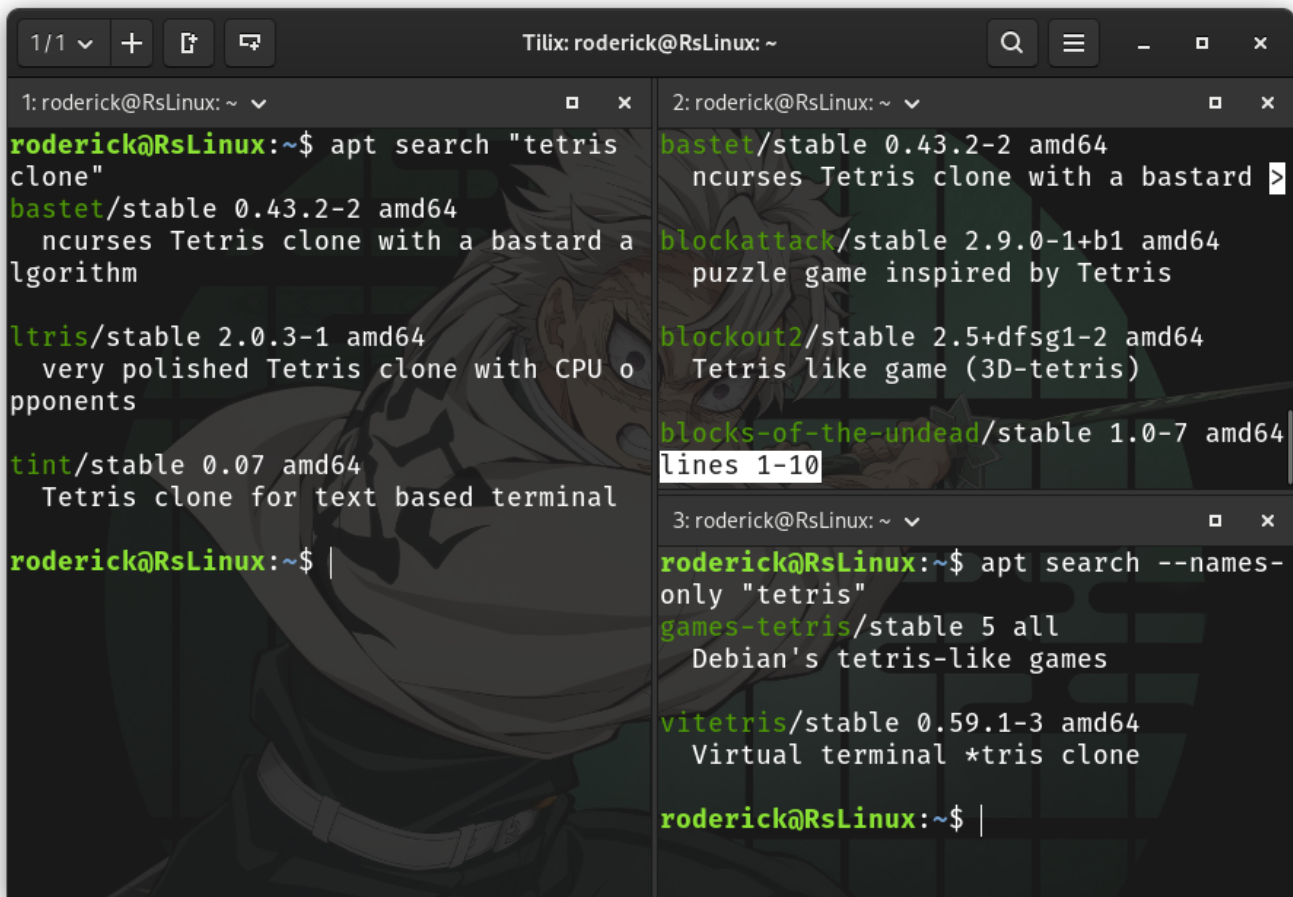


# Completed Lab 4

---

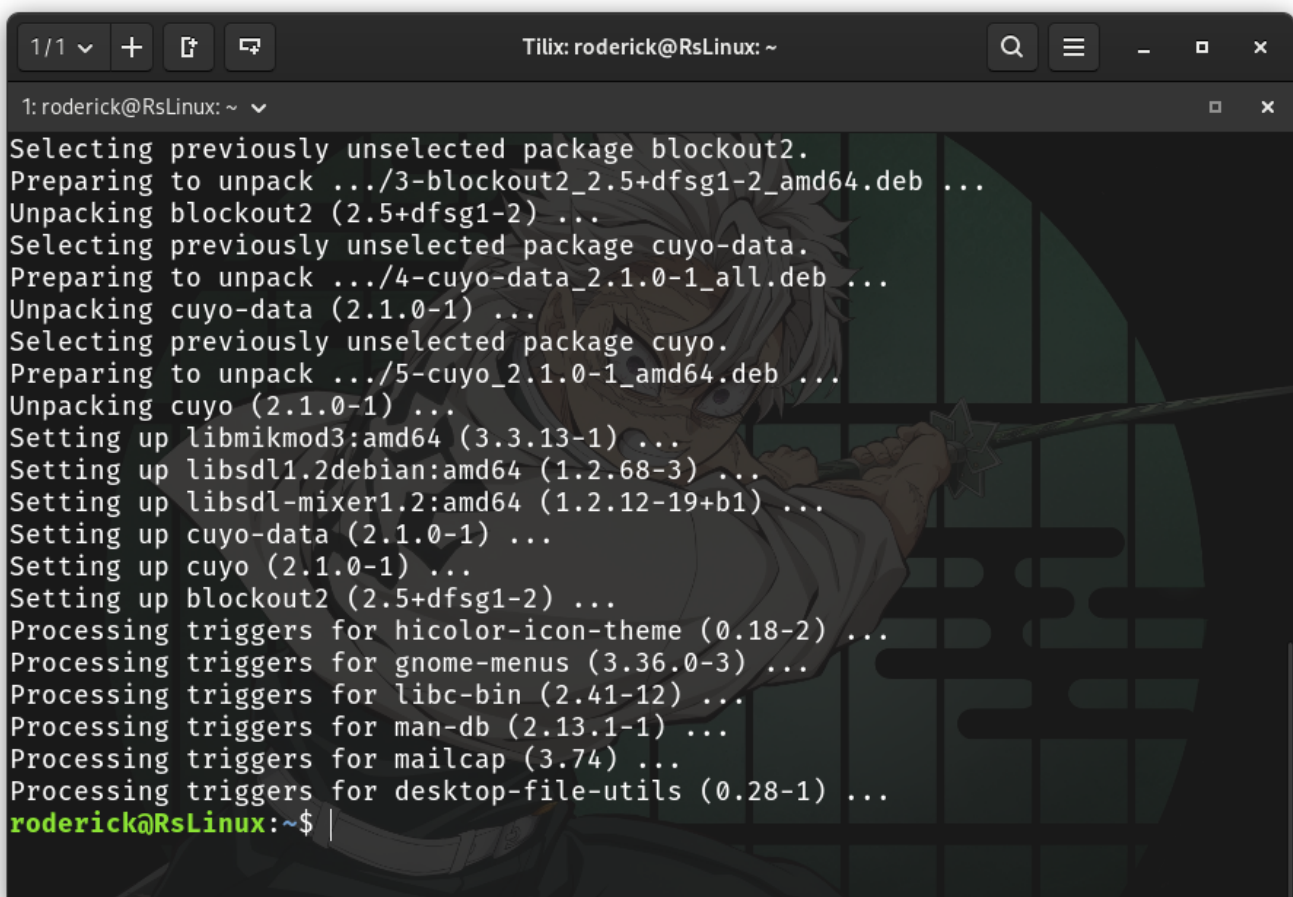
## Question 1 screenshots



```
1/1 ▾ + [?] [?] Tilix: roderick@RsLinux: ~ 🔍 ☰ - □ ×

1: roderick@RsLinux: ~ ▾ □ ×
roderick@RsLinux:~$ 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
roderick@RsLinux:~$ |

2: roderick@RsLinux: ~ ▾ □ ×
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: roderick@RsLinux: ~ ▾ □ ×
roderick@RsLinux:~$ 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
roderick@RsLinux:~$ |
```



```
1/1 ▾ + [?] [?] Tilix: roderick@RsLinux: ~ 🔍 ☰ - □ ×

1: roderick@RsLinux: ~ ▾ □ ×
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 libsdl1.2debian:amd64 (1.2.68-3) ...
