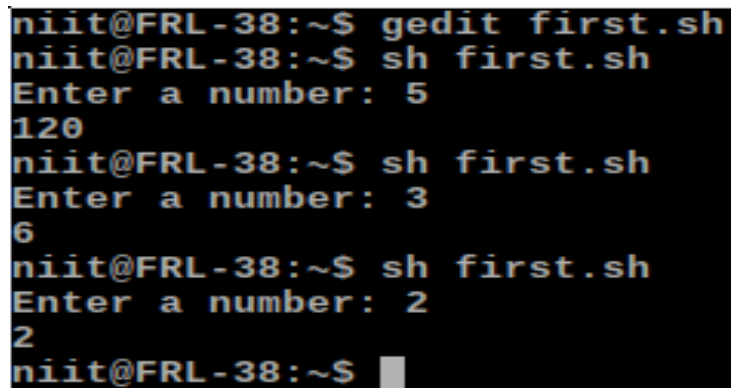


Q1

Code

```
read -p "enter a no to calculate the factorial of a number: " num
f=1
while [ $num -gt 1 ]
do
    f=$((fact*num))
    num=$((num-1))
done
echo $fact
```

Output



A terminal window with a black background and white text. The prompt is 'niit@FRL-38:~\$'. The user enters 'gedit first.sh'. The prompt is 'niit@FRL-38:~\$'. The user enters 'sh first.sh'. The prompt is 'Enter a number:'. The user enters '5'. The output is '120'. The prompt is 'niit@FRL-38:~\$'. The user enters 'sh first.sh'. The prompt is 'Enter a number:'. The user enters '3'. The output is '6'. The prompt is 'niit@FRL-38:~\$'. The user enters 'sh first.sh'. The prompt is 'Enter a number:'. The user enters '2'. The output is '2'. The prompt is 'niit@FRL-38:~\$' followed by a cursor.

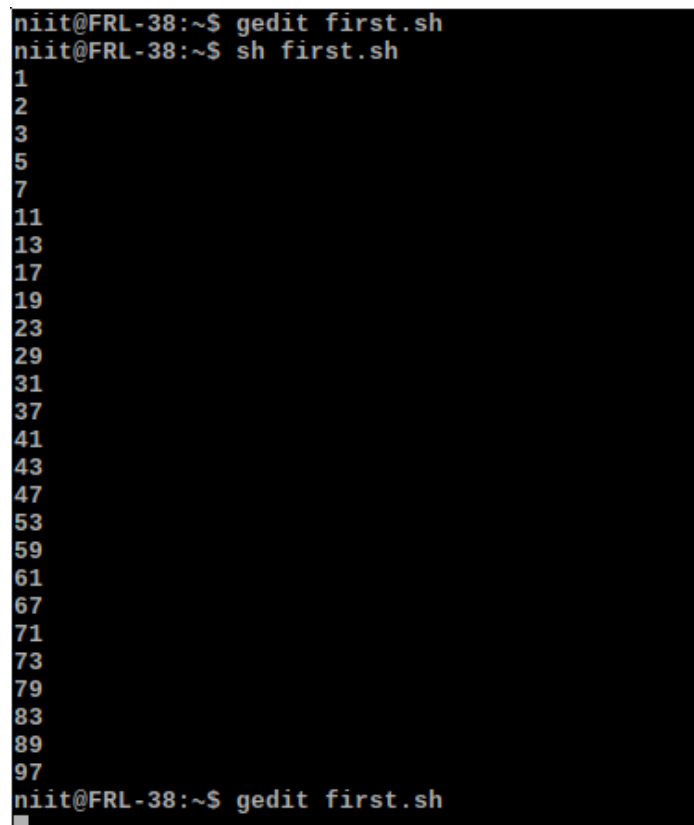
Q2

Code

```
is_prime() {
    num=$1
    i=2
    while [ $i -lt $num ]
    do
        if [ $($num % $i) -eq 0 ]
        then
            return 1 # Not a prime
        fi
        i=$((i+1))
    done
    return 0 # Prime
}
# Loop through numbers 1 to 100
num=1
```

```
while [ $num -le 100 ]
do
    is_prime $num
    if [ $? -eq 0 ] # If the function returns 0, then the number is prime
    then
        echo $num
    fi
    num=$((num+1))
done
```

Output

A terminal window with a black background and white text. The prompt is 'niit@FRL-38:~\$'. The user enters 'gedit first.sh' and then 'sh first.sh'. The output is a list of prime numbers: 1, 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97. The prompt returns to 'niit@FRL-38:~\$' after the last number.

```
niit@FRL-38:~$ gedit first.sh
niit@FRL-38:~$ sh first.sh
1
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
83
89
97
niit@FRL-38:~$ gedit first.sh
```

Q3

Code

```
echo "Enter your marks:"
read mark
if [ $mark -ge 90 ] && [ $mark -le 100 ]
then Grade="A"
elif [ $mark -ge 70 ] && [ $mark -le 89 ]
then Grade="B"
```

```
elif [ $mark -ge 40 ] && [ $mark -le 69 ]
then Grade="C"
else [ $mark -le 40]
Grade="F"
fi
echo "you achieve: $Grade"
```

Output

```
Enter the student mark:
99
Grade: Grade A
niit@FRL-38:~$ sh first.sh
Enter the student mark:
99.9
first.sh: 5: [: Illegal number: 99.9
first.sh: 8: [: Illegal number: 99.9
Grade:
niit@FRL-38:~$ gedit first.sh
niit@FRL-38:~$ sh first.sh
Enter your marks:
33
first.sh: 12: Syntax error: "then" unexpected (expecting "fi")
niit@FRL-38:~$ gedit first.sh
^[[A^[[A^C
niit@FRL-38:~$ sh first.sh
Enter your marks:
33
first.sh: 11: [: missing ]
you achive: F
niit@FRL-38:~$ gedit first.sh
```