

LOS Lab Assignment 4

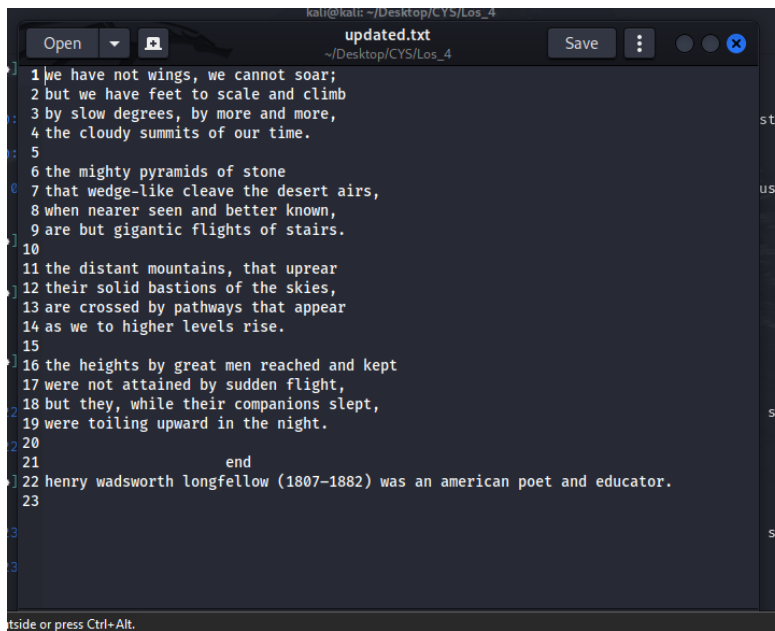
The main idea of this lab exercise to give hands on experience on

grep

constructs

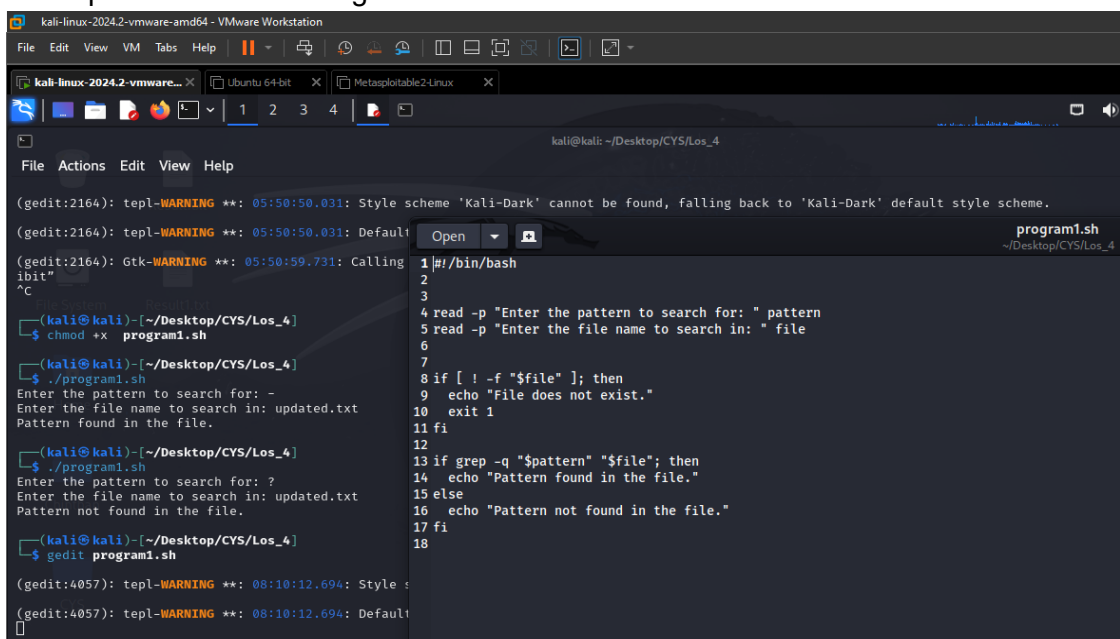
command line arguments

updated.txt



```
1 we have not wings, we cannot soar;
2 but we have feet to scale and climb
3 by slow degrees, by more and more,
4 the cloudy summits of our time.
5
6 the mighty pyramids of stone
7 that wedge-like cleave the desert airs,
8 when nearer seen and better known,
9 are but gigantic flights of stairs.
10
11 the distant mountains, that uprear
12 their solid bastions of the skies,
13 are crossed by pathways that appear
14 as we to higher levels rise.
15
16 the heights by great men reached and kept
17 were not attained by sudden flight,
18 but they, while their companions slept,
19 were toiling upward in the night.
20
21 end
22 henry wadsworth longfellow (1807-1882) was an american poet and educator.
23
```

