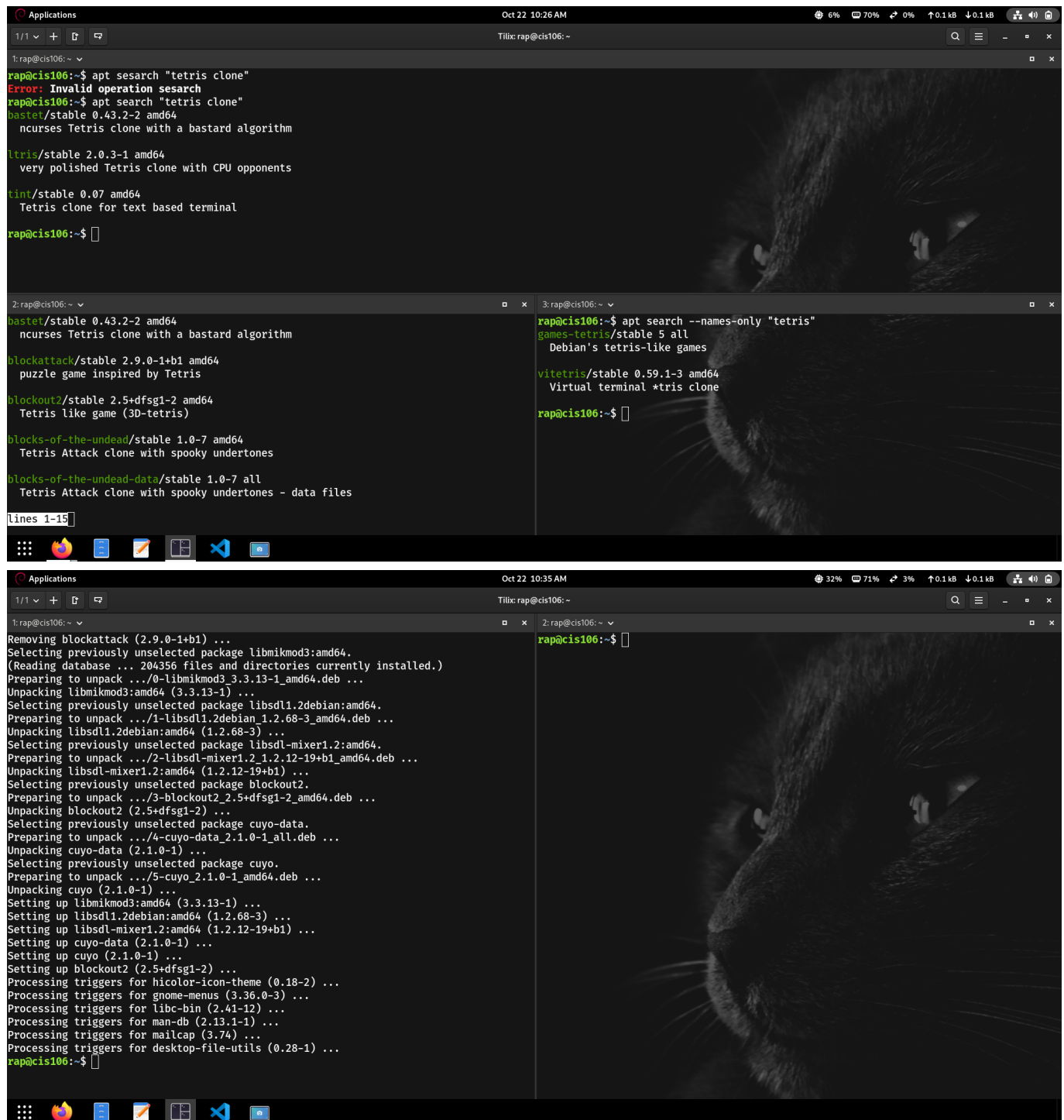


Lab 4 Submission

Question 1



```
Applications Oct 22 10:26 AM 6% 70% 0% 0.1kB 0.1kB
1/1 + [?]
Tilix rap@cis106: ~

rap@cis106:~$ apt search "tetris clone"
Error: Invalid operation search
rap@cis106:~$ apt search "tetris clone"
bastet/stable 0.43.2-2 amd64
  ncurses Tetris clone with a bastard algorithm

ltris/stable 2.0.3-1 amd64
  very polished Tetris clone with CPU opponents

tint/stable 0.07 amd64
  Tetris clone for text based terminal

rap@cis106:~$

2: rap@cis106: ~ 3: rap@cis106: ~
bastet/stable 0.43.2-2 amd64
  ncurses Tetris clone with a bastard algorithm

blockattack/stable 2.9.0-1+b1 amd64
  puzzle game inspired by Tetris

blockout2/stable 2.5+dfsg1-2 amd64
  Tetris like game (3D-tetris)

blocks-of-the-undead/stable 1.0-7 amd64
  Tetris Attack clone with spooky undertones

blocks-of-the-undead-data/stable 1.0-7 all
  Tetris Attack clone with spooky undertones - data files

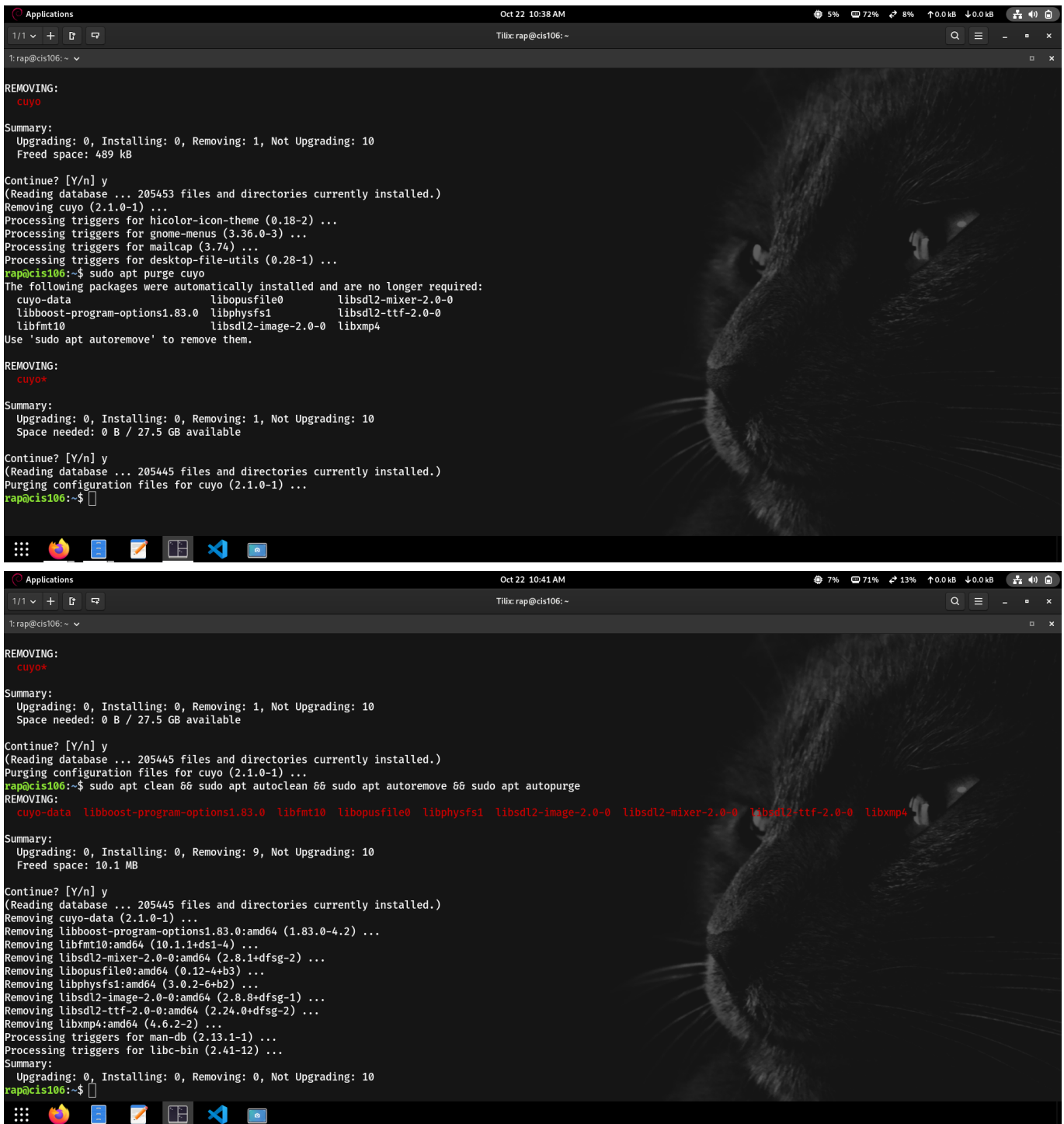
lines 1-15

rap@cis106:~$ apt search --names-only "tetris"
games-tetris/stable 5 all
  Debian's tetris-like games

vitetris/stable 0.59.1-3 amd64
  Virtual terminal *tris clone

rap@cis106:~$

Removing blockattack (2.9.0-1+b1) ...
Selecting previously unselected package libmikmod3:amd64.
