

S.No: 37	Exp. Name: Write a C program to find the Factorial of a given number using Recursion	Date:2023-01-10
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Aim:

Write a program to find the `factorial` of a given number using recursion process.

At the time of execution, the program should print the message on the console as:

Enter an integer :

For example, if the user gives the **input** as:

Enter an integer : 6

then the program should **print** the result as:

Factorial of 6 is : 720

Note: Write the recursive function `factorial()` in `Program901a.c`.

Source Code:

`Program901.c`

```
#include <stdio.h>
#include "Program901a.c"
void main() {
    long int n;
    printf("Enter an integer : ");
    scanf("%ld", &n);
    printf("Factorial of %ld is : %ld\n", n ,factorial(n));
}
```

`Program901a.c`

```
long int factorial(long int n);
long int factorial(long int n)
{
    if(n==0)
        return 1;
    else
        return(n*factorial(n-1));
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter an integer : 5
Factorial of 5 is : 120

Test Case - 2
User Output
Enter an integer : 7
Factorial of 7 is : 5040

Test Case - 3
User Output
Enter an integer : 4
Factorial of 4 is : 24

Test Case - 4
User Output
Enter an integer : 8
Factorial of 8 is : 40320

Test Case - 5
User Output
Enter an integer : 0
Factorial of 0 is : 1

Test Case - 6
User Output
Enter an integer : 9
Factorial of 9 is : 362880