



Military College of Signals
CS110- Fundamentals of Programming
Assignment # 4
(CLO- 3, 10 Marks)

- **This is an individual assignment.**

Submission Date: 8th January 2025 (1100 hrs)

Question No 1:

Build a program with overloaded function **computeVolume** that calculates volume of :

- A cube (takes one argument).
- A rectangular prism (takes three arguments: length, width, height).
- A cylinder (takes two arguments: radius and height).

Question No 2:

Build a program that defines overloaded functions **calculateAverage**:

- To calculate the average of two integers.
- To calculate the average of three floating-point numbers.
- To calculate the average of a list of number

Question No 3:

Build a program with a function **calculateSalary** that:

- Accepts an employee's base salary and calculates the final salary
- Overloads to accept additional arguments for overtime pay(5% of base pay for each additional hour, number of additional hours, and bonus)

Assume a default 10% bonus if no bonus argument is provided.

Question No 4:

Build a program with overloaded functions named **calculateInterest** to:

- Calculate simple interest:

$$SI = P \cdot R \cdot T$$

where,

SI = Simple Interest

P = Principal amount

R = Rate of Interest

T = Time in months for which interest is calculated

- Calculate compound interest:

$$CI = P (1 + R)^T$$

where,

CI = Compound Interest

P = Principal Amount

And T = Number of months for which interest is calculated

Provide default values for the rate of interest $R=0.05$, $T= 12$ months.

Question No 5:

Write a function **sumSeries** that:

- Calculates the sum of all numbers in a range (start and end provided).
- Overloads to accept a step value (e.g. sum of every 2nd number) with a default step of 1.