Setting up libsdl-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) ...
roderick@RsLinux:~$ |
```

```
1/1 v + [T] [R] Tilix: roderick@RsLinux: ~
1: roderick@RsLinux: ~ v
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) ...
roderick@RsLinux:~$ 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*

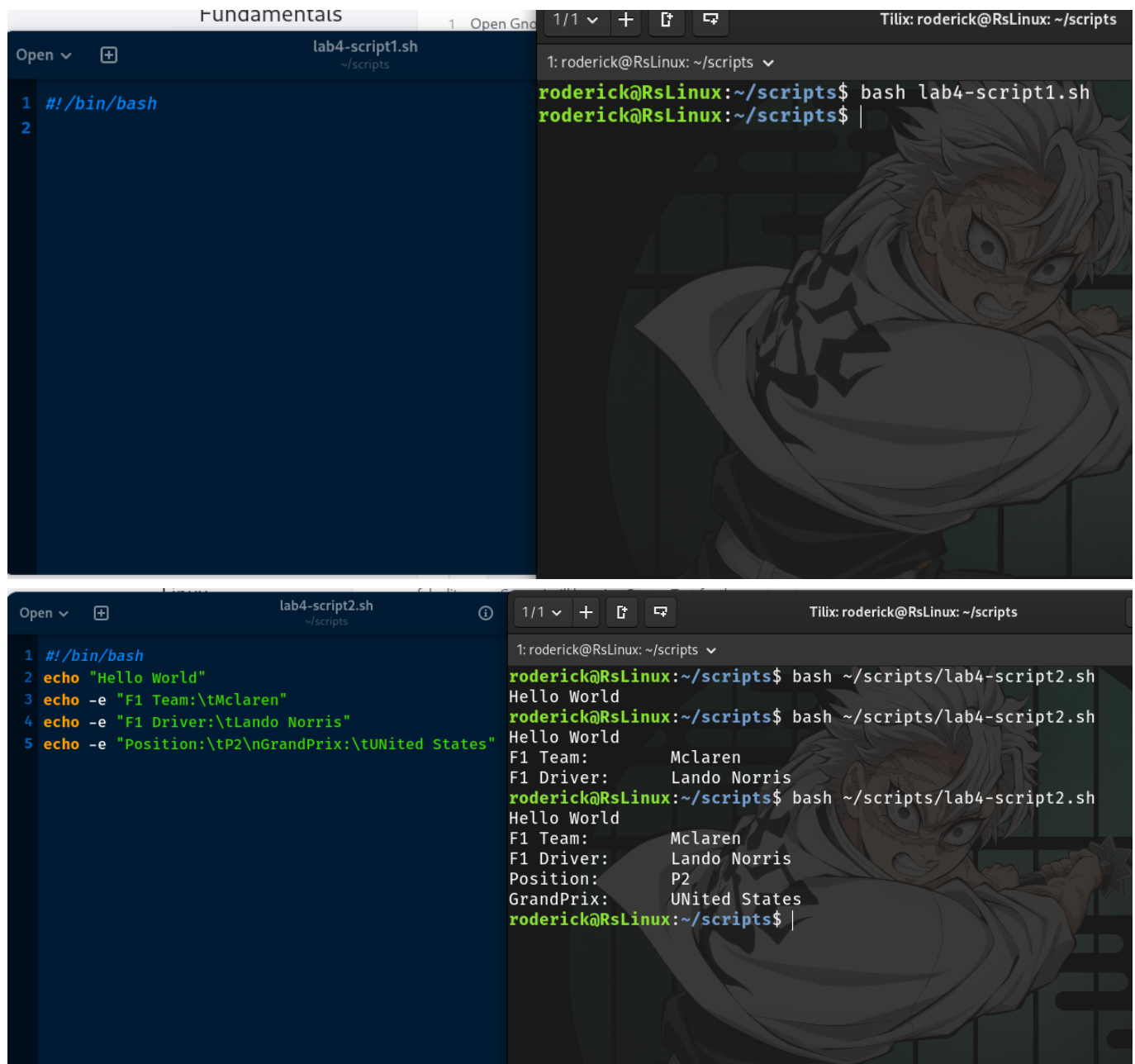
Summary:
  Upgrading: 0, Installing: 0, Removing: 1, Not Upgrading: 14
  Space needed: 0 B / 36.2 GB available

Continue? [Y/n] y
(Reading database ... 197058 files and directories currently installed.)
Purging configuration files for cuyo (2.1.0-1) ...
roderick@RsLinux:~$ |
```

```
1/1 v + [T] [R] Tilix: roderick@RsLinux: ~
1: roderick@RsLinux: ~ v
&& sudo apt autopurge
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: 14
  Freed space: 7,495 kB

Continue? [Y/n] y
(Reading database ... 197058 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: 14