(Reading database ... 204356 files and directories currently installed.)
Preparing to unpack .../0-libmikmod3_3.3.13-1_amd64.deb ...
Unpacking libmikmod3:amd64 (3.3.13-1) ...
Selecting previously unselected package libsd1.2debian:amd64.
Preparing to unpack .../1-libsd1.2debian_1.2.68-3_amd64.deb ...
Unpacking libsd1.2debian:amd64 (1.2.68-3) ...
Selecting previously unselected package libsd1-mixer1.2:amd64.
Preparing to unpack .../2-libsd1-mixer1.2_1.2.12-19+b1_amd64.deb ...
Unpacking libsd1-mixer1.2:amd64 (1.2.12-19+b1) ...
Selecting previously unselected package blockout2.
Preparing to unpack .../3-blockout2_2.5+dfsg1-2_amd64.deb ...
Unpacking blockout2 (2.5+dfsg1-2) ...
Selecting previously unselected package cuyo-data.
Preparing to unpack .../4-cuyo-data_2.1.0-1_all.deb ...
Unpacking cuyo-data (2.1.0-1) ...
Selecting previously unselected package cuyo.
Preparing to unpack .../5-cuyo_2.1.0-1_amd64.deb ...
Unpacking cuyo (2.1.0-1) ...
Setting up libmikmod3:amd64 (3.3.13-1) ...
Setting up libsd1.2debian:amd64 (1.2.68-3) ...
Setting up libsd1-mixer1.2:amd64 (1.2.12-19+b1) ...
Setting up cuyo-data (2.1.0-1) ...
Setting up cuyo (2.1.0-1) ...
Setting up blockout2 (2.5+dfsg1-2) ...
Processing triggers for hicolor-icon-theme (0.18-2) ...
