Sister Nivedita University

Department of Computer Science and Engineering

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Stream : Computer Science and Engineering

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Year : 2nd

Enrollment Number : 19111100001111

Topic : Lab Assignment - 3 (Operating Systems)

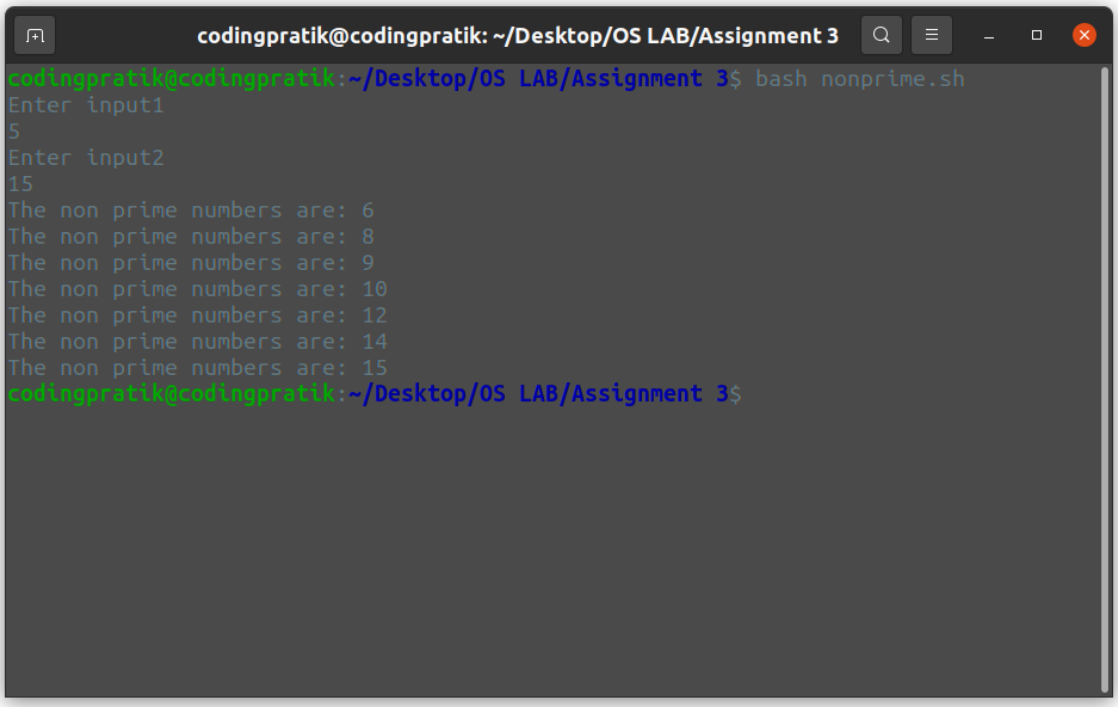
Topic: Shell Programming

Date of Submission: 14/04/2021

1. Write a Shell script to take two numbers as range from the terminal and print non-prime numbers between the given range.

   Ans:

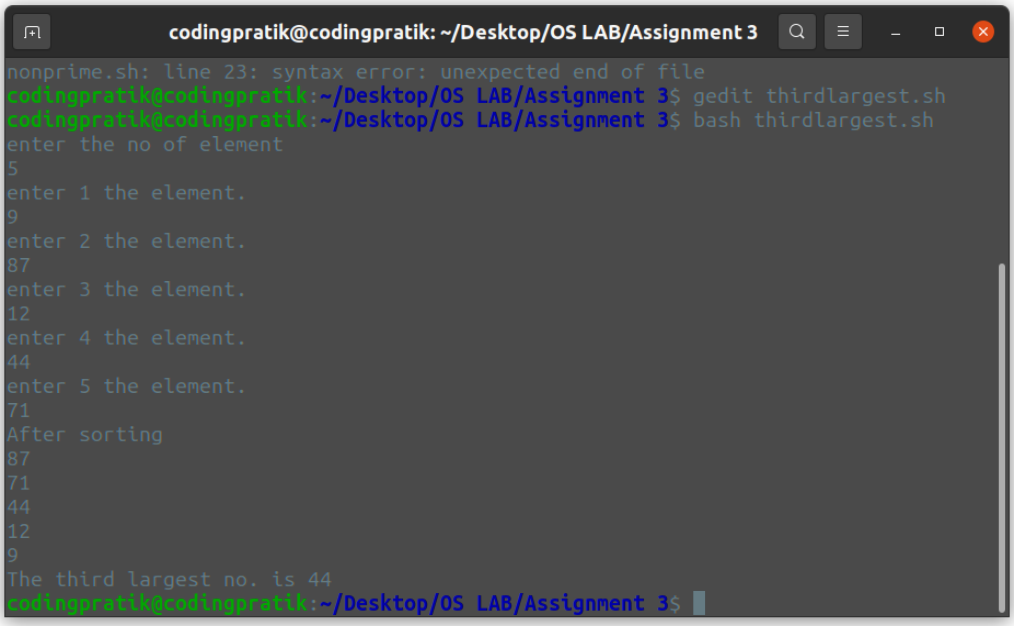
```
echo "Enter input1"
read x
echo "Enter input2"
read y
for a in $(seq $x $y)
do
k=0
for i in $(seq 2 $(expr $a - 1))
do
      if [ $(expr $a % $i) -eq 0 ]
      then
            k=1
            break
      fi
      done

      if [ $k -eq 1 ]
      then
      echo "The non prime numbers are: $a"
      fi
done
```