roderick@RsLinux:~$ |
```



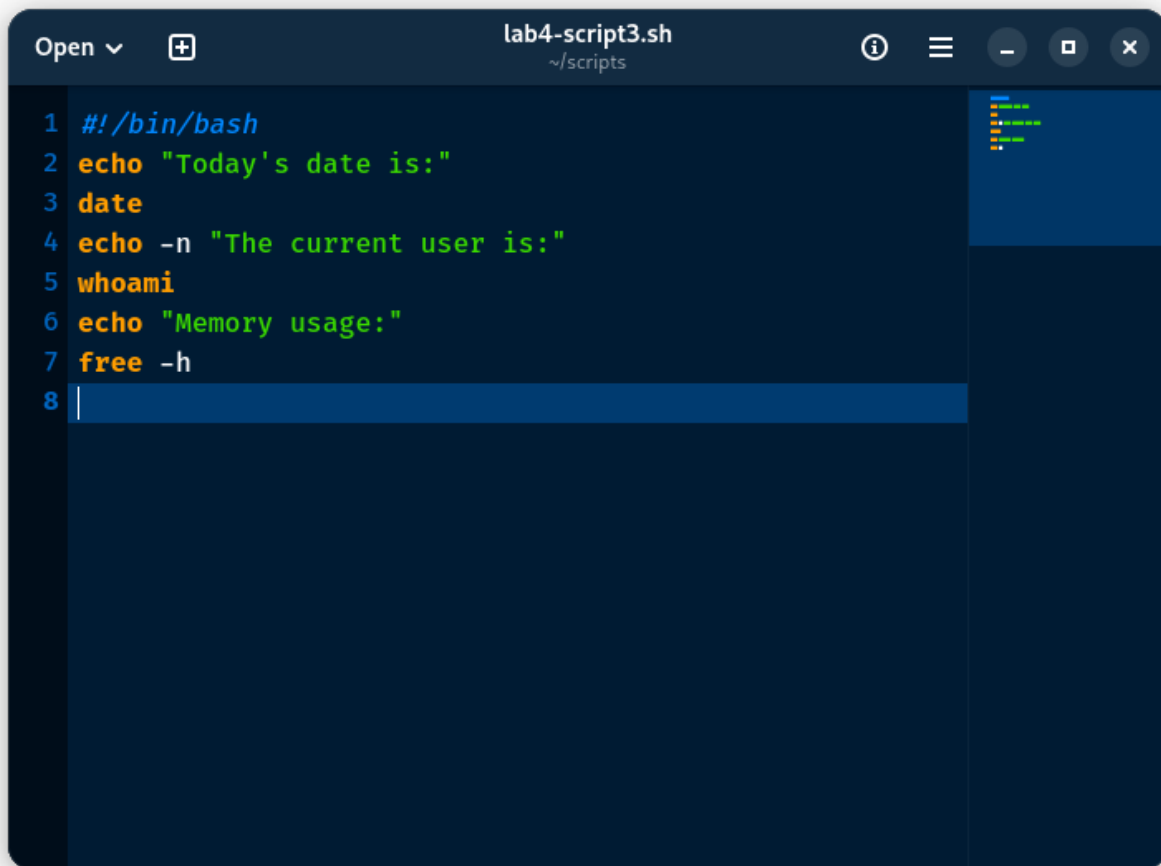
```
Fundamentals
1 Open Gne 1/1 + [ ] [ ] Tilix: roderick@RsLinux: ~/scripts

lab4-script1.sh
~/scripts
1 #!/bin/bash
2

roderick@RsLinux:~/scripts$ bash lab4-script1.sh
roderick@RsLinux:~/scripts$ |

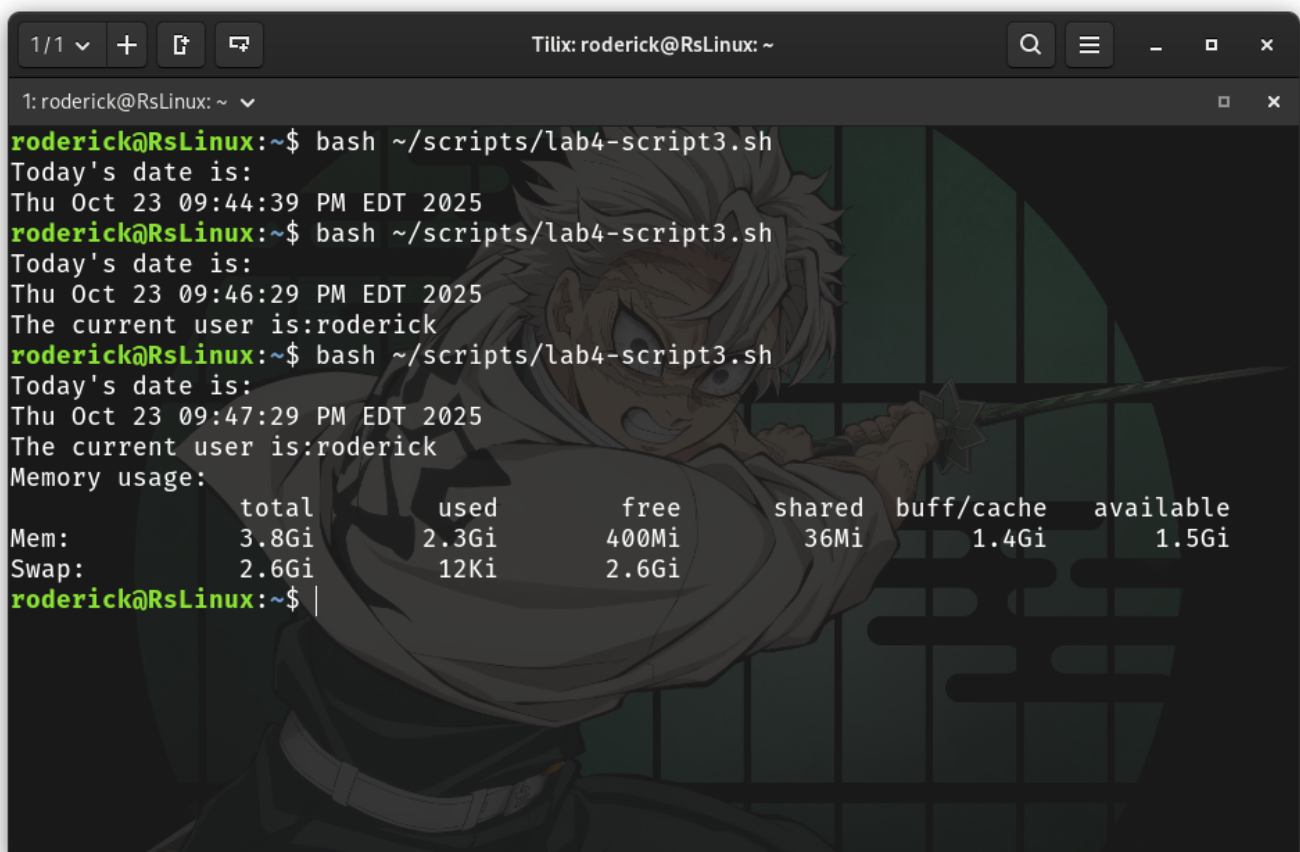
lab4-script2.sh
~/scripts
1 #!/bin/bash
2 echo "Hello World"
3 echo -e "F1 Team:\tMcLaren"
4 echo -e "F1 Driver:\tLando Norris"
5 echo -e "Position:\tP2\nGrandPrix:\tUnited States"

roderick@RsLinux:~/scripts$ bash ~/scripts/lab4-script2.sh
Hello World
roderick@RsLinux:~/scripts$ bash ~/scripts/lab4-script2.sh
Hello World
F1 Team:      McLaren
F1 Driver:    Lando Norris
roderick@RsLinux:~/scripts$ bash ~/scripts/lab4-script2.sh
Hello World
F1 Team:      McLaren
F1 Driver:    Lando Norris
Position:     P2
GrandPrix:    United States
roderick@RsLinux:~/scripts$ |
```