Processing triggers for gnome-menus (3.36.0-3) ...
Processing triggers for libc-bin (2.41-12) ...
Processing triggers for man-db (2.13.1-1) ...
Processing triggers for mailcap (3.74) ...
Processing triggers for desktop-file-utils (0.28-1) ...
rap@cis106:~$
```



```
Applications Oct 22 10:38 AM 5% 72% 8% 0.0 kB 0.0 kB
Tilix: rap@cis106: ~

rap@cis106:~$ sudo apt purge cuyo
REMOVING:
cuyo
Summary:
Upgrading: 0, Installing: 0, Removing: 1, Not Upgrading: 10
Freed space: 489 kB

Continue? [Y/n] y
(Reading database ... 205453 files and directories currently installed.)
Removing cuyo (2.1.0-1) ...
Processing triggers for hicolor-icon-theme (0.18-2) ...
Processing triggers for gnome-menus (3.36.0-3) ...
Processing triggers for mailcap (3.74) ...
Processing triggers for desktop-file-utils (0.28-1) ...
rap@cis106:~$ sudo apt purge cuyo
The following packages were automatically installed and are no longer required:
cuyo-data libboost-program-options1.83.0 libbpf0 libbsd2-mixer-2.0-0
libboost-program-options1.83.0 libphysfs1 libbsd2-ttf-2.0-0
libbpf0 libbsd2-image-2.0-0 libxmp4
Use 'sudo apt autoremove' to remove them.

REMOVING:
cuyo*
Summary:
Upgrading: 0, Installing: 0, Removing: 1, Not Upgrading: 10
Space needed: 0 B / 27.5 GB available

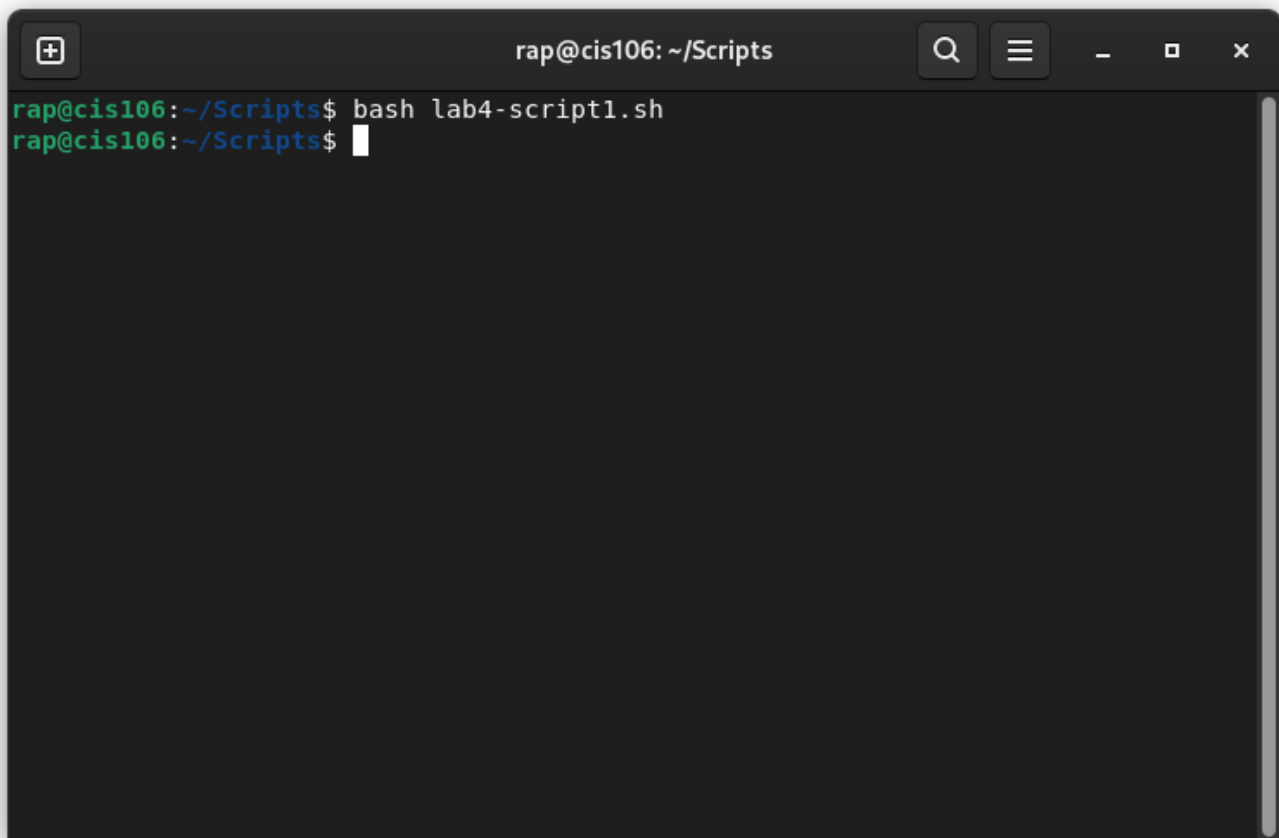