2. Write a Shell script to take 'n' number of elements in an array and print the third largest number. Value of 'n' must be taken from the terminal.

Ans:

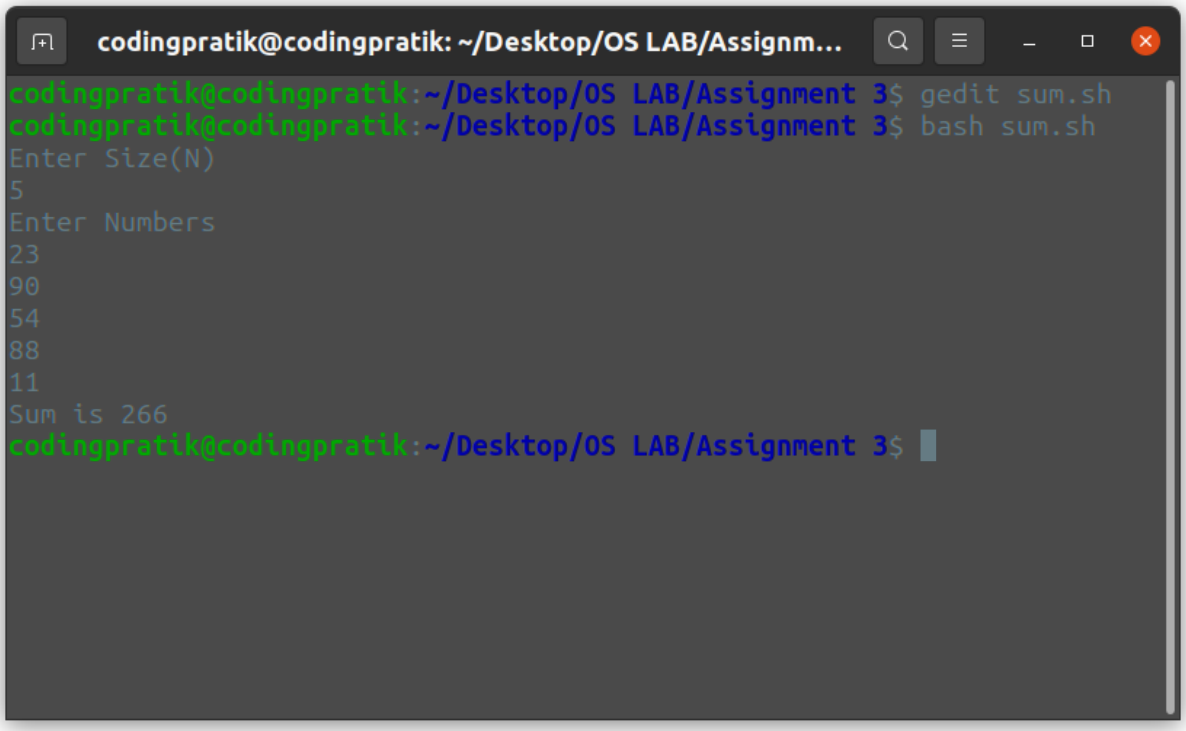
```
echo "enter the no of element"
read n1
for (( i=0; i<$n1; i++ ))
do
        echo "enter `expr $i + 1` the element."
        read a[$i]
done
for (( i=0; i<$n1; i++ ))
do
        for (( j=`expr $i + 1`; j<$n1; j++ ))
        do
                if [ ${a[$i]} -gt ${a[$j]} ]
                then
                        x=${a[$i]}
                        a[$i]=${a[$j]}
                        a[$j]=$x
                fi
        done
done
echo "After sorting"
        for (( i=$n1; i>0; i-- ))
        do
                echo ${a[`expr $i - 1`]}
        done
echo "The third largest no. is ${a[2]}"
```



