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## FACTORIAL OF A NUMBER

**Aim:** Write a shell program to find the factorial of a number.

### Algorithm:

1. Start
2. Read the value of "N" from the user and store the value in variable N
3. Initialize variable "FACTORIAL" with value 1
4. Define a while loop till N is not equal to 1
  - a. FACTORIAL = FACTORIAL \* N
  - b. N = N - 1
5. Print the value of FACTORIAL
6. STOP

### Program

```
#!/bin/bash

echo Program by Abhinav Rajesh 20219003

read -p "Enter the value of n: " N
FACTORIAL=1

while [ $N != 1 ]
do

    FACTORIAL=$(( FACTORIAL * N ))
    N=`expr $N - 1`
done

echo "Factorial: $FACTORIAL"
}
```

### Output

```
~/Documents/College/S6/OSLab/lab2 ./factorial.sh
Program by Abhinav Rajesh 20219003
Enter the value of n:5
Factorial: 120
```

```
~/Documents/College/S6/OSLab/lab2 ./factorial.sh
Program by Abhinav Rajesh 20219003
Enter the value of n:6
Factorial: 720
```

**Result:**

Script to find factorial of a number is executed successfully

**Remarks:**