

Lab3:

The main idea of this assignment is to provide hands on experience on the following topics

Grep

Pipe

redirection

read

command Line arguments

head,tail,tr

1. Create a file “poem.txt” with the following lines

We have not wings, we cannot soar;
But we have feet to scale and climb
By slow degrees, by more and more,
The cloudy summits of our time.

The mighty pyramids of stone
That wedge-like cleave the desert airs,
When nearer seen and better known,
Are but gigantic flights of stairs.

The distant mountains, that uprear
Their solid bastions of the skies,
Are crossed by pathways that appear
As we to higher levels rise.

The heights by great men reached and kept
Were not attained by sudden flight,
But they, while their companions slept,
Were toiling upward in the night.

END

Henry Wadsworth Longfellow (1807–1882) was an American poet and educator.

```
(kali@kali)-[~]  
$ gedit poem.txt
```

Do the following task using grep command

- a. Print all the lines with the pattern "they"

```
(kali@kali)-[~]
└─$ grep 'they' poem.txt
But they, while their companions slept,
```

- b. Print all the lines other than pattern "They"

```
(kali@kali)-[~]
└─$ grep -v 'They' poem.txt
We have not wings, we cannot soar;
But we have feet to scale and climb
By slow degrees, by more and more,
The cloudy summits of our time.
The mighty pyramids of stone
That wedge-like cleave the desert airs,
When nearer seen and better known,
Are but gigantic flights of stairs.
The distant mountains, that uprear
Their solid bastions of the skies,
Are crossed by pathways that appear
As we to higher levels rise.
The heights by great men reached and kept
Were not attained by sudden flight,
But they, while their companions slept,
Were toiling upward in the night.
END
Henry Wadsworth Longfellow (1807-1882) was an American poet and educator.
```

- c. Print all the lines starts with "w"

```
(kali@kali)-[~]
└─$ grep '^w' poem.txt
```

- d. Print the next lines after the pattern "stone" matches

Hint: man grep

```
(kali@kali)-[~]
└─$ grep -A 1 'stone' poem.txt | tail -n +2
That wedge-like cleave the desert airs,
```

- e. Print the 2 lines above the pattern "stone" matches

Hint: man grep

```
(kali@kali)-[~]
└─$ grep -B 2 'stone' poem.txt | head -n +2
By slow degrees, by more and more,
The cloudy summits of our time.
```

f. Search the pattern with exact match

```
(kali@kali)-[~]  
$ grep -o 'and' poem.txt  
and  
and  
and  
and  
and
```

2. Explore variations of grep command

a. *Ngrep* : Searches network packets using regular expressions.

b. *Pgrep* : Finds process IDs based on process names.

```
(kali@kali)-[~]  
$ pgrep bash  
  
(kali@kali)-[~]  
$ pgrep -l ssh  
1227 ssh-agent  
  
(kali@kali)-[~]  
$ pgrep -c ssh  
1  
  
(kali@kali)-[~]  
$ pgrep -o  
1
```

c. *Zgrep* : Searches within compressed files.

