

Lab 4 Submission

Question 1



The image shows a Tilix terminal window with three panes. The title bar reads 'Tilix: rsarikaya@cis106: ~'. The first pane shows the command 'apt search "tetris clone"' and its output, listing packages like bastet, ltris, and tint. The second pane shows the command 'apt search --names-only "tetris"' and its output, listing games-tetris and vitetris. The third pane is empty.

```
1: rsarikaya@cis106: ~  
rsarikaya@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  
  
rsarikaya@cis106:~$  
  
2: rsarikaya@cis106: ~  
bastet/stable 0.43.2-2 amd64  
  ncurses Tetris clone with a bastard  
  
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  
lines 1-10  
  
3: rsarikaya@cis106: ~  
rsarikaya@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  
  
rsarikaya@cis106:~$
```

```
1/1 v + [?] [?] Tilix: rsarikaya@cis106: ~
1: rsarikaya@cis106: ~ v
Processing triggers for mailcap (3.74) ...
rsarikaya@cis106:~$ sudo apt install blockout2+ cuyo+ blockattack-
The following packages were automatically installed and are no longer required:
  libfmt10      libphysfs1      libsdl2-mixer-2.0-0  libxmp4
  libopusfile0  libsdl2-image-2.0-0  libsdl2-ttf-2.0-0
Use 'sudo apt autoremove' to remove them.

Installing:
  blockout2  cuyo

Installing dependencies:
  cuyo-data  libmikmod3  libsdl-mixer1.2  libsdl1.2debian

REMOVING:
  blockattack

Summary:
  Upgrading: 0, Installing: 6, Removing: 1, Not Upgrading: 10
  Download size: 8,078 kB
  Space needed: 4,102 kB / 27.2 GB available

Continue? [Y/n] y
Get:1 https://deb.debian.org/debian trixie/main amd64 libmikmod3 amd64 3.3.13-1 [135 kB]
Get:2 https://deb.debian.org/debian trixie/main amd64 libsdl1.2debian amd64 1.2.68-3 [85.9 kB]
Get:3 https://deb.debian.org/debian trixie/main amd64 libsdl-mixer1.2 amd64 1.2.12-19+b1 [81.6
kB]
Get:4 https://deb.debian.org/debian trixie/main amd64 blockout2 amd64 2.5+dfsg1-2 [4,228 kB]
Get:5 https://deb.debian.org/debian trixie/main amd64 cuyo-data all 2.1.0-1 [3,372 kB]
Get:6 https://deb.debian.org/debian trixie/main amd64 cuyo amd64 2.1.0-1 [175 kB]
Fetched 8,078 kB in 1s (8,763 kB/s)
(Reading database ... 194119 files and directories currently installed.)
Removing blockattack (2.9.0-1+b1) ...
Selecting previously unselected package libmikmod3:amd64.
(Reading database ... 194092 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 libsdl1.2debian:amd64.
```

```
1/1 v + [ ] [ ] Tilix: rsarikaya@cis106: ~
1: rsarikaya@cis106: ~ v
  libfmt10  libphysfs1  libSDL2-mixer-2.0-0  libxmp4
Use 'sudo apt autoremove' to remove them.

REMOVING:
  cuyo

Summary:
  Upgrading: 0, Installing: 0, Removing: 1, Not Upgrading: 10
  Freed space: 489 kB

Continue? [Y/n] y
(Reading database ... 195189 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) ...