Continue? [Y/n] y
(Reading database ... 205445 files and directories currently installed.)
Purging configuration files for cuyo (2.1.0-1) ...
rap@cis106:~$

Applications Oct 22 10:41 AM 7% 71% 13% 0.0 kB 0.0 kB
Tilix: rap@cis106: ~

rap@cis106:~$ sudo apt clean && sudo apt autoclean && sudo apt autoremove && sudo apt autopurge
REMOVING:
cuyo-data libboost-program-options1.83.0 libbpf0 libbpf0 libbsd2-image-2.0-0 libbsd2-mixer-2.0-0 libbsd2-ttf-2.0-0 libxmp4
Summary:
Upgrading: 0, Installing: 0, Removing: 9, Not Upgrading: 10
Freed space: 10.1 MB

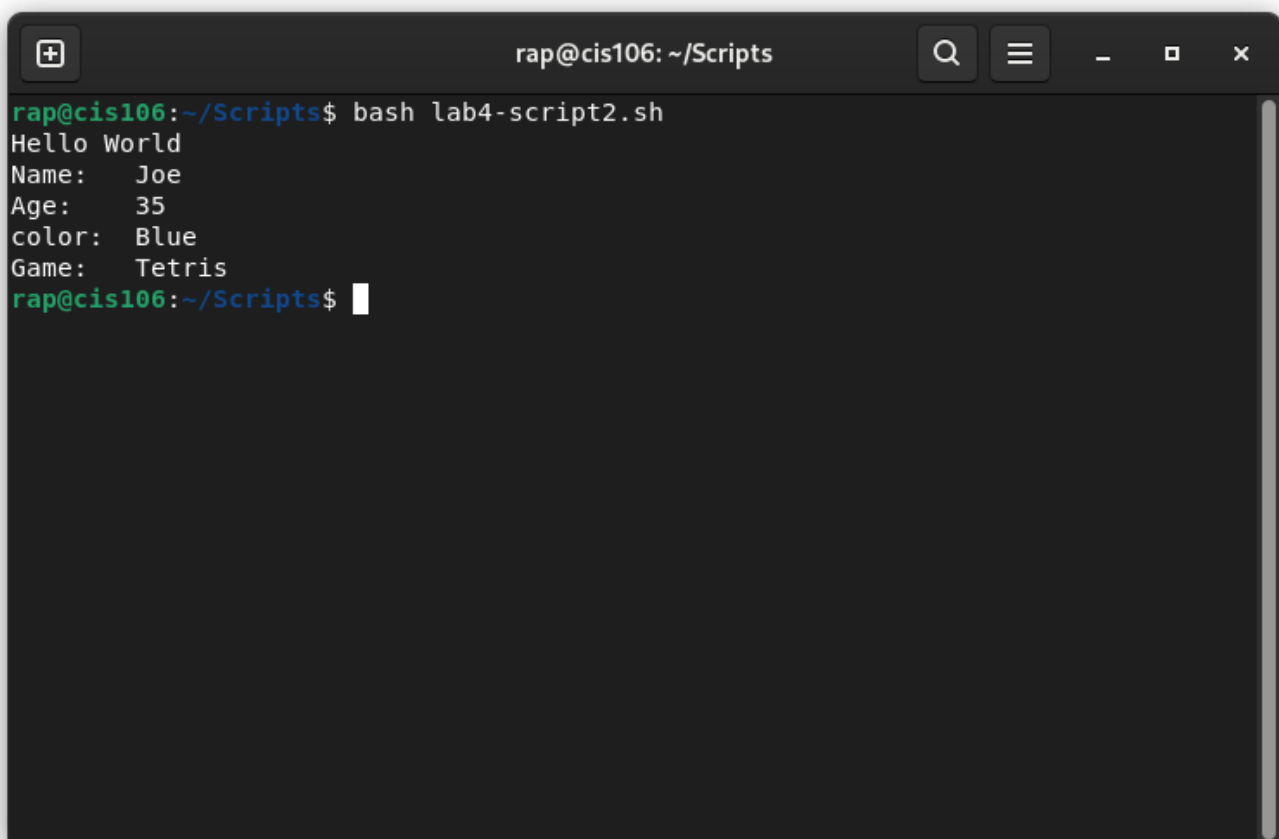
Continue? [Y/n] y
(Reading database ... 205445 files and directories currently installed.)
Removing cuyo-data (2.1.0-1) ...
Removing libboost-program-options1.83.0:amd64 (1.83.0-4.2) ...
Removing libbpf0:amd64 (10.1.1+ds1-4) ...
Removing libbsd2-mixer-2.0-0:amd64 (2.8.1+dfsg-2) ...
Removing libbpf0:amd64 (0.12-4+b3) ...
Removing libphysfs1:amd64 (3.0.2-6+b2) ...
Removing libbsd2-image-2.0-0:amd64 (2.8.8+dfsg-1) ...
Removing libbsd2-ttf-2.0-0:amd64 (2.24.0+dfsg-2) ...
Removing libxmp4:amd64 (4.6.2-2) ...
Processing triggers for man-db (2.13.1-1) ...
Processing triggers for libc-bin (2.41-12) ...
Summary:
Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 10
rap@cis106:~$
```

