CL1002 – Programming Fundamentals Lab

Quiz # 02 BS CS (Section C)

Difficulty level: ★★☆☆☆

Note:

- Submit a pdf containing all your C code with all possible screenshots of every task output on Google Classroom.
- Please submit your file in this format (roll-no-name) i.e. (23P-1234-Ali.pdf).

Problem: 1

Create a C program for managing a student grading system. The program should accept the marks for five subjects: Math, English, Computer Science, Science, and Urdu. Implement the following functions:

- **calculateObtainedMarks()**: This function should calculate and return the total marks obtained by the student.
- **calculatePercentage()**: Create a function to calculate and return the student's percentage based on the total marks obtained and the total marks available.
- **calculateGrades()**: Develop a function to determine and return the student's grade according to the following grading policy:
  - 90-100: A
  - 80-89: B
  - 70-79: C
  - 60-69: D
  - Below 60: Fail

Additionally, modify your program to perform the following steps:

- If the obtained marks are less than or equal to the total marks and greater than or equal to zero, then call the **calculatePercentage()** and **calculateGrades()** functions to calculate and display the student's percentage and grade based on the provided grading policy.

The program should prompt the user for the total marks available for the five subjects. Then, it should accept the marks for each subject, calculate the total marks obtained, and if the obtained marks are within the valid range (between 0 and the total marks available), it should calculate and display the percentage and grade.

Problem: 2

Create a C program to show whether the year entered by user is a leap year or not. A year is a leap year if it is divisible by four, except that any year divisible by 100 is a leap year only if it is divisible by 400. Write a C program that inputs a year and display Leap Year if it is a leap year otherwise displays NOT a leap year.

Problem: 3

Create a C program that presents the following menu for a parking area:

- M = Motorcycle
- C = Car
- B = Bus

The program should prompt the user for the vehicle type and the number of days they wish to park the vehicle. It should then calculate the total charges using the **calculateBill()** function and display the charges according to the following criteria:

- Motorcycle: 10 Rs per day
- Car: 20 Rs per day
- Bus: 30 Rs per day