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LINUX OS & SCRIPTING LAB

M.E – CYBER SECURITY

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.

Do the following task using grep command

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

```
$ grep -v "they" 3lab
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,
Were toiling upward in the night.
                                END
Henry Wadsworth Longfellow (1807-1882) was an American poet and educator.
```

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

```
$ grep "they" 3lab
But they, while their companions slept,
```

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

```
$ grep "^w" 3lab
When nearer seen and better known,
Were not attained by sudden flight,
Were toiling upward in the night.
```

- d. Print the next lines after the pattern "stone" matches
Hint: man grep

```
$ grep -A 1 "stone" 3lab
The mighty pyramids of stone
That wedge-like cleave the desert airs,
```

- e. Print the 2 lines above the pattern "stone" matches
Hint: man grep

```
$ grep -B 2 "stone" 3lab
By slow degrees, by more and more,
The cloudy summits of our time.
The mighty pyramids of stone
```

2. Explore variations of grep command

ngrep - Used for network packet filtering based on pattern matches.

pgrep - Searches for processes matching a pattern.

zgrep - Searches within compressed files.

egrep - Extended grep allowing additional regular expressions like +, |, etc.

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

```
#!/bin/bash
echo "Enter the pattern:"
read pattern
echo "Enter the filename:"
read filename
if grep "$pattern" "$filename"; then
    echo "Pattern found"
else
    echo "Pattern not found"
fi
```

```
└─$ ./shell.sh
Enter the pattern:
stone
Enter the filename:
poem.txt
The mighty pyramids of stone
Pattern found
```

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

```
#!/bin/bash
pattern=$1
filename=$2
if grep "stone" "poem.txt" & then
    echo "Pattern found"
else
    echo "Pattern not found"
fi
~
~
```

```
└─$ ./shell2.sh
The mighty pyramids of stone
Pattern found
```

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

```
#!/bin/bash
find . -type f | wc -l
~
~
```

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

```
└─$ sed -n '3,5p' poem.txt
By slow degrees by more and more
The cloudy summits of our time.
```

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

```
└─$ ls -lS | head -5
total 48
drwxr-xr-x 2 amruthesh amruthesh 4096 Aug 23 22:41 Desktop
drwxr-xr-x 2 amruthesh amruthesh 4096 Aug 23 22:41 Documents
drwxr-xr-x 2 amruthesh amruthesh 4096 Aug 23 22:41 Downloads
drwxr-xr-x 2 amruthesh amruthesh 4096 Aug 23 22:41 Music
```

c) Print the last 2 modified file details

```
$ ls -lt | head -3  
total 48  
-rwxrwxr-x 1 amruthesh amruthesh 36 Aug 29 14:09 shell3.sh  
-rwxrwxr-x 1 amruthesh amruthesh 131 Aug 29 13:50 shell2.sh
```