Question 2



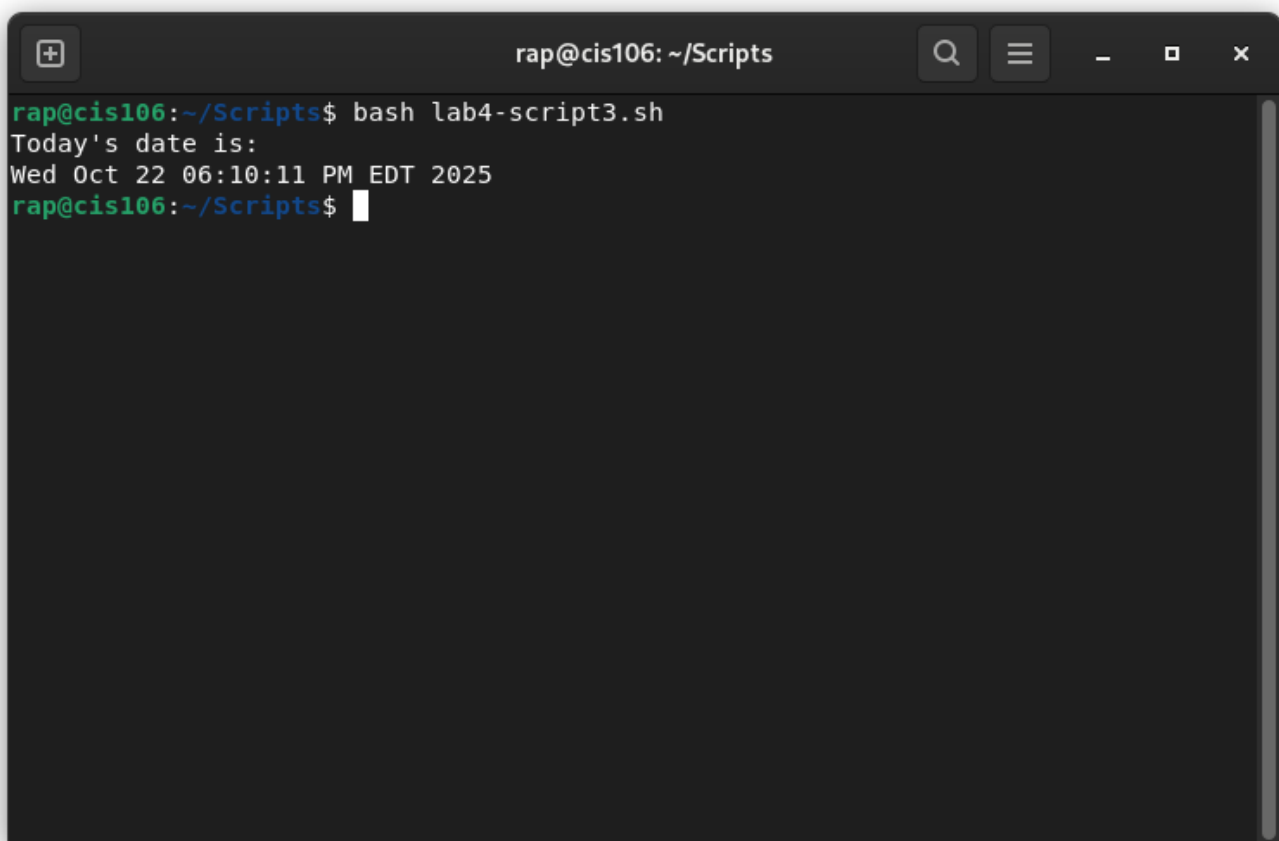
A terminal window titled "rap@cis106: ~/Scripts" with search, menu, and window control icons in the title bar. The prompt is "rap@cis106:~/Scripts\$". The command "bash lab4-script1.sh" has been entered and executed. The prompt is now "rap@cis106:~/Scripts\$" with a cursor.

```
rap@cis106:~/Scripts$ bash lab4-script1.sh
rap@cis106:~/Scripts$
```



