Assignment - 6

Subject: Programming and Problem Solving
Trimester: 1

Name: Pranjay Beniwal Division: 1
Roll no: 202053 Batch: A3

Aim: Write a C function to compute factorial of the given number using recursion

Objective:

1) To learn and understand functions in C.
2) To learn and understand recursive functio

Theory:

User defined functions →

```
return_type function_name (parameter list)
{
   body of the function
}
```

.return-type is the type of value that the function will return

Function-name is the actual name of the function

Example

```
int max (int num1, int num2)
{
    int result;
    if (num1 > num2)
        result = num1;
    else
        result = num2;
    return result;
}
```

Use of return statement

→ Return ends the function and returns the value to the calling of function

~~Actual parameter~~

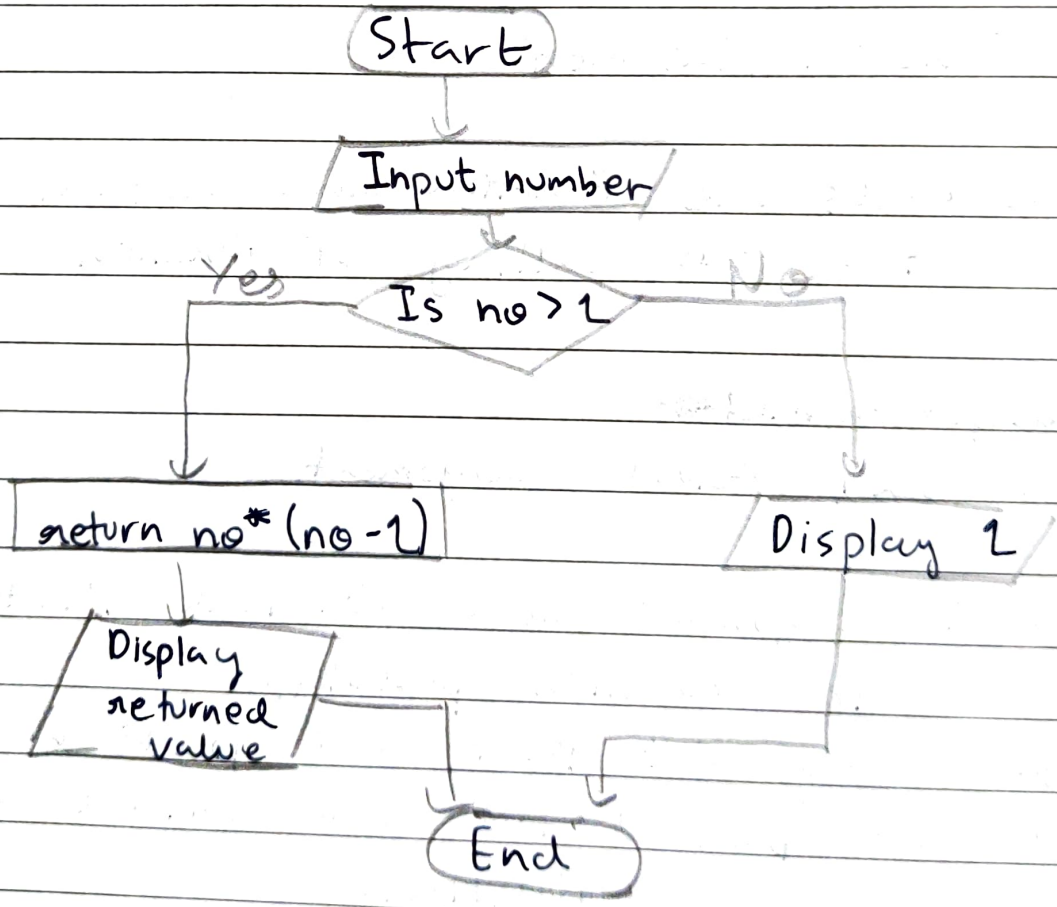
Formal and Actual argument

→ Formal argument are functions that are declared in function prototype
Actual argument that are ~~passed~~ values that are passed to the called function from the main function.

Algorithm:

Step 1: Start
Step 2: Input number
Step 3: If no > 1
return no * (no - 1)
Else return 1
Step 4: Display returned value
Step 5: End

Flowchart



Input = 5
Output = 120.

Conclusion: Thus implemented the program to compute factorial using recursion

FAQ

1. What is recursion function?

→ Calling the function within the body of the function again is recursion

2. What is a local variable?

→ Local variables are accesible in parts of program like variable declared in a function are local variables.