

**CSEN3113**  
**Day 3**  
**Assignment**

1. Write a C++ program to make a class overloaded with the following specification:
  - a. Area(int)                   :-       to calculate area of square
  - b. Area(int,int)            :-       to calculate area of rectangle
  - c. Area(float)             :-       to calculate area of circle

Make the program menu based using proper functions.

2. Create a class Student having following data members.

Collegeid (int)  
FirstName ( string)  
MiddleName( string)  
LastName(string)  
count (static int)

Using the concept of dynamic object, live object and constructor overloading accept 5 student information and display it. Member counter will display total no of students.

3. Write two different classes A and B. Each of them have private data member data1, data2 respectively. Write a function **addBoth( )** to add the values contained in data1 and data2. //Friend Function
4. WAP to implement two classes Employee and Boss. Boss has the capability to increase the salary (Employee has a variable named salary) of the Employee. //Friend Class
5. Consider a toll-booth at a bridge. Cars passing by the booth are expected to pay Rs. 10 in cash as toll. Mostly they do but sometimes a car goes by without paying. The toll-booth keeps track of the number of cars that have gone by, and the amount of cash collected. Model this toll-booth using a class called **tollBooth**, having member data called **totalCars** (of type integer for total number of cars passed) and **totalCash** (of type double for total amount of cash collected). Use a constructor to initialize both data members to zero. A member function called **nopayCar()** increases