3. Store ‘n’ number of elements in an array and find out the sum of the array elements. Value of 'n' must be taken from the terminal.

   Ans:

```
echo "Enter Size(N)"
read N
i=1
sum=0

echo "Enter Numbers"
while [ $i -le $N ]
do
  read num
  sum=$((sum + num))
  i=$((i + 1))
done

echo "Sum is $sum"
```

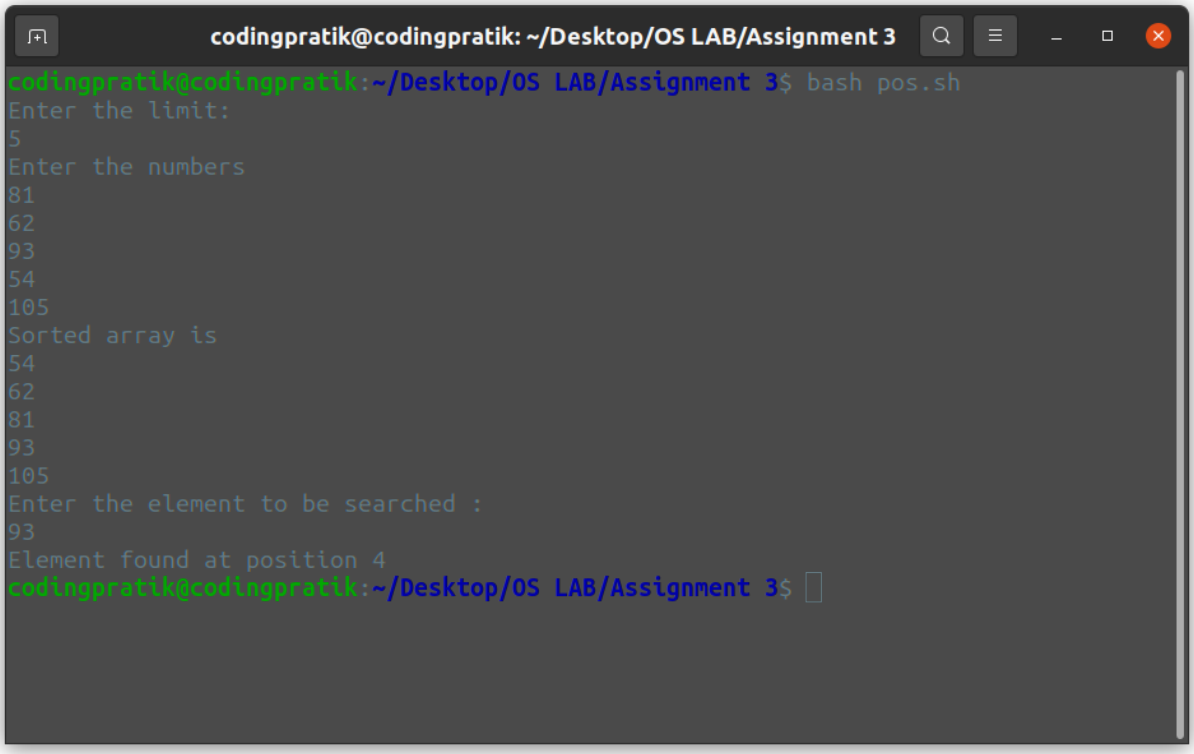


4. Write a shell program that will accept 10 numbers from the terminals and will search the position of a given no in the supplied no.

