midterm

bash: cd: /Midterm: No such file or directory

**andrew@andrew-VirtualBox**:**/home**$ cd ./Midterm

bash: cd: ./Midterm: No such file or directory

**andrew@andrew-VirtualBox**:**/home**$ cd ./Midterm/

bash: cd: ./Midterm/: No such file or directory

**andrew@andrew-VirtualBox**:**/home**$ cd /home/

andrew/          koenigtest/      scriptdirectory/ scripts\_hw/

**andrew@andrew-VirtualBox**:**/home**$ cd /home/

andrew/          koenigtest/      scriptdirectory/ scripts\_hw/

**andrew@andrew-VirtualBox**:**/home**$ cd /home/

andrew/          koenigtest/      scriptdirectory/ scripts\_hw/

**andrew@andrew-VirtualBox**:**/home**$ cd /home/koenigtest/

.cache/    Desktop/   .gnupg/    Music/     Templates/

.cinnamon/ Documents/ .local/    Pictures/  .themes/

.config/   Downloads/ .mozilla/  Public/    Videos/

**andrew@andrew-VirtualBox**:**/home**$ cd /home/koenigtest/Documents

**andrew@andrew-VirtualBox**:**/home/koenigtest/Documents**$ ps --forest

    PID TTY          TIME CMD

   1386 pts/0    00:00:00 bash

   2161 pts/0    00:00:00  \\_ bash

   2167 pts/0    00:00:00      \\_ bash

   2304 pts/0    00:00:00          \\_ ps

**andrew@andrew-VirtualBox**:**/home/koenigtest/Documents**$ exi

exif  exit

**andrew@andrew-VirtualBox**:**/home/koenigtest/Documents**$ exit

exit

**andrew@andrew-VirtualBox**:**/home**$ ps --forest

    PID TTY          TIME CMD

   1386 pts/0    00:00:00 bash

   2161 pts/0    00:00:00  \\_ bash

   2305 pts/0    00:00:00      \\_ ps

**andrew@andrew-VirtualBox**:**/home**$ exit

exit

**andrew@andrew-VirtualBox**:**/home**$ ps --forest

    PID TTY          TIME CMD

   1386 pts/0    00:00:00 bash

   2310 pts/0    00:00:00  \\_ ps

**andrew@andrew-VirtualBox**:**/home**$ cd /home/

andrew/          koenigtest/      scriptdirectory/ scripts\_hw/

**andrew@andrew-VirtualBox**:**/home**$ cd

andrew/          koenigtest/      scriptdirectory/ scripts\_hw/

**andrew@andrew-VirtualBox**:**/home**$ cd ./

andrew/          koenigtest/      scriptdirectory/ scripts\_hw/

**andrew@andrew-VirtualBox**:**/home**$ cd ./

andrew/          koenigtest/      scriptdirectory/ scripts\_hw/

**andrew@andrew-VirtualBox**:**/home**$ cd /

bin/        etc/        lib64/      mnt/        run/        tmp/

boot/       home/       libx32/     opt/        sbin/       usr/

cdrom/      lib/        lost+found/ proc/       srv/        var/

dev/        lib32/      media/      root/       sys/

**andrew@andrew-VirtualBox**:**/home**$ cd /home/

andrew/          koenigtest/      scriptdirectory/ scripts\_hw/

**andrew@andrew-VirtualBox**:**/home**$ cd /home/andrew/

.cache/     Desktop/    .gnupg/     .mozilla/   Public/     Videos/

.cinnamon/  Documents/  .linuxmint/ Music/      Templates/  week4/

.config/    Downloads/  .local/     Pictures/   .themes/

**andrew@andrew-VirtualBox**:**/home**$ cd /home/andrew/Documents/

Midterm/ week2/   week6/

**andrew@andrew-VirtualBox**:**/home**$ cd /home/andrew/Documents/Midterm/

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ touch midtermscript

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ nano midtermscript

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ chmod 777 midtermscript

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ PATH=$PATH: ./midtermscript

$num1 is greater than 0

$num2 is greater than 0

$num1 and $num2 are not equal, because they differ by 26

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$ ./midtermscript

$num1 is greater than 0

$num2 is greater than 0

$num1 and $num2 are not equal, because they differ by 26

**andrew@andrew-VirtualBox**:**~/Documents/Midterm**$

<<<<< Paste your terminal capture above this line <<<<<