rsarikaya@cis106:~$ sudo apt purge cuyo
The following packages were automatically installed and are no longer required:
  cuyo-data  libopusfile0  libSDL2-image-2.0-0  libSDL2-ttf-2.0-0
  libfmt10  libphysfs1  libSDL2-mixer-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 / 27.2 GB available

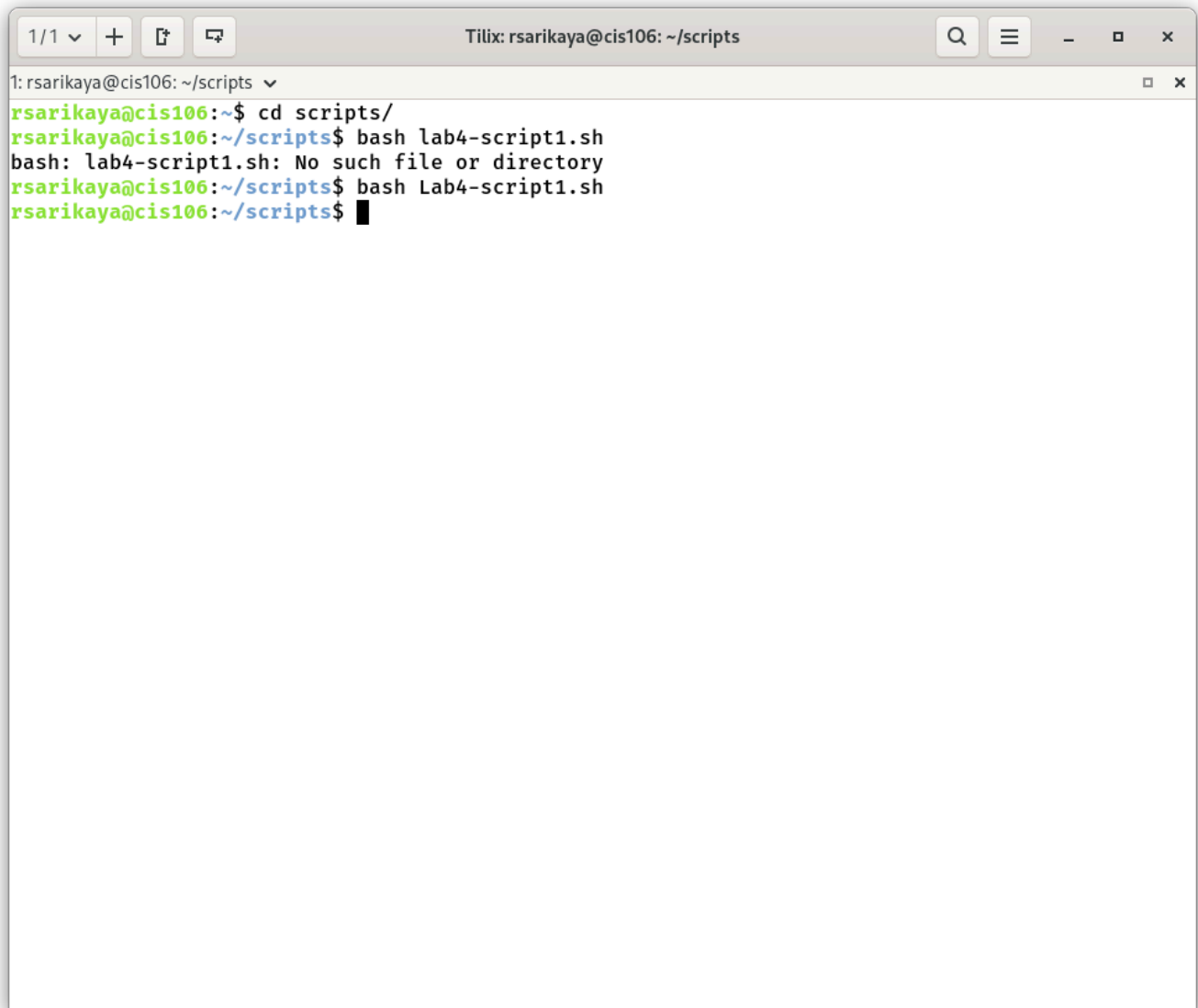
Continue? [Y/n] y
(Reading database ... 195181 files and directories currently installed.)
Purging configuration files for cuyo (2.1.0-1) ...
rsarikaya@cis106:~$ █
```

```
1/1 v + [?] [?] Tilix: rsarikaya@cis106: ~
1: rsarikaya@cis106: ~ v
rsarikaya@cis106:~$ sudo apt clean && sudo apt autoclean && sudo apt autoremove && sudo apt aut
opurge
REMOVING:
  cuyo-data  libopusfile0  libSDL2-image-2.0-0  libSDL2-ttf-2.0-0
  libfmt10   libphysfs1    libSDL2-mixer-2.0-0  libxmp4

Summary:
  Upgrading: 0, Installing: 0, Removing: 8, Not Upgrading: 10
  Freed space: 7,495 kB

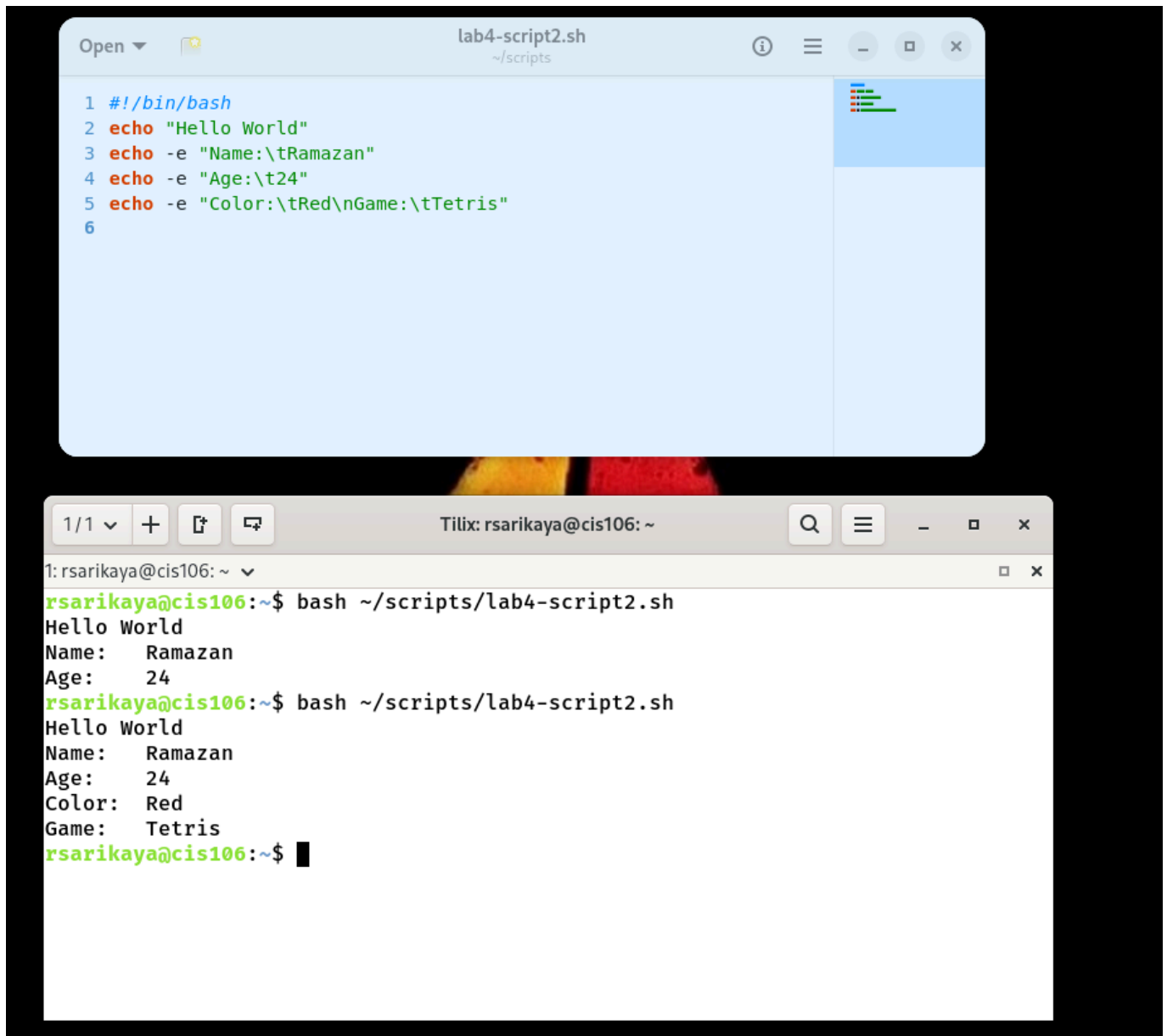
Continue? [Y/n] y
(Reading database ... 195181 files and directories currently installed.)
Removing cuyo-data (2.1.0-1) ...
Removing libfmt10:amd64 (10.1.1+ds1-4) ...
Removing libSDL2-mixer-2.0-0:amd64 (2.8.1+dfsg-2) ...
Removing libopusfile0:amd64 (0.12-4+b3) ...
Removing libphysfs1:amd64 (3.0.2-6+b2) ...
Removing libSDL2-image-2.0-0:amd64 (2.8.8+dfsg-1) ...
Removing libSDL2-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
rsarikaya@cis106:~$ █
```