1. write a shell script to get value the pattern and file name from the user and check the pattern exists or not. If the pattern exists print the relevant message, if pattern not found print relevant message.



```
kali@kali: ~/Desktop/CYS/Los_4
$ cat updated.txt
1 we have not wings, we cannot soar;
2 but we have feet to scale and climb
3 by slow degrees, by more and more,
4 the cloudy summits of our time.
5
6 the mighty pyramids of stone
7 that wedge-like cleave the desert airs,
8 when nearer seen and better known,
9 are but gigantic flights of stairs.
10
11 the distant mountains, that uprear
12 their solid bastions of the skies,
13 are crossed by pathways that appear
14 as we to higher levels rise.
15
16 the heights by great men reached and kept
17 were not attained by sudden flight,
18 but they, while their companions slept,
19 were toiling upward in the night.
20
21 end
22 henry wadsworth longfellow (1807-1882) was an american poet and educator.
23

(kali@kali) [~/Desktop/CYS/Los_4]
$ chmod +x program1.sh
(kali@kali) [~/Desktop/CYS/Los_4]
$ ./program1.sh
Enter the pattern to search for: -
Enter the file name to search in: updated.txt
Pattern found in the file.

(kali@kali) [~/Desktop/CYS/Los_4]
$ ./program1.sh
Enter the pattern to search for: ?
Enter the file name to search in: updated.txt
Pattern not found in the file.

(kali@kali) [~/Desktop/CYS/Los_4]
$ gedit program1.sh

(kali@kali) [~/Desktop/CYS/Los_4]
$ cat program1.sh
1 #!/bin/bash
2
3
4 read -p "Enter the pattern to search for: " pattern
5 read -p "Enter the file name to search in: " file
6
7
8 if [ ! -f "$file" ]; then
9     echo "File does not exist."
10    exit 1
11 fi
12
13 if grep -q "$pattern" "$file"; then
14     echo "Pattern found in the file."
15 else
16     echo "Pattern not found in the file."
17 fi
18
```

2. Modify the above script to pass the arguments from command line arguments.

The screenshot shows a terminal window on the left and a script editor on the right. The terminal shows the execution of a script named `command_line.sh` with various arguments, including a pattern and a file name. The script editor shows the code for `command_line.sh`, which has been modified to accept two arguments: a pattern and a file name. The script uses `if` statements to check if the arguments are provided and if the file exists, and then uses `grep` to search for the pattern in the file.

```
(kali@kali)~/Desktop/CYS/Los_4
$ ./command_line.sh
Usage: ./command_line.sh <pattern> <file>

(kali@kali)~/Desktop/CYS/Los_4
$ ./command_line.sh - updated.txt no_file.txt
Usage: ./command_line.sh <pattern> <file>

(kali@kali)~/Desktop/CYS/Los_4
$ ./command_line.sh - updated.txt
Pattern found in the file.

(kali@kali)~/Desktop/CYS/Los_4
$ ./command_line.sh = updated.txt
Pattern not found in the file.

(kali@kali)~/Desktop/CYS/Los_4
$ gedit command_line.sh

(gedit:7614): tepl-WARNING **: 08:17:14.390: Style scheme 'Kali-Dark' cannot be found, falling back to 'Kali-Light'
(gedit:7614): tepl-WARNING **: 08:17:14.390: Default theme 'Kali-Light' cannot be found, falling back to 'Kali-Light'

(kali@kali)~/Desktop/CYS/Los_4
$ gedit command_line.sh

(gedit:8226): tepl-WARNING **: 08:18:29.442: Style scheme 'Kali-Dark' cannot be found, falling back to 'Kali-Light'
(gedit:8226): tepl-WARNING **: 08:18:29.442: Default theme 'Kali-Light' cannot be found, falling back to 'Kali-Light'

1 #!/bin/bash
2
3 if [ "$#" -ne 2 ]; then
4     echo "Usage: $0 <pattern> <file>"
5     exit 1
6 fi
7
8
9 pattern=$1
10 file=$2
11
12
13 if [ ! -f "$file" ]; then
14     echo "File does not exist."
15     exit 1
16 fi
17
18
19 if grep -q "$pattern" "$file"; then
20     echo "Pattern found in the file."
21 else
22     echo "Pattern not found in the file."
23 fi
24
```

