

# CSE 112 : Object Oriented Programming Lab

## Lab - 7

Intake 52  
**Section - 3**

February 15, 2024

### Lab Tasks

#### Task 1

- Develop a class "**Product**" with private attributes for name, price, and quantity.
- Implement constructors for default and parameterized cases.
- Include getter functions for product details.
- Create a method to calculate the total cost of products.
- In the main function, create "**Product**" objects, set their details, calculate the total cost, and display the result.

#### Task 2

- Create a class "**Temperature**" with private attributes for temperature in Celsius and Fahrenheit.
- Implement constructors to initialize temperatures.
- Include getter and setter functions for both Celsius and Fahrenheit.
- Implement a method to convert Celsius to Fahrenheit and another to convert Fahrenheit to Celsius.
- In the main function, create "**Temperature**" objects, set temperatures, perform conversions, and display the results.

#### Task 3

- Create a class named "**Point**" with private data members for x and y coordinates.
- Implement a constructor to initialize these coordinates.
- Define a friend function named "**calculateDistance**" that takes two "**Point**" objects as parameters.
- The friend function calculates the distance between the two points using the formula:  
$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}.$$
- In the main function:
  - Create two "**Point**" objects.
  - Set their coordinates using the constructor.

- Use the friend function `"calculateDistance"` to compute the distance between the points.
- Display the calculated distance.