A screenshot of a code editor window titled "lab4-script3.sh" with the file path "~/scripts". The editor shows a shell script with the following content:

```
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
8 |
```




A screenshot of a terminal window titled "Tilix: roderick@RsLinux: ~". The terminal shows the execution of the script `~/scripts/lab4-script3.sh` three times. The output of the script is as follows:


```
roderick@RsLinux:~$ bash ~/scripts/lab4-script3.sh
Today's date is:
Thu Oct 23 09:44:39 PM EDT 2025
roderick@RsLinux:~$ bash ~/scripts/lab4-script3.sh
Today's date is:
Thu Oct 23 09:46:29 PM EDT 2025
The current user is:roderick
roderick@RsLinux:~$ bash ~/scripts/lab4-script3.sh
Today's date is:
Thu Oct 23 09:47:29 PM EDT 2025
The current user is:roderick
Memory usage:
total      used      free      shared  buff/cache  available
Mem:      3.8Gi  2.3Gi    400Mi    36Mi     1.4Gi     1.5Gi
Swap:     2.6Gi   12Ki    2.6Gi
```

## Challenge Question



```
Open ▾  challenge_lab4.sh  
~/cis106/labs/lab4
```

```
1 #!/bin/bash  
2  
3 # Display system information with big words  
4 figlet "System"  
5 echo "DATE UTC: $(date)"  
6 echo "HOSTNAME: $(hostname)"  
7 echo "UPTIME: $(uptime -p)"  
8 echo "USER: $USER"  
9  
10 # Memory Information  
11 figlet "Memory"  
12 free -h | grep -E 'Mem|Swap'  
13  
14 # Disk Information  
15 figlet "Disk"  
16 df -h | grep -E '^Filesystem|/dev/sda'  
17  
18  
19  
20  
21
```



The terminal window shows the output of the script. The first section, titled 'System', displays the current date and time in UTC, the hostname, the system uptime, and the current user. The second section, titled 'Memory', shows the system's memory usage. The third section, titled 'Disk', shows the disk usage for the root filesystem and the /dev/sda partition.