3. Modify the above script to pass the values inside the script.

The screenshot shows a terminal window on the left and a script editor on the right. The terminal shows the execution of a script named `inside_script.sh` with various arguments, including a pattern and a file name. The script editor shows the code for `inside_script.sh`, which has been modified to accept two arguments: a pattern and a file name. The script uses `if` statements to check if the arguments are provided and if the file exists, and then uses `grep` to search for the pattern in the file.

```
(gedit:8226): tepl-WARNING **: 08:18:29.442: Style scheme 'Kali-Dark' cannot be found, falling back to 'Kali-Light'
(gedit:8226): tepl-WARNING **: 08:18:29.442: Default theme 'Kali-Light' cannot be found, falling back to 'Kali-Light'

(kali@kali)~/Desktop/CYS/Los_4
$ gedit inside_script.sh

(gedit:9371): tepl-WARNING **: 08:20:49.123: Style scheme 'Kali-Dark' cannot be found, falling back to 'Kali-Light'
(gedit:9371): tepl-WARNING **: 08:20:49.123: Default theme 'Kali-Light' cannot be found, falling back to 'Kali-Light'

(kali@kali)~/Desktop/CYS/Los_4
$ chmod +x inside_script.sh

(kali@kali)~/Desktop/CYS/Los_4
$ ./inside_script.sh
Pattern found in the file.

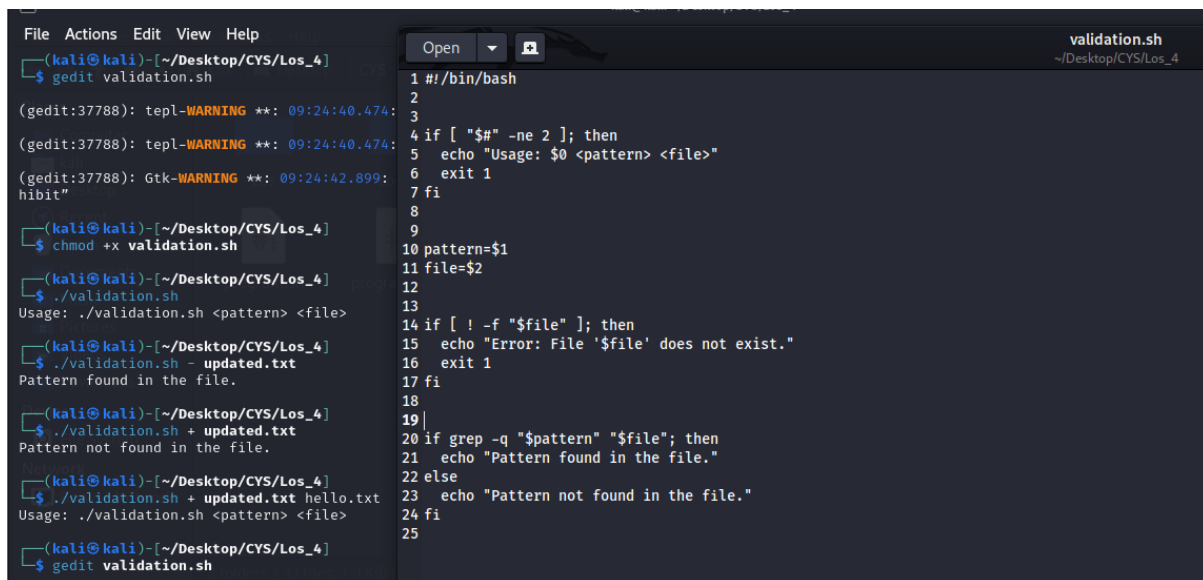
(kali@kali)~/Desktop/CYS/Los_4
$ gedit inside_script.sh

(gedit:10232): tepl-WARNING **: 08:22:21.123: Style scheme 'Kali-Dark' cannot be found, falling back to 'Kali-Light'
(gedit:10232): tepl-WARNING **: 08:22:21.123: Default theme 'Kali-Light' cannot be found, falling back to 'Kali-Light'

1 #!/bin/bash
2
3
4 pattern="-"
5 file="updated.txt"
6
7
8 if [ ! -f "$file" ]; then
9     echo "File does not exist."
10    exit 1
11 fi
12
13
14 if grep -q "$pattern" "$file"; then
15     echo "Pattern found in the file."
16 else
17     echo "Pattern not found in the file."
18 fi
19
```