Ans:

```
echo "Enter the limit:"
read n
echo "Enter the numbers"
for(( i=0 ;i<n; i++ ))
do
read m
a[i]=$m
done
  for(( i=1; i<n; i++ ))
do
  for(( j=0; j<n-i; j++))
do
  if [ ${a[$j]} -gt ${a[$j+1]} ]

then

          t=${a[$j]}

          a[$j]=${a[$j+1]}

          a[$j+1]=$t

fi
done
done
   echo "Sorted array is"
   for(( i=0; i<n; i++ ))
do
 echo ${a[$i]}
done
  echo "Enter the element to be searched :"
read s
l=0
c=0
u=$(($n-1))
  while [ $l -le $u ]
do
  mid=$(((( $l+$u ))/2 ))
  if [ $s -eq ${a[$mid]} ]
```

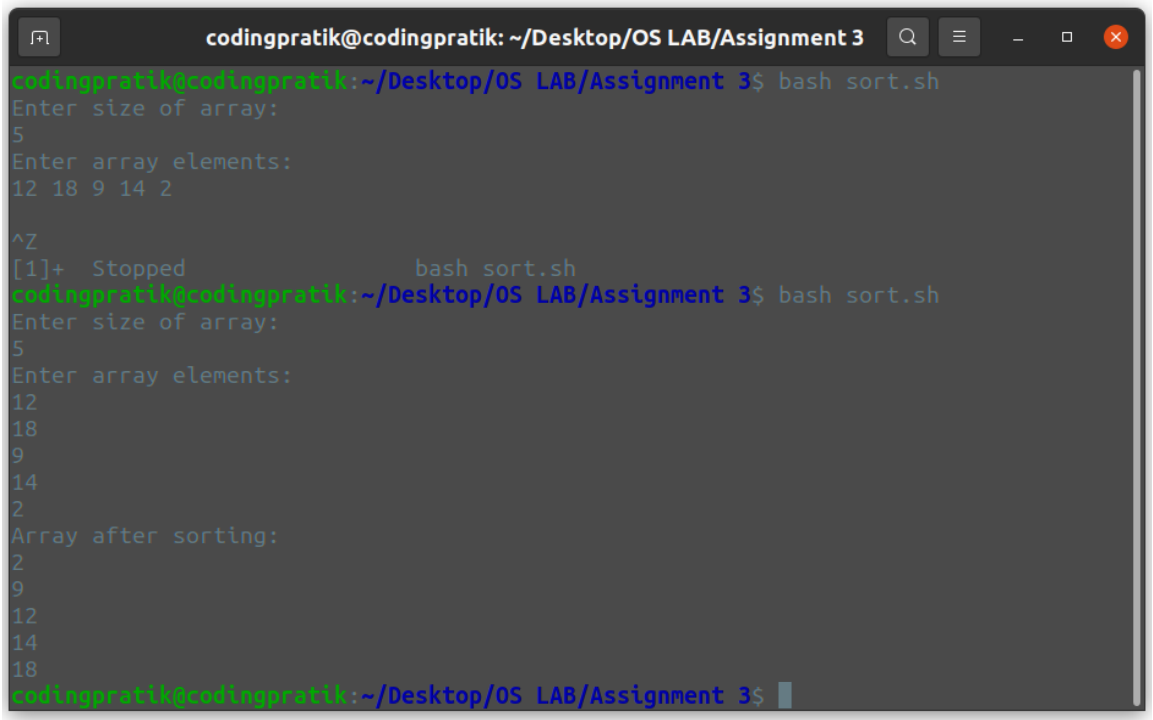
```
then
c=1
break
  elif [ $s -lt ${a[$mid]} ]
then
  u=$(($mid-1))
else
  l=$(($mid+1))
fi
done
 if [ $c -eq 1 ]
then
echo "Element found at position $(($mid+1))"
else
echo "Element not found"
fi
```



5. Write a shell program to sort a list of 'n' numbers. Value of 'n' must be taken from the terminal.

Ans:

```
echo "Enter size of array: "
read n
echo "Enter array elements: "
for ((i=0; i<n; i++))
do
read a[$i]
done
for ((i=0; i<n; i++))
do
        for ((j=$i; j<n; j++))
 do
        if [ ${a[$i]} -gt ${a[$j]} ]
 then
        temp=${a[$i]}
        a[$i]=${a[$j]}
        a[$j]=$temp
  fi
  done
  done
  echo "Array after sorting: "
  for ((i=0; i<n; i++))
 do
echo ${a[$i]}
done
```



While pasting the code from editor to google docs, there could be some minor formatting error, so I have pushed all these codes of this assignment to github.

GitHub Link: https://github.com/PratikChakraborty10/Shell_Script_Assignment_3

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