COURSE: (CL-1004) OBJECT ORIENTED PROGRAMMING LAB
LAB TASK # 08

NOTE:
Only submit .cpp file of each question in a folder. Anyone who submits any other format file will get straight **ZERO.** Each question should have a separate .cpp file. Copy Paste or other UFM will also get **ZERO**. Use the following format for naming the folder Roll#_Name (P18-1234_NAME).

Q No.1: Rectangle Class

Create a class named 'Rectangle' with two floating point data members - length and breadth. The class has three constructors which are :

- having no parameter - values of both length and breadth are assigned zero.
- having two numbers as parameters - the two numbers are assigned as length and breadth respectively.
- having one number as parameter - both length and breadth are assigned that number.

The class has the following member functions:

- float **area()** to calculate and return the area of the rectangle.
- void **show()** to display the length and width of the rectangle
- int **sameArea(Rectangle)** that has one parameter of type Rectangle. **sameArea** returns 1 if the two Rectangles have the same area, and returns 0 if they don't.

Finally, add a destructor that will display an appropriate message when called.

Write the definitions for each of the above member functions.

1. Create objects of the 'Rectangle' class having none, one and two parameters and print their areas.
2. Create two more rectangle objects. Set the length and width of the first rectangle to 5 and 2.5. Set the length and width of the second rectangle to 5 and 18.9. Display each rectangle and its area.
3. Check whether the two Rectangles have the same area and print a message indicating the result.

Q No.2: SecretType Class

Write the definition of a class that has the following properties:

1. The name of the class is secretType.

2. The class secretType has four member variables:
    a. name of type string,
    b. age of type int
    c. weight of type int
    d. and height of type double.

3. The class secretType has the following member functions.

    a. print—outputs the data stored in the member variables with the appropriate titles
    b. setName—function to set the name
    c. setAge—function to set the age
    d. setWeight—function to set the weight
    e. setHeight—function to set the height
    f. getName—value-returning function to return the name
    g. getAge—value-returning function to return the age
    h. getWeight—value-returning function to return the weight
    i. getHeight—value-returning function to return the height
    j. constructor—with default parameters: The default value of name is the empty string " ", and the default values of age, weight, and height are 0.
    k. constructor—with parameters
4. Write the definition of the member functions of the class secretType,

Q No.3: TimeType Class

Create a class called **timeType** that has separate int member data for hours, minutes, and seconds. One constructor should initialize this data to 0, and another should initialize it to fixed values. Another member function should display it, in 11:59:59 format. The final member function should add two objects of type time passed as arguments.

A main() program should create two initialized time objects and one that isn't initialized. Then it should add the two initialized values together, leaving the result in the third time variable.

Finally it should display the value of this third variable.