4. validate the script (script 1, script 2)

- the file exists or not
- arguments passed or not



```
File Actions Edit View Help
(kali@kali)-[~/Desktop/CYS/Los_4]
$ gedit validation.sh

(gedit:37788): tepl-WARNING **: 09:24:40.474:
(gedit:37788): tepl-WARNING **: 09:24:40.474:
(gedit:37788): Gtk-WARNING **: 09:24:42.899:
hibit"

(kali@kali)-[~/Desktop/CYS/Los_4]
$ chmod +x validation.sh

(kali@kali)-[~/Desktop/CYS/Los_4]
$ ./validation.sh
Usage: ./validation.sh <pattern> <file>

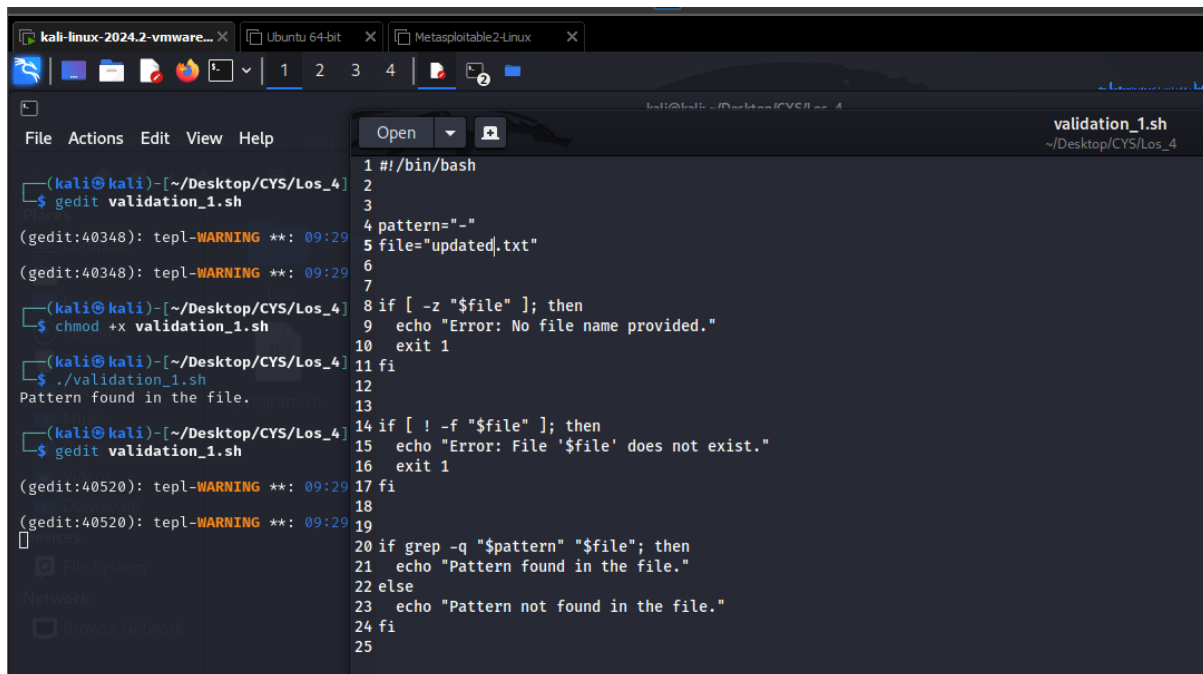
(kali@kali)-[~/Desktop/CYS/Los_4]
$ ./validation.sh - updated.txt
Pattern found in the file.

(kali@kali)-[~/Desktop/CYS/Los_4]
$ ./validation.sh + updated.txt
Pattern not found in the file.

(kali@kali)-[~/Desktop/CYS/Los_4]
$ ./validation.sh + updated.txt hello.txt
Usage: ./validation.sh <pattern> <file>

(kali@kali)-[~/Desktop/CYS/Los_4]
$ gedit validation.sh

1 #!/bin/bash
2
3
4 if [ "$#" -ne 2 ]; then
5     echo "Usage: $0 <pattern> <file>"
6     exit 1
7 fi
8
9
10 pattern=$1
11 file=$2
12
13
14 if [ ! -f "$file" ]; then
15     echo "Error: File '$file' does not exist."
16     exit 1
17 fi
18
19
20 if grep -q "$pattern" "$file"; then
21     echo "Pattern found in the file."
22 else
23     echo "Pattern not found in the file."
24 fi
25
```



```
kali-linux-2024.2-vmware... X Ubuntu 64-bit X Metasploitable2-Linux X
1 2 3 4
File Actions Edit View Help
(kali@kali)-[~/Desktop/CYS/Los_4]
$ gedit validation_1.sh

(gedit:40348): tepl-WARNING **: 09:29
(gedit:40348): tepl-WARNING **: 09:29

(kali@kali)-[~/Desktop/CYS/Los_4]
$ chmod +x validation_1.sh

(kali@kali)-[~/Desktop/CYS/Los_4]
$ ./validation_1.sh
Pattern found in the file.

(kali@kali)-[~/Desktop/CYS/Los_4]
$ gedit validation_1.sh

(gedit:40520): tepl-WARNING **: 09:29
(gedit:40520): tepl-WARNING **: 09:29

1 #!/bin/bash
2
3
4 pattern="-"
5 file="updated.txt"
6
7
8 if [ -z "$file" ]; then
9     echo "Error: No file name provided."
10    exit 1
11 fi
12
13
14 if [ ! -f "$file" ]; then
15     echo "Error: File '$file' does not exist."
16     exit 1
17 fi
18
19
20 if grep -q "$pattern" "$file"; then
21     echo "Pattern found in the file."
22 else
23     echo "Pattern not found in the file."
24 fi
25
```

