CS1303: Introduction to Programming
Assignment 7:
Recursive Program for Prime Number

Submission Deadline:
Thursday, 31st October 2019, 10:00 PM

Problem Statement
Develop a C program using **recursion** that prints the sum of prime digits of **a positive number**, taken as input from the user. You are required to develop a recursive function that takes a number as a parameter and returns the sum of its prime digits only. The number given as input should have **exactly 10 digits**. In case of any invalid input, the program should ask the user to enter the correct input. Note that any number smaller than or greater than 10 digits will be an invalid input.

Output:

The output of the program will be a number, which is the sum of all the prime digits in the given valid positive number as input.

Sample Test Cases:

1) **INPUT** : 1135541000
   OUTPUT : The sum of prime digits = 13

2) **INPUT** : 4441004960
   OUTPUT : The sum of prime digits = 0

3) **INPUT** : 9456523453534
   OUTPUT: INCORRECT INPUT!! Please enter again...

   INPUT : 1102857144
   OUTPUT : The sum of prime digits = 14

4) **INPUT** : -8421004260
   OUTPUT : INCORRECT INPUT!! Please enter again...

   INPUT : 4532101019
   OUTPUT : The sum of prime digits = 10

5) **INPUT** : 9456
OUTPUT : INCORRECT INPUT!! Please enter again…

INPUT : 6066321444
OUTPUT : The sum of prime digits = 5

Notes:
(1) You have to use **recursion** to develop this application.

Submission Details:
Please submit the following information:

- **Source Code:** Your source program. The name of your file should be in this format: **Prime-roll no.c** where you replace "roll no" with your roll number.

- **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: **Prime-Readme-roll no.txt** where you replace "roll no" with your roll number.

- **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 "Error". The name of your file should be in this format: **Prime-Design-roll no.txt** where you replace "roll no" with your roll number.

Zip all these files and name it as **Prime-roll no.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.

Plagiarism policy: If we find a case of plagiarism in your assignment (i.e. copying of code from each other, in part or whole), you will be awarded **zero marks**. **Note** that we will not distinguish between a person who has copied, or has allowed his/her code to be copied; both will be equally awarded **zero** marks for the submission. Follow the link below for more information about plagiarism policy:
https://cse.iith.ac.in/academics/plagiarism-policy.html

Evaluation Policy:
The TAs will use the following evaluation policy:
- Design: 30%

- Execution: 60%
- Indentation and Documentation (with comments): 10%

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