Question 2



A terminal window titled "Tilix: rsarikaya@cis106: ~/scripts" with standard window controls. The terminal shows the following sequence of commands and outputs:

```
1: rsarikaya@cis106: ~/scripts v
rsarikaya@cis106:~$ cd scripts/
rsarikaya@cis106:~/scripts$ bash lab4-script1.sh
bash: lab4-script1.sh: No such file or directory
rsarikaya@cis106:~/scripts$ bash Lab4-script1.sh
rsarikaya@cis106:~/scripts$
```



The image shows two windows. The top window is a code editor titled 'lab4-script2.sh' with the path '~/.scripts'. It contains a shell script with six lines: a shebang, an echo statement, and three echo statements with escaped characters for tabs and newlines. The bottom window is a terminal titled 'Tilix: rsarikaya@cis106: ~'. It shows the script being executed twice, with the output of each run displayed below the command.

```
1 #!/bin/bash
2 echo "Hello World"
3 echo -e "Name:\tRamazan"
4 echo -e "Age:\t24"
5 echo -e "Color:\tRed\nGame:\tTetris"
6
```

```
1: rsarikaya@cis106: ~
rsarikaya@cis106:~$ bash ~/.scripts/lab4-script2.sh
Hello World
Name:   Ramazan
Age:    24
rsarikaya@cis106:~$ bash ~/.scripts/lab4-script2.sh
Hello World
Name:   Ramazan
Age:    24
Color:  Red
Game:   Tetris
rsarikaya@cis106:~$
```

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

```
rsarikaya@cis106:~$ bash ~/scripts/lab4-script3.sh
Today's date is:
Thu Oct 23 06:28:03 AM EDT 2025
The current user is:rsarikaya
Memory usage:
total used free shared buff/cache available
Mem: 3.8Gi 2.6Gi 293Mi 44Mi 1.2Gi 1.3Gi
Swap: 2.1Gi 386Mi 1.7Gi
```

```
rsarikaya@cis106:~$ bash ~/scripts/lab4-script3.sh
Today's date is:
Thu Oct 23 06:29:44 AM EDT 2025
The current user is:rsarikaya
Memory usage:
total used free shared buff/cache available
Mem: 3.8Gi 2.6Gi 312Mi 44Mi 1.2Gi 1.3Gi
Swap: 2.1Gi 386Mi 1.7Gi
```

Question 3

```
2 echo
3 figlet "SYSTEM"
4 echo
5
6 # Display system information
7 echo "DATE UTC: $(date -u '+%m/%d/%y %H:%M:%S')"
```

```
rsarikaya@cis106:~$ bash ~/scripts/challenge_lab4.sh
SYSTEM
DATE UTC: 10/23/25 11:19:12
HOSTNAME: cis106
UPTIME: 2 hours, 30 minutes
USER: rsarikaya
MEMORY
Memory usage:
total used free shared buff/cache available
Mem: 4016032 2994884 412424 62600 912612 1021148
Swap: 2186236 619284 1566952
DISK
```

script