d. *Egrep* : Uses extended regular expressions for more complex searches.

```
(kali@kali)-[~]  
$ egrep -r 'hello'  
python1.py:print('hello')  
.zsh_history:vi hello.sh  
.zsh_history:alias greet = 'echo hello world'  
.zsh_history:alias greet = 'echo hello ,bhavana'  
.zsh_history:alias greet = 'echo hello ,bhavana'  
.zsh_history:alias greet = 'echo hello ,bhavana'  
.zsh_history:alias greet = 'echo hello ,bhavana'  
.zsh_history:alias greet = 'echo hello ,bhavana'  
.zsh_history:alias greet = 'echo hello ,bhavana!'  
grep: .BurpSuite/burpbrowser/124.0.6367.118/chrome: binary file matches  
anusha: # print(hello)  
anusha:print("hello good morning")  
anusha:greet = "hello how are you"  
grep: bhavana/.1.py.swp: binary file matches  
bhavana/bhavana: # print(hello)  
bhavana/bhavana:print("hello good morning")  
bhavana/bhavana:greet = "hello how are you"  
assignment2.py:c="hello"  
bhavana.txt:hello,  
.viminfo:? \<hello\>  
.viminfo:[2,1,1722791287,,,"\\<hello\\>"  
.viminfo:> ~/hello.sh  
python2.py:c='hello'  
grep: .cache/mozilla/firefox/yx20ve8t.default-esr/startupCache/scriptCache.bin: binary file matches  
grep: .cache/mozilla/firefox/yx20ve8t.default-esr/startupCache/startupCache.8.little: binary file matches  
s  
grep: .cache/gstreamer-1.0/registry.x86_64.bin: binary file matches
```

```
(kali@kali)-[~]
$ egrep -v 'We' poem.txt
But we have feet to scale and climb
By slow degrees, by more and more,
The cloudy summits of our time.
The mighty pyramids of stone
That wedge-like cleave the desert airs,
When nearer seen and better known,
Are but gigantic flights of stairs.
The distant mountains, that uprear
Their solid bastions of the skies,
Are crossed by pathways that appear
As we to higher levels rise.
The heights by great men reached and kept
But they, while their companions slept,
END
Henry Wadsworth Longfellow (1807-1882) was an American poet and educator.
```

```
(kali@kali)-[~]
$ egrep -i 'They' poem.txt
But they, while their companions slept,
```

3. Write a shell script to get the pattern and filenames from the user and check whether the pattern is present or not.

```
#!/usr/bin/bash
read -p "Enter the pattern to search: " pattern
read -p "Enter the filename to search in: " filename

if [ -f "$filename" ]; then
    grep "$pattern" "$filename"
else
    echo "File does not exist."
fi
```

```
(kali@kali)-[~]
$ ./script_patt.sh
Enter the pattern to search: they
Enter the filename to search in: poem.txt
But they, while their companions slept,
```

4. Rewrite the above shell script using command line arguments. (pass the pattern and file through command line arguments)

```
1 #!/usr/bin/bash
2
3 pattern=$1
4 filename=$2
5
6 if [ -f "$filename" ]; then
7     grep "$pattern" "$filename"
8 else
9     echo "File does not exist."
10 fi
```

```
kali@kali: ~  
File Actions Edit View Help  
(kali@kali)-[~]  
$ gedit script_patt.sh  
(gedit:25130): tepl-WARNING **: 09:42:36.938: Style scheme 'Kali-Dark' default style scheme.  
(gedit:25130): tepl-WARNING **: 09:42:36.938: Default style scheme installation.  
(kali@kali)-[~]  
$ ./script_patt.sh 'they' 'poem.txt'  
But they, while their companions slept,
```

5. Write a shell script to count total number of regular files in the current working directory.

```
1 #!/usr/bin/bash  
2 count=$(find . -maxdepth 1 -type f | wc -l)  
3  
4 echo "Number of regular files in current directory: $count"  
5
```

```
kali@kali: ~  
File Actions Edit View Help  
(kali@kali)-[~]  
$ gedit count.sh  
(gedit:11338): tepl-WARNING **: 09:14:56.799: Style scheme 'Kali-Dark' default style scheme.  
(gedit:11338): tepl-WARNING **: 09:14:56.799: Default style scheme installation.  
(gedit:11338): Gtk-WARNING **: 09:15:38.118: Calling org.xfce.SessionManager:org.freedesktop.DBus.Error.UnknownMethod: No such method "Inhibit"  
(kali@kali)-[~]  
$ chmod +x count.sh  
(kali@kali)-[~]  
$ ./count.sh  
Number of regular files in current directory: 37
```

6. pipe
a) Pick the line from 3 to 5.

```
(kali@kali)-[~]  
$ sed -n '3,5p' poem.txt  
By slow degrees, by more and more,  
The cloudy summits of our time.  
The mighty pyramids of stone
```

