**CPNM Lab Assignment Day 2**

Date – 07-12-2022 (A2) 08-12-2022 (A3)

1. Any year is input through the keyboard. Write a program to determine whether the year is a leap year or not. [Hint: Use the % (modulus) operator]. Show two cases - one where entered year is leap year, another where entered year is not a leap year.
2. Write a C program to provide calculator functionality using two operands given by the user. The valid operators are +, -, \*, / and %. The program should keep on asking the user for a pair of numbers until the user enters 0 & 0.

Sample Output:

Enter two numbers: 10 20

Enter operator: \*

Result: 200

Enter two numbers: 50 30

Enter operator: /

Result: 1.66666666667

Enter two numbers: 0 0

Quitting Program

1. Write a C program to find out
   1. whether a given number is Armstrong or not. *A number whose sum of the cubes of the individual digits is the number itself is an Armstrong Number. E.g., 153 = 13 + 53 + 33*

Example 1 –

Enter a number: 153

153 is an Armstrong Number

Example 2 –

Enter a number: 143

143 is not an Armstrong Number

* 1. all Armstrong numbers between a given range [a, b] where a and b are given by the user. [Optional]

1. If the marks obtained by a student in five different subjects are input through the keyboard, find the total and percentage. The maximum marks in each subject is 100. Check for invalid, wrong inputs and give appropriate messages.

Sample outputs  
Case 1:

Enter marks in Subject 1: 60

Enter marks in Subject 2: 75

Enter marks in Subject 3: 80

Enter marks in Subject 4: 80

Enter marks in Subject 5: 70

Total: 365/500

Percentage: 73%

Case 2:

Enter marks in Subject 1: 60

Enter marks in Subject 2: 75

Enter marks in Subject 3: -80

Marks cannot be negative. Please try again.

Case 3:

Enter marks in Subject 1: 60

Enter marks in Subject 2: 75

Enter marks in Subject 3: 800

Marks cannot be more than maximum marks (100). Please try again.

1. Write a C program to print the first ‘*n*’ numbers of the Fibonacci sequence. The Fibonacci sequence is constructed by adding the last two numbers of the sequence so far to get the next number in the sequence. The first and second numbers of the sequence are defined as 0 and 1. The program should keep on asking the value of n until user gives -1. [Optional]

Sample Output:

Enter n: 5

0 1 1 2 3

Enter n: 8

0 1 1 2 3 5 8 13

Enter n: -1

Program ended.

1. In a town, the percentage of men is ‘m’. The percentage of total literacy is’L’. If total percentage of literate men is ’lm’ of the total population, write a program to find the total number of illiterate men and women if the population of the town is P. [Optional]

Sample output

Enter percentage of men: 35

Enter percentage of total literacy: 48

Enter percentage of literate men: 35

Enter total population: 80000

Total number of illiterate men: 13600

Total number of illiterate women: 28000