

RECURSIVE FUNCTIONS

PROBLEM GIVEN:

Write a program to find factorial of a number using recursive functions.

ALGORITHM:

Step 1: Start

Step 2: Declare all the required variables and function fact(int). Step 3:

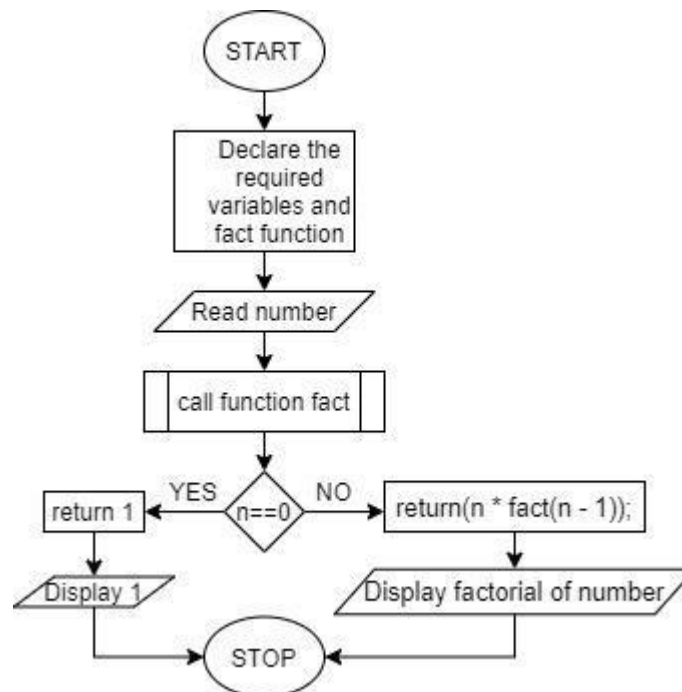
Get number from the user.

Step 4: Call the function fact(n) with arguments as the reference variable. Step 5:

Check if $n == 0$. If true, return 1. Else return $(n * \text{fact}(n - 1))$.

Step 6: Display the factorial of the number.

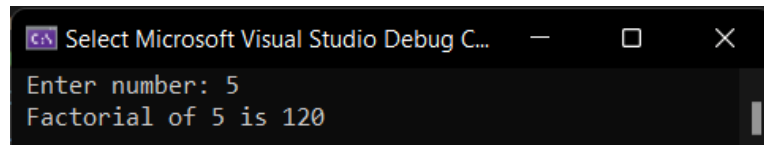
FLOWCHART:



PROGRAM:

```
//EXP-7b
//WAP in C to find Factorial of a number using recursive functions
#include<stdio.h>
//Declare function fact(int)
int fact(int);
void main()
{
    //Declare variables
    int x, n;
    //Read number
    printf(" Enter number: ");
    scanf("%d", &n);
    //Call function fact(int n) and store return value in variable x
    x = fact(n);
    //Display the result
    printf(" Factorial of %d is %d\n", n, x);
}
//fact(int n) function
int fact(int n)
{
    //Check if number is zero
    if (n == 0)
        //Return 1 if yes
        return(1);
    return(n * fact(n - 1));
}
```

OUTPUT:

A screenshot of a Windows command prompt window. The title bar reads "Select Microsoft Visual Studio Debug C...". The window contains two lines of text: "Enter number: 5" and "Factorial of 5 is 120".

```
Select Microsoft Visual Studio Debug C...
Enter number: 5
Factorial of 5 is 120
```