5. Apply grep commands

Note: Make sure to use the options -e -c -n -q -s -f -A -B -C -i -h, -l -o -w

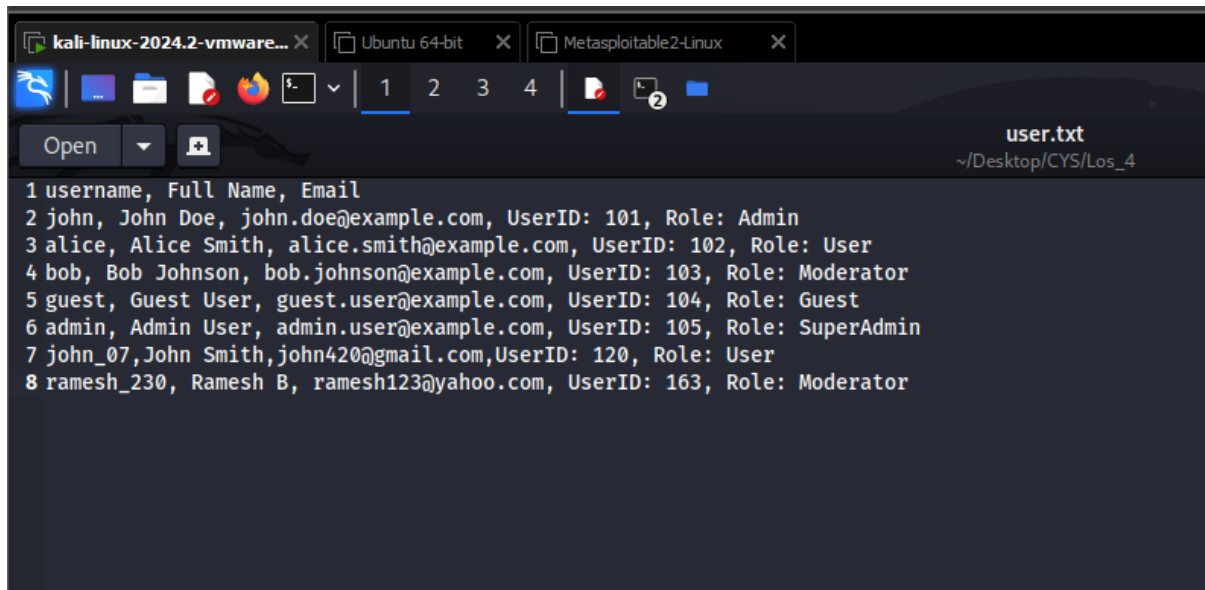
Frame the questions (as per your choice)

