

# CL1002 – Programming Fundamentals Lab

## Quiz # 01 BS CS (Section B)

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

**"A rhombus is a four-sided polygon with all sides of equal length."**

Area of a Rhombus: The area of a rhombus can be calculated using the formula:

$$\text{Area} = (1/2) * (\text{product of diagonals})$$

**Perimeter of a Rhombus:** The perimeter of a rhombus is found by multiplying the length of one side by 4.

Write a C program that prompts the user to input the length of one side and the lengths of both diagonals of a rhombus and calculates both its area and perimeter.

**Provide the code for this program and a sample output for a side length of 5.7 units, diagonal 1 length of 9.2 units, and diagonal 2 length of 7.8 units.** Display the units of measurement for both the area and perimeter in the output statement.

### Problem: 2

Calculate the displacement of an object in free fall using the following formula:

$$d = (1/2) * g * t^2$$

Where:

- **d represents the displacement.**
- **g is the acceleration due to gravity (approximately 9.81 m/s<sup>2</sup>).**
- **t is the time in seconds.**

Write a C program that prompts the user to enter the time (in seconds) and calculates and displays the displacement of the object in meters.

**Provide the code for this program and a sample output for a time of 3.5 seconds.** Display the unit of measurement for displacement in the output statement.