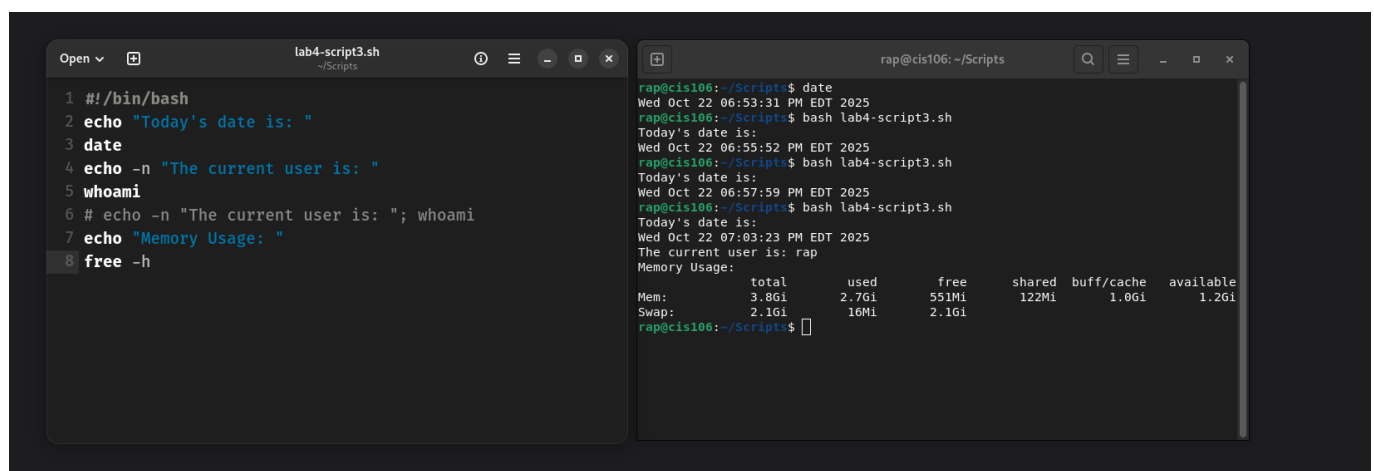
A terminal window titled "rap@cis106: ~/Scripts" with search, menu, and window control icons in the title bar. The prompt is "rap@cis106:~/Scripts\$". The command "bash lab4-script2.sh" has been entered and executed. The output is "Hello World", "Name: Joe", "Age: 35", "color: Blue", and "Game: Tetris". The prompt is now "rap@cis106:~/Scripts\$" with a cursor.

```
rap@cis106:~/Scripts$ bash lab4-script2.sh
Hello World
Name:  Joe
Age:   35
color: Blue
Game:  Tetris
rap@cis106:~/Scripts$
```



A terminal window titled 'rap@cis106: ~/Scripts' with search, menu, and window control icons. The prompt is 'rap@cis106:~/Scripts\$'. The user enters 'bash lab4-script3.sh'. The script outputs 'Today's date is:' followed by 'Wed Oct 22 06:10:11 PM EDT 2025'. The prompt returns to 'rap@cis106:~/Scripts\$'.

```
rap@cis106:~/Scripts$ bash lab4-script3.sh
Today's date is:
Wed Oct 22 06:10:11 PM EDT 2025
rap@cis106:~/Scripts$
```