to extract user information

to extract network information

to extract login details

user.txt



```
1 username, Full Name, Email
2 john, John Doe, john.doe@example.com, UserID: 101, Role: Admin
3 alice, Alice Smith, alice.smith@example.com, UserID: 102, Role: User
4 bob, Bob Johnson, bob.johnson@example.com, UserID: 103, Role: Moderator
5 guest, Guest User, guest.user@example.com, UserID: 104, Role: Guest
6 admin, Admin User, admin.user@example.com, UserID: 105, Role: SuperAdmin
7 john_07, John Smith, john420@gmail.com, UserID: 120, Role: User
8 ramesh_230, Ramesh B, ramesh123@yahoo.com, UserID: 163, Role: Moderator
```

- **-e**: Specifies patterns for matching.

Question: How can you search for lines in users.txt that contain either the role "Admin" or "Guest"?



```
(kali㉿kali)-[~/Desktop/CYS/Los_4]
$ grep -e "Admin" -e "Guest" user.txt
john, John Doe, john.doe@example.com, UserID: 101, Role: Admin
guest, Guest User, guest.user@example.com, UserID: 104, Role: Guest
admin, Admin User, admin.user@example.com, UserID: 105, Role: SuperAdmin
```

- **-c**: Counts matching lines.

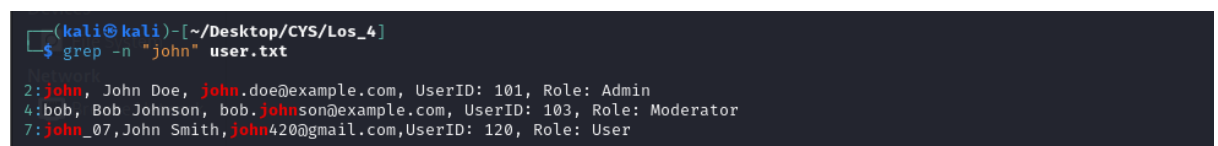
Question: Count the number of lines containing the pattern "admin" in the file user.txt.



```
(kali㉿kali)-[~/Desktop/CYS/Los_4]
$ grep -c "admin" user.txt
1
```

- **-n**: Shows line numbers.

Question: Display lines containing the username "john" and the line numbers in the file user.txt.



```
(kali㉿kali)-[~/Desktop/CYS/Los_4]
$ grep -n "john" user.txt
2:john, John Doe, john.doe@example.com, UserID: 101, Role: Admin
4:bob, Bob Johnson, bob.johnson@example.com, UserID: 103, Role: Moderator
7:john_07, John Smith, john420@gmail.com, UserID: 120, Role: User
```

- **-q**: Runs quietly.

Question: Quietly check if the username "alice" exists in user.txt without printing any output.

```
(kali@kali)-[~/Desktop/CYS/Los_4]
$ grep -q "alice" user.txt

(kali@kali)-[~/Desktop/CYS/Los_4]
$
```

- **-s:** Suppresses errors.