- b) List the top 5 largest files in a directory and display their sizes

```
(kali@kali)-[~]  
$ ls -ls |head -n 6  
total 128  
4 -rw-rw-r-- 1 kali kali 78 Aug 6 10:09 10.bash  
4 -rw-rw-r-- 1 kali kali 52 Aug 13 09:05 anu1.txt  
4 -rwx--x--x 1 kali kali 214 Aug 11 12:18 anusha  
4 drwxrwxr-x 2 kali kali 4096 Aug 21 13:49 anushapatil  
4 -rw-rw-r-- 1 kali kali 94 Aug 5 14:54 anusha.sh
```

c) Print the last 2 modified file details

```
(kali@kali)-[~]
$ ls -lt | head -n 3
total 128
-rw-rw-r-- 1 kali kali 1565 Aug 21 14:30 content.txt
-rwxrwxr-x 1 kali kali 289 Aug 21 14:22 script_patt.sh
```

7. Redirection

a) Convert uppercase into lowercase characters

```
(kali@kali)-[~]
$ tr 'A-Z' 'a-z' < poem.txt > outputFile.txt
```

```
(kali@kali)-[~]
$ cat outputFile.txt
we have not wings, we cannot soar;
but we have feet to scale and climb
by slow degrees, by more and more,
the cloudy summits of our time.
the mighty pyramids of stone
that wedge-like cleave the desert airs,
when nearer seen and better known,
are but gigantic flights of stairs.
the distant mountains, that uprear
their solid bastions of the skies,
are crossed by pathways that appear
as we to higher levels rise.
the heights by great men reached and kept
were not attained by sudden flight,
but they, while their companions slept,
were toiling upward in the night.
end
henry wadsworth longfellow (1807-1882) was an american poet and educator.
```