Two terminal windows are shown side-by-side. The left window, titled 'lab4-script3.sh', displays the script's source code. The right window, titled 'rap@cis106: ~/Scripts', shows the script being executed multiple times, displaying the date and user information.

lab4-script3.sh

```
1 #!/bin/bash
2 echo "Today's date is: "
3 date
4 echo -n "The current user is: "
5 whoami
6 # echo -n "The current user is: "; whoami
7 echo "Memory Usage: "
8 free -h
```

Execution Output

```
rap@cis106:~/Scripts$ date
Wed Oct 22 06:53:31 PM EDT 2025
rap@cis106:~/Scripts$ bash lab4-script3.sh
Today's date is:
Wed Oct 22 06:55:52 PM EDT 2025
rap@cis106:~/Scripts$ bash lab4-script3.sh
Today's date is:
Wed Oct 22 06:57:59 PM EDT 2025
rap@cis106:~/Scripts$ bash lab4-script3.sh
Today's date is:
Wed Oct 22 07:03:23 PM EDT 2025
The current user is: rap
Memory Usage:

```

	total	used	free	shared	buff/cache	available
Mem:	3.8Gi	2.7Gi	551Mi	122Mi	1.0Gi	1.2Gi
Swap:	2.1Gi	16Mi	2.1Gi			

```
rap@cis106:~/Scripts$
```

Question 3

LABS

challenge_lab4.sh

lab4-script3.sh

challenge_lab4.sh

challenge_lab4(5).sh

```
1 #!/bin/bash
2 echo -e "_____ "
3 figlet System
4 echo -e "DATE UTC:          " $(date +"%m-%d-%Y-%T")
5 echo -e "HOSTNAME:           " $(hostname)
6 echo -e "UPTIME:              " $(uptime -p)
7 echo -e "USER:                " $(whoami)
8 figlet MEMORY
9 free -h
10 figlet DISK
11 df -h
12 echo
```

rap@cis106: ~/Scripts

```
rap@cis106:~/Scripts$ bash ~/cis106/labs/lab4/challenge_lab4.sh
rap@cis106:~/Scripts$ bash challenge_lab4.sh
rap@cis106:~/Scripts$ bash challenge_lab4.sh
rap@cis106:~/Scripts$ bash challenge_lab4(5).sh
bash: syntax error near unexpected token '('
rap@cis106:~/Scripts$ bash challenge_lab4(5).sh
bash: syntax error near unexpected token '('
rap@cis106:~/Scripts$ bash challenge_lab4.sh
```

System

DATE UTC: 10-22-2025-20:30:35

cis106.com/labs/lab4/

challenge_lab4.sh

lab4-script3.sh

challenge_lab4.sh

```
1 #!/bin/bash
2 echo -e "_____ "
3 figlet System
4 echo -e "DATE UTC:          " $(date +"%m-%d-%Y-%T")
5 echo -e "HOSTNAME:           " $(hostname)
6 echo -e "UPTIME:              " $(uptime -p)
7 echo -e "USER:                " $(whoami)
8 figlet MEMORY
9 free -h
10 figlet DISK
11 df -h
12 echo
```

rap@cis106: ~/Scripts

```
rap@cis106:~/Scripts$ bash challenge_lab4.sh
```

System

DATE UTC: 10-22-2025-20:33:45

HOSTNAME: cis106

UPTIME: up 2 hours, 40 minutes

USER: rap

MEMORY

Mem:	total	used	free	shared	buff/cache	available
Swap:	3.8Gi	3.2Gi	327Mi	111Mi	703Mi	686Mi
	2.1Gi	549Mi	1.6Gi			

DISK

Filesystem	Size	Used	Avail	Use%	Mounted on
udev	1.9G	0	1.9G	0%	/dev
tmpfs	392M	4.4M	388M	2%	/run
/dev/sda1	38G	11G	26G	30%	/
tmpfs	2.0G	12K	2.0G	1%	/dev/shm
tmpfs	5.0M	0	5.0M	0%	/run/lock
tmpfs	1.0M	0	1.0M	0%	/run/credentials/systemd-journald.service
/dev/loop2	51M	51M	0	100%	/snap/snapd/25202
/dev/loop0	330M	330M	0	100%	/snap/code/208
/dev/loop3	64M	64M	0	100%	/snap/core20/2669
/dev/loop1	64M	64M	0	100%	/snap/core20/2599
tmpfs	2.0G	16K	2.0G	1%	/tmp
tmpfs	392M	188K	392M	1%	/run/user/1000
/dev/loop4	51M	51M	0	100%	/snap/snapd/25577
/dev/loop5	331M	331M	0	100%	/snap/code/211

