

Assignment No. 6

a) Demonstrate the insertion, deletion, and replacement of string using sed editor.

Sample.txt

This is a sample text file.

Hello, World!

This is a test.

#insert

sed '2a\

New Line' sample.txt

```
anubhav@DESKTOP-9VIA8NE:~$ sed '2a\
New Line' sample.txt
This is a sample text file.
Hello, World!
New Line
This is a test.
```

sed '3i\

Inserted Text' sample.txt

#delete

sed -i '/test/d' sample.txt

```
anubhav@DESKTOP-9VIA8NE:~$ sed -i '/test/d' sample.txt
anubhav@DESKTOP-9VIA8NE:~$ cat sample.txt
This is a sample text file.
Hello, World!
```

sed -i '2d' sample.txt

```
anubhav@DESKTOP-9VIA8NE:~$ sed -i '2d' sample.txt
anubhav@DESKTOP-9VIA8NE:~$ cat sample.txt
This is a sample text file.
```

```
#replacement
sed -i 's/World/Universe/g' sample.txt
```

```
sed -i '1s/sample/example/' sample.txt
```

```
anubhav@DESKTOP-9VIA8NE:~$ sed -i '1s/sample/example/' sample.txt
anubhav@DESKTOP-9VIA8NE:~$ cat sample.txt
This is a example text file.
Universe
anubhav@DESKTOP-9VIA8NE:~$ sed -i 's/World/Universe/g' sample.txt
anubhav@DESKTOP-9VIA8NE:~$ cat sample.txt
This is a example text file.
Universe
```

b) Write a awk script to print the details of all employees in employee.txt whose salary is greater than \$2000.

```
awk -F ',' '$3 > 2000 { print $1, $2, $3 }'
employee.txt
```

```
anubhav@DESKTOP-9VIA8NE:~$ cd anubhav_oslab
anubhav@DESKTOP-9VIA8NE:~/anubhav_oslab$ awk '$6 > 2000 { print $1, $2
, $3, $6 }' employee.txt
7566 JONES MANAGER 2975
7698 BLAKE MANAGER 2850
7782 CLARK MANAGER 2450
7788 SCOTT ANALYST 3000
7839 KING PRESIDENT 5000
7902 FORD ANALYST 3000
```

```
+ 1.84375 0 2 cbr 210 ----- 0 0.0 3.1 225 610
- 1.84375 0 2 cbr 210 ----- 0 0.0 3.1 225 610
r 1.84471 2 1 cbr 210 ----- 1 3.0 1.0 195 600
r 1.84566 2 0 ack 40 ----- 2 3.2 0.1 82 602
+ 1.84566 0 2 tcp 1000 ----- 2 0.1 3.2 102 611
- 1.84566 0 2 tcp 1000 ----- 2 0.1 3.2 102 611
r 1.84609 2 3 cbr 210 ----- 0 0.0 3.1 225 610
+ 1.84609 2 3 cbr 210 ----- 0 0.0 3.1 225 610
d 1.84609 2 3 cbr 210 ----- 0 0.0 3.1 225 610
- 1.8461 2 3 cbr 210 ----- 0 0.0 3.1 192 511
r 1.84612 3 2 cbr 210 ----- 1 3.0 1.0 196 603
+ 1.84612 2 1 cbr 210 ----- 1 3.0 1.0 196 603
- 1.84612 2 1 cbr 210 ----- 1 3.0 1.0 196 603
+ 1.84625 3 2 cbr 210 ----- 1 3.0 1.0 196 612
```

c) write an awk script to read the above trace file and print the number of messages sent by each node. (here column 3 and 4 indicates the source and destination node id of the packet)

```
awk '{
    source = $3
    dest = $4
    if (source ~ /^[0-9]+$ / && dest ~ /^[0-9]+$ /) {
        sent[source]++
        sent[dest]++
    }
}
END {
    for (node in sent) {
        print "Node " node ": " sent[node] " messages
sent"
    }
}' trace.txt
```

```
Node 0: 5 messages sent
Node 1: 3 messages sent
Node 2: 14 messages sent
Node 3: 6 messages sent
```

d) Write an awk script to read the above trace file and print the total amount of bytes exchanged during network communications. (the column 6 represents the size of a message)

```
awk '{
    if ($6 ~ /^[0-9]+$ /) {
        total_bytes += $6
    }
}
END {
    print "Total Bytes Exchanged: " total_bytes "
bytes"
}' trace.txt
```

Output: Total Bytes Exchanged: 4350 bytes.