b) List the contents of your current directory, including the ownership and permissions, and redirect the output to a file called contents.txt within your home directory.

```
(kali@kali)-[~]
$ ls -l
total 132
-rw-rw-r-- 1 kali kali 78 Aug 6 10:09 10.bash
-rw-rw-r-- 1 kali kali 52 Aug 13 09:05 anu1.txt
-rwx--x--x 1 kali kali 214 Aug 11 12:18 anusha
drwxrwxr-x 2 kali kali 4096 Aug 21 13:49 anushapatil
-rw-rw-r-- 1 kali kali 94 Aug 5 14:54 anusha.sh
-rw-rw-r-- 1 kali kali 855 Aug 14 09:46 assingment2.py
drwxrwxr-x 2 kali kali 4096 Aug 11 12:21 bhavana
-rw-rw-r-- 1 kali kali 53 Aug 13 09:02 bhavana.py
-rw-rw-r-- 1 kali kali 50 Aug 13 09:39 bhavana.txt
-rw-rw-r-- 1 kali kali 1565 Aug 21 14:30 content.txt
drwxrwxr-x 3 kali kali 4096 Aug 11 06:51 cvs
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Desktop
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Documents
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Downloads
-rw-rw-r-- 1 kali kali 0 Aug 5 21:23 file
-rw-rw-r-- 1 kali kali 1 Aug 5 16:06 file1.json
-rw-rw-r-- 1 kali kali 49 Aug 5 14:57 file1.sh
-rw-rw-r-- 1 kali kali 19 Aug 20 09:02 file1.txt
-rw-rw-r-- 1 kali kali 26 Aug 5 09:46 hello.sh
drwxrwxr-x 5 kali kali 4096 Aug 11 03:18 LS
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Music
-rw-rw-r-- 1 kali kali 666 Aug 21 14:44 outputFile.txt
drwxr-xr-x 2 kali kali 4096 Aug 21 13:21 Pictures
-rwxrwxr-x 1 kali kali 666 Aug 21 14:10 poem.txt
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Public
-rw-rw-r-- 1 kali kali 4206 Aug 11 13:08 python1.py
-rw-rw-r-- 1 kali kali 4667 Aug 20 09:02 python2.py
-rw-rw-r-- 1 kali kali 2315 Aug 21 12:53 python3.py
-rwxrwxr-x 1 kali kali 289 Aug 21 14:22 script_patt.sh
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Templates
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Videos
drwxrwxr-x 2 kali kali 4096 Aug 11 07:30 work
```

```
(kali@kali)-[~]
$ ls -l > ~/content.txt
```



```

(kali@kali)-[~]
└─$ cat ~/content.txt
total 128
-rw-rw-r-- 1 kali kali 78 Aug 6 10:09 10.bash
-rw-rw-r-- 1 kali kali 52 Aug 13 09:05 anu1.txt
-rwx--x--x 1 kali kali 214 Aug 11 12:18 anusha
drwxrwxr-x 2 kali kali 4096 Aug 21 13:49 anushapatil
-rw-rw-r-- 1 kali kali 94 Aug 5 14:54 anusha.sh
-rw-rw-r-- 1 kali kali 855 Aug 14 09:46 assingment2.py
drwxrwxr-x 2 kali kali 4096 Aug 11 12:21 bhavana
-rw-rw-r-- 1 kali kali 53 Aug 13 09:02 bhavana.py
-rw-rw-r-- 1 kali kali 50 Aug 13 09:39 bhavana.txt
-rw-rw-r-- 1 kali kali 0 Aug 21 14:44 content.txt
drwxrwxr-x 3 kali kali 4096 Aug 11 06:51 CYS
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Desktop
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Documents
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Downloads
-rw-rw-r-- 1 kali kali 0 Aug 5 21:23 file
-rw-rw-r-- 1 kali kali 1 Aug 5 16:06 file1.json
-rw-rw-r-- 1 kali kali 49 Aug 5 14:57 file1.sh
-rw-rw-r-- 1 kali kali 19 Aug 20 09:02 file1.txt
-rw-rw-r-- 1 kali kali 26 Aug 5 09:46 hello.sh
drwxrwxr-x 5 kali kali 4096 Aug 11 03:18 LS
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Music
-rw-rw-r-- 1 kali kali 666 Aug 21 14:44 outputFile.txt
drwxr-xr-x 2 kali kali 4096 Aug 21 13:21 Pictures
-rwxrwxr-x 1 kali kali 666 Aug 21 14:10 poem.txt
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Public
-rw-rw-r-- 1 kali kali 4206 Aug 11 13:08 python1.py
-rw-rw-r-- 1 kali kali 4667 Aug 20 09:02 python2.py
-rw-rw-r-- 1 kali kali 2315 Aug 21 12:53 python3.py
-rwxrwxr-x 1 kali kali 289 Aug 21 14:22 script_patt.sh
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Templates
drwxr-xr-x 2 kali kali 4096 Aug 4 12:56 Videos
drwxrwxr-x 2 kali kali 4096 Aug 11 07:30 work

```

c) Rewrite the shell script (3) using <<

```

1 #!/usr/bin/bash
2
3 cat << EOF
4 Enter the pattern search and filename.
5 EOF
6
7 read -p "Enter the pattern to search: " pattern
8 read -p "Enter the filename to search in: " filename
9
10 if [ -f "$filename" ]; then
11     grep "$pattern" "$filename"
12 else
13     echo "File does not exist."
14 fi

```

```

(kali@kali)-[~]
└─$ gedit search_patt.sh

(gedit:30606): tepl-WARNING **: 09:53:27.520: St
Kali-Dark' default style scheme.

(gedit:30606): tepl-WARNING **: 09:53:27.520: De
r installation.

(kali@kali)-[~]
└─$ chmod +x search_patt.sh

(kali@kali)-[~]
└─$ ./search_patt.sh
Enter the pattern search and filename.
Enter the pattern to search: they
Enter the filename to search in: poem.txt
But they, while their companions slept,

```

“You don't have to see the whole staircase, just take the first step.”

— Martin Luther King Jr.