

# CS 1303: Introduction to Programming

## Assignment 5: Using Functions in C

### Submission Deadline:

### 16th Oct 2019, 21:30 hrs

## 1 Problem Statement

This problem requires you to accept two numbers  $x$  and  $y$  from the user, and find their combination value  ${}^xC_y$ . For this, you need to design a function that returns the factorial of a number. You have to use this function to find the combination value. Use the following formula to calculate  ${}^xC_y$  :

$${}^xC_y = \frac{x!}{y!(x-y)!}$$

### 1.1 Input Format

Take two numbers  $x$  and  $y$  as input from the user.

Please note that you have to check whether  $x \geq y$ , otherwise  ${}^xC_y$  becomes undefined. Your program should not accept as input any pair of values where this condition is not satisfied. Also note:  $0 < x, y \leq 15$  and  $0! = 1$ .

### 1.2 Output Format

A single number as the output, equal to  ${}^xC_y$ .

### 1.3 Sample Test Cases

1. INPUT:  
5 10  
OUTPUT:  
Incorrect Input!!
2. INPUT:  
5 3  
OUTPUT  
10

3. INPUT:  
15 -3  
OUTPUT  
Incorrect Input!!
4. INPUT:  
14 10  
OUTPUT  
1001

## 2 Submission Details

Please submit the following information:

1. **Source Code:** Your source program. The name of your file should be in this format: **Src-comb\_roll no.c** where you replace roll no with your roll number.
2. **Readme.txt:** In this file, you should explain how to compile and run your program. The name of your file should be in this format: Combroll no-readme.txt where you replace roll no with your roll number.
3. **Design.txt:** In this file, you explain the design of your program (control flow of your program). Your objective should be such that the TA reading this file should easily understand the working of your program. Please add details about how you have handled corner cases - i.e. for what inputs you have printed “Invalid Input”. The name of your file should be in this format: Combroll no-Design.txt where you replace roll no with your roll number.  
  
Zip all these files and name it as **Comb-rollno.zip**. **Please follow the naming convention strictly. Otherwise, your program will not be evaluated.** Then, submit it on google classroom for this assignment by the above-mentioned deadline.

## 3 Evaluation Policy

The TAs will use the following evaluation policy:

1. Design: 40%
2. Execution: 50%
3. Indentation and Documentation (with comments): 10%

**Late Submission Penalty:** For each day after the deadline, your submission will be penalized by 10 marks.