

**Trimester: I/II/III Subject: Programming and Problem Solving**

**Name**: Krishnaraj Thadesar **Division:** 9

**Roll No.:** 109054 **Batch:** I3

**Experiment No.:** 6

**Name of the Experiment:** Factorial using Recursion

**Performed on:** 10rd February 2022

**Submitted on:** 17st January 2022

**AIM**: Write an algorithm and draw a flowchart for a C program to find the factorial of a number using recursion.

**OBJECTIVE:**

1. To learn and understand recursion in C
2. To learn about factorials.

# PLATFORM: *Arch Linux 64 Bit*

# ALGORITHM:

Step 1: Start

Step 2: Declare a variable number = 0

Step 3: Input the value of the variable

Step 4: Call the Factorial function passing number as the arguement

Step 5: If value of number is 1 return 1

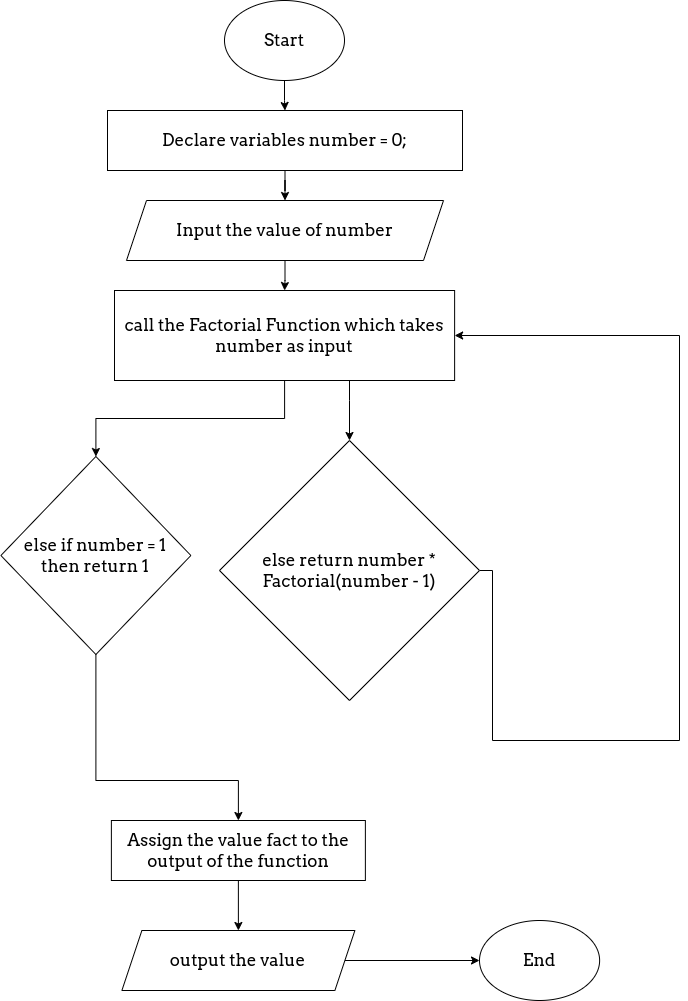
Step 6: If value of number is not 1, then return number \* Factorial(number -1)

Step 7:Assign the value of returned by factorial function to another variable fact.

Step 6: Output value of fact.

Step 7: End

# Flowchart:



# CODE:

// Write a C program to compute the factorial of a given number using

recursion.

#include<stdio.h>

double factorial(int number)

{

    if(number == 1)

        return 1;

    return number \* factorial(number - 1);

}

int main()

{

    int a = 0;

    printf("Enter the number whose factorial you want: ");

    scanf("%d", &a);

    printf("The factorial of the number is: %.1lf", factorial(a));

    return 0;

}

**OUTPUT**

*Addition*

Enter the number whose factorial you want: 5

The factorial of the number is: 120.0

**CONCLUSION:**

Recursion and Factorials were understood in detail.