Question: How can you search for a pattern and suppress any error messages if the file does not exist?

```
(kali@kali)-[~/Desktop/CYS/Los_4]
$ grep -s "Role: User" non_existing_file.txt

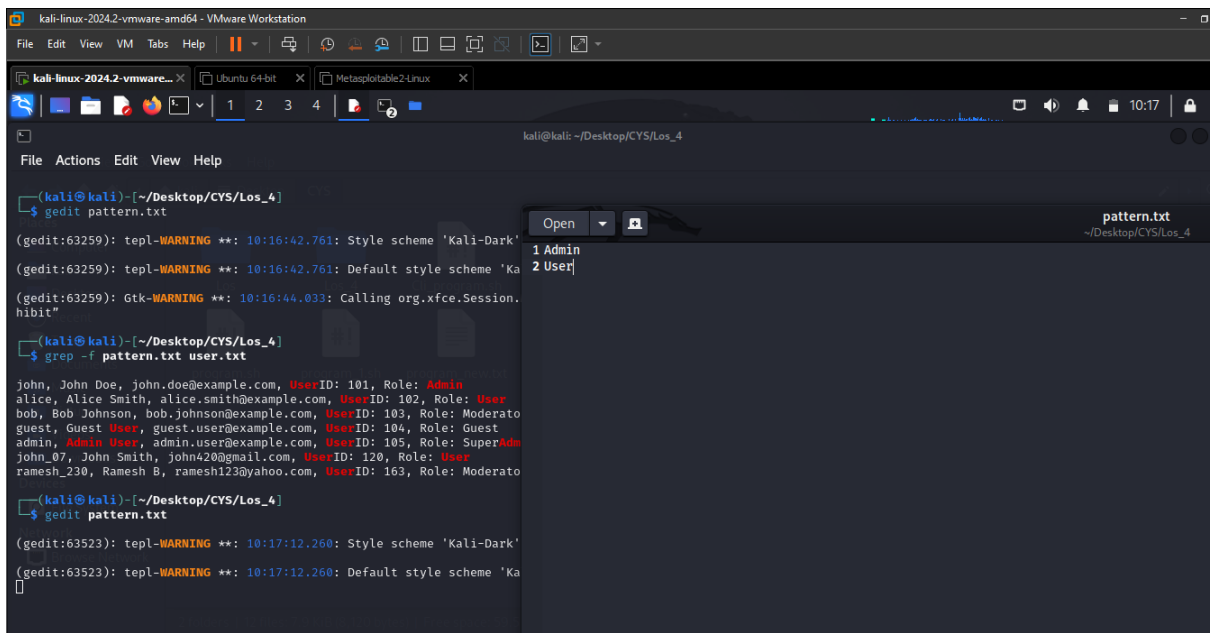
(kali@kali)-[~/Desktop/CYS/Los_4]
$ grep -s "Role: User" user.txt

alice, Alice Smith, alice.smith@example.com, UserID: 102, Role: User
john_07, John Smith, john420@gmail.com, UserID: 120, Role: User

(kali@kali)-[~/Desktop/CYS/Los_4]
$
```

- **-f:** Reads patterns from a file.

Question: How can you use a file (pattern.txt) containing patterns to search for matches in user.txt?



```
kali@kali: ~/Desktop/CYS/Los_4

(kali@kali)-[~/Desktop/CYS/Los_4]
$ gedit pattern.txt

(gedit:63259): tepl-WARNING **: 10:16:42.761: Style scheme 'Kali-Dark'
(gedit:63259): tepl-WARNING **: 10:16:42.761: Default style scheme 'Ka
(gedit:63259): Gtk-WARNING **: 10:16:44.033: Calling org.xfce.Session.
hibit"

(kali@kali)-[~/Desktop/CYS/Los_4]
$ grep -f pattern.txt user.txt

john, John Doe, john.doe@example.com, UserID: 101, Role: Admin
alice, Alice Smith, alice.smith@example.com, UserID: 102, Role: User
bob, Bob Johnson, bob.johnson@example.com, UserID: 103, Role: Moderato
guest, Guest User, guest.user@example.com, UserID: 104, Role: Guest
admin, Admin User, admin.user@example.com, UserID: 105, Role: SuperAdmin
john_07, John Smith, john420@gmail.com, UserID: 120, Role: User
ramesh_230, Ramesh B, ramesh123@yahoo.com, UserID: 163, Role: Moderato

(kali@kali)-[~/Desktop/CYS/Los_4]
$ gedit pattern.txt

(gedit:63523): tepl-WARNING **: 10:17:12.260: Style scheme 'Kali-Dark'
(gedit:63523): tepl-WARNING **: 10:17:12.260: Default style scheme 'Ka

```

- **-A, -B, -C:** Shows lines of context around matches.

-A 1: Displays 1 line after each match.

Question: How can you display lines of context (e.g., 1 lines) after a match for the pattern "Role: User"?

-B 1: Displays 1 line before each match.

Question: How can you display lines of context (e.g., 1 lines) before a match for the pattern "Role: User"?

-C 1: Displays 1 line before and after each match.

