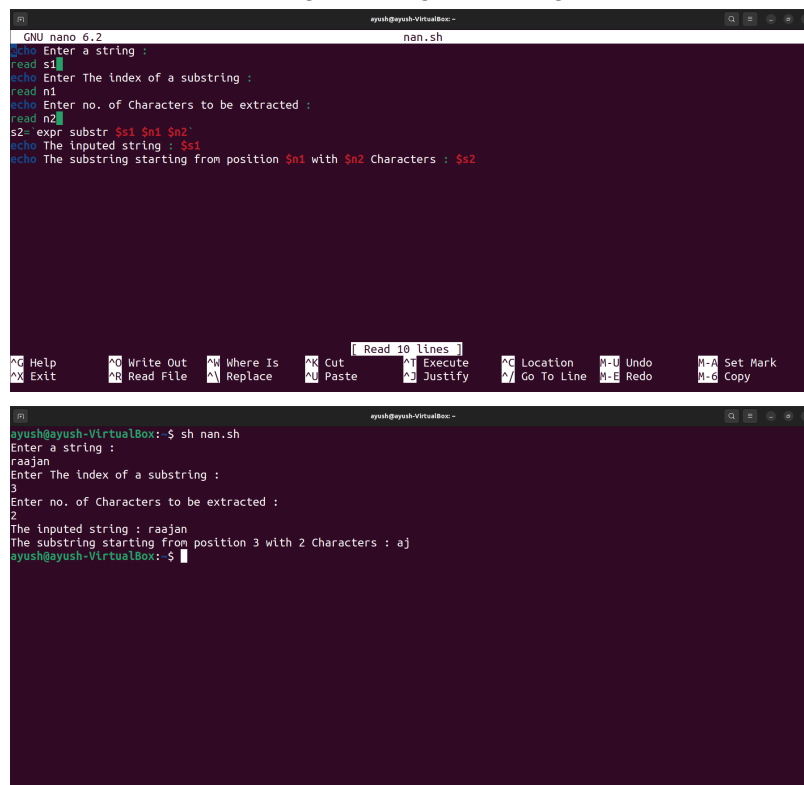Exp 5:- Write a shell script and C program to perform the following string operations:

a) To extract a substring from a given string.


```
GNU nano 6.2                          nan.sh
echo Enter a string :
read s1
echo Enter The index of a substring :
read n1
echo Enter no. of Characters to be extracted :
read n2
s2=`expr substr $s1 $n1 $n2`
echo The inputed string : $s1
echo The substring starting from position $n1 with $n2 Characters : $s2




                          [ Read 10 lines ]
^G Help      ^O Write Out  ^W Where Is  ^K Cut    ^T Execute   ^C Location   M-U Undo   M-A Set Mark
^X Exit      ^R Read File  ^\ Replace   ^U Paste  ^J Justify   ^/ Go To Line M-E Redo   M-6 Copy
```



```
ayush@ayush-VirtualBox:~$ sh nan.sh
Enter a string :
raajan
Enter The index of a substring :
3
Enter no. of Characters to be extracted :
2
The inputed string : raajan
The substring starting from position 3 with 2 Characters : aj
ayush@ayush-VirtualBox:~$
```

b) To find the length of a given string.

Compare the running time of above shell script and C program using the time command.


```
GNU nano 6.2                          exp5.sh
$str
echo "enter the string"
read str
echo "length entered string is : ${#str}"




                          [ Read 5 lines ]
^G Help      ^O Write Out  ^W Where Is  ^K Cut    ^T Execute   ^C Location   M-U Undo   M-A Set Mark
^X Exit      ^R Read File  ^\ Replace   ^U Paste  ^J Justify   ^/ Go To Line M-E Redo   M-6 Copy
```

```
ayush@ayush-VirtualBox:~$ cat exp5.sh
$str
echo "enter the string"
read str
echo "length entered string is : ${#str}"

ayush@ayush-VirtualBox:~$ time ./exp5.sh
enter the string
this is test string
length entered string is : 19

real    0m10.646s
user    0m0.004s
sys     0m0.001s
ayush@ayush-VirtualBox:~$
```