CL1002 – Programming Fundamentals Lab

Exercise # 05

Note:

- Submit a pdf file containing all of your C code with all possible screenshots of every task outputs on Google Classroom.
- Copied task will be awarded **zero** marks.
- Note that these lab task marks could be graded through a viva in lab.
- Please submit your file in this format (roll-no-name) i.e (22P-8743-Zain.pdf).

Problem: 1

Write a Program in C to Calculate Combination(nCr) for given values of n and r.

Note: Create a function to calculate the factorial and call it three times for each factorial (**n!** , **r!** , **(n-r)!**) in main.
The **nCr** (combination) formula is:

$$nCr = \frac{n!}{r!\ (n - r)!}$$

Sample Output:

Enter n: 5

Enter r: 3

ncr for n=5 and r = 3 is 10

Problem: 2

Write a function that takes two numbers as an argument and return their LCM.

Problem: 3

A university does not allow its student to sit in the exam if his/her attendance is less than 80% in any course/lab.

Write a program to ask a student about total number of classes scheduled by instructor during the whole semester and total number of classes he/she attended during the whole semester. Now pass both integers to a function named calculateAttendance(int classesAttended, int classesTotal) which should calculate, display the attendance and print the decision if he/she is allowed to sit in the exam or not.

Sample Output:

Enter total classes scheduled: 10

Enter total classes attended: 9

Your attendance is: 90%

You are allowed to sit in the exam

Problem: 4

Suppose that the cost of sending an international fax is calculated as follows:

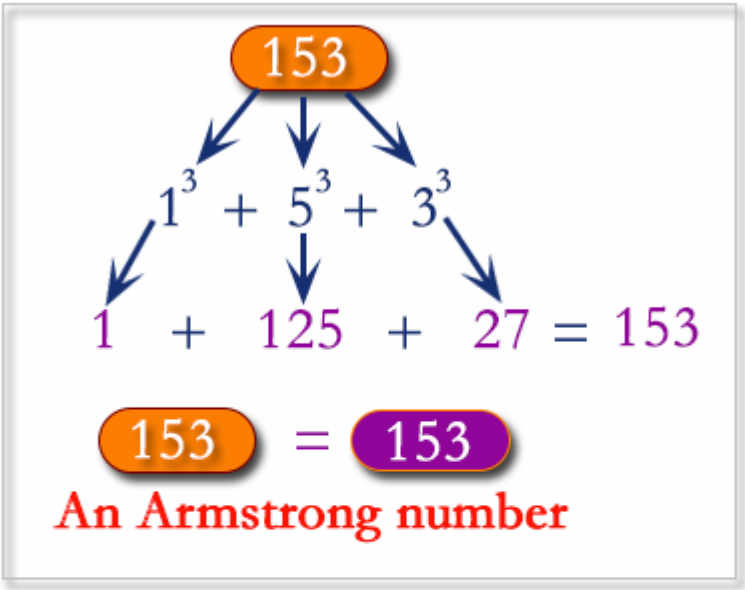
Service charges $3.00; $.20 per page for the first 10 pages; and $0.10 for each additional page. Design a function that takes the number of pages to be faxed as a parameter. The Function then uses the number of pages to be faxed to calculate and return the amount due.

Ask user to enter number of pages and pass it to function

Additional Task (Ungraded)

Problem: 5

Write a program in C to check Armstrong and perfect numbers using the function.



Perfect Number :

Divisor of 28 : 1, 2, 4, 7, 14, 28

Sum of 1 + 2 + 4 + 7 + 14 = 28

Sum = Original Number

28 is *Perfect number*