Question: How can you display lines of context (e.g., 1 lines) before and after a match for the pattern "Role: User"?

```
(kali@kali)~/Desktop/CYS/Los_4
$ grep -A 1 "Role: User" user.txt

alice, Alice Smith, alice.smith@example.com, UserID: 102, Role: User
bob, Bob Johnson, bob.johnson@example.com, UserID: 103, Role: Moderator
--
john_07, John Smith, john420@gmail.com, UserID: 120, Role: User
ramesh_230, Ramesh B, ramesh123@yahoo.com, UserID: 163, Role: Moderator

(kali@kali)~/Desktop/CYS/Los_4
$ grep -B 1 "Role: User" user.txt

john, John Doe, john.doe@example.com, UserID: 101, Role: Admin
alice, Alice Smith, alice.smith@example.com, UserID: 102, Role: User
--
admin, Admin User, admin.user@example.com, UserID: 105, Role: SuperAdmin
john_07, John Smith, john420@gmail.com, UserID: 120, Role: User
```

```
(kali@kali)~/Desktop/CYS/Los_4
$ grep -C 1 "Role: User" user.txt

john, John Doe, john.doe@example.com, UserID: 101, Role: Admin
alice, Alice Smith, alice.smith@example.com, UserID: 102, Role: User
bob, Bob Johnson, bob.johnson@example.com, UserID: 103, Role: Moderator
--
admin, Admin User, admin.user@example.com, UserID: 105, Role: SuperAdmin
john_07, John Smith, john420@gmail.com, UserID: 120, Role: User
ramesh_230, Ramesh B, ramesh123@yahoo.com, UserID: 163, Role: Moderator

(kali@kali)~/Desktop/CYS/Los_4
$
```

- **-i:** Ignores case.

Question: Find all lines containing the username "john" in the file user.txt, ignoring case sensitivity.

```
(kali@kali)~/Desktop/CYS/Los_4
$ grep -i "john" user.txt

john, John Doe, john.doe@example.com, UserID: 101, Role: Admin
bob, Bob Johnson, bob.johnson@example.com, UserID: 103, Role: Moderator
john_07, John Smith, john420@gmail.com, UserID: 120, Role: User
```

- **-h:** Hides filenames in multi-file searches.

Question: How to search for the term "Admin" in multiple files without displaying the filenames in the output?

```
(kali@kali)-[~/Desktop/CYS/Los_4]
$ gedit user.txt
(gedit:53223): tepl-WARNING **: 09:56:05.970: Style scheme 'Kali-Dark' cannot be found, falling back
(gedit:53223): tepl-WARNING **: 09:56:05.970: Default style scheme 'Kali-Dark' cannot be found, check
(kali@kali)-[~/Desktop/CYS/Los_4]
$ gedit user_1.txt
(gedit:53340): tepl-WARNING **: 09:56:19.000: Style scheme 'Kali-Dark' cannot be found, falling back
(gedit:53340): tepl-WARNING **: 09:56:19.000: Default style scheme 'Kali-Dark' cannot be found, check
(gedit:53340): Gtk-WARNING **: 09:56:20.553: Calling org.xfce.Session.Manager.Inhibit failed: GDBus.E
hibit"
(kali@kali)-[~/Desktop/CYS/Los_4]
$ grep -h "Admin" user.txt user_1.txt
john, John Doe, john.doe@example.com, UserID: 101, Role: Admin
admin, Admin User, admin.user@example.com, UserID: 105, Role: SuperAdmin
john, John Doe, john.doe@example.com, UserID: 101, Role: Admin
admin, Admin User, admin.user@example.com, UserID: 105, Role: SuperAdmin
(kali@kali)-[~/Desktop/CYS/Los_4]
$
```

- -l: Shows filenames only of matched pattern.

Question: How to list the filenames that contain the pattern "Admin" in a directory?

```
(kali@kali)-[~/Desktop/CYS/Los_4]
$ grep -l "Admin" user.txt user_1.txt
user.txt
user_1.txt
```

- -o: Displays only matched parts.

Question: How to extract only the "user_id" from user.txt?

```
(kali@kali)-[~/Desktop/CYS/Los_4]
$ grep -o "UserID: [0-9]*" user.txt
UserID: 101
UserID: 102
UserID: 103
UserID: 104
UserID: 105
UserID: 120
UserID: 163
(kali@kali)-[~/Desktop/CYS/Los_4]
$
```

- -w: Matches whole words.

Question: Display lines containing exact word matches for "guest" in user.txt.

```
(kali@kali)-[~/Desktop/CYS/Los_4]
$ grep -q "alice" user.txt
(kali@kali)-[~/Desktop/CYS/Los_4]
$
```