How to install Starship Shell

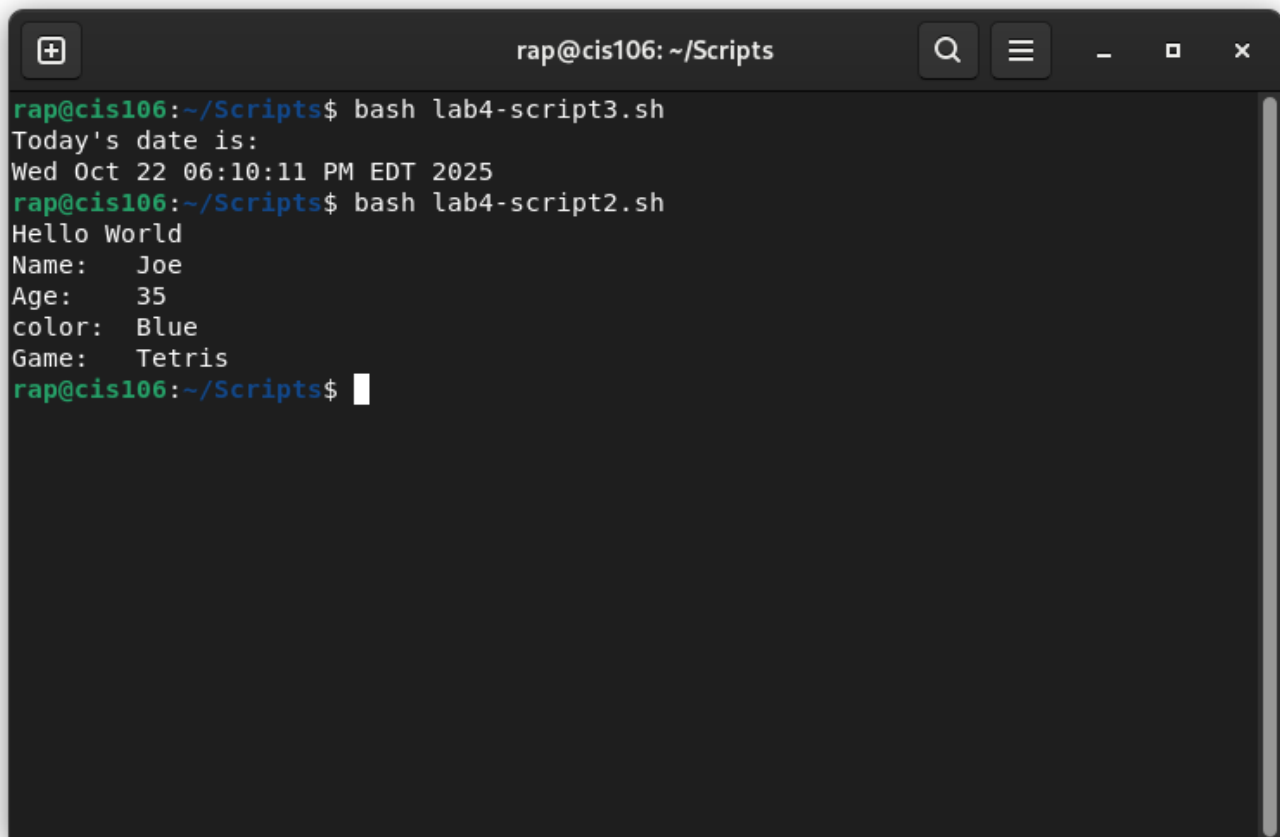
Install Jekyll

This site uses Just the Docs, a documentation theme for Jekyll.

free, df and date. You can also look at the "What is a shell" presentation from the previous lab which contains examples of these commands

- The date format can be achieved using the `date` command
- Save the script in the lab4 directory/folder
- Name the script `challenge_lab4.sh`

script

A terminal window titled 'rap@cis106: ~/Scripts' with standard window controls. The terminal shows the execution of two scripts. The first script, 'lab4-script3.sh', prints the current date and time. The second script, 'lab4-script2.sh', prints 'Hello World' followed by personal information: Name: Joe, Age: 35, color: Blue, and Game: Tetris. The prompt is currently at the end of the second script's output.

```
rap@cis106:~/Scripts$ bash lab4-script3.sh
Today's date is:
Wed Oct 22 06:10:11 PM EDT 2025
rap@cis106:~/Scripts$ bash lab4-script2.sh
Hello World
Name:   Joe
Age:    35
color:  Blue
Game:   Tetris
rap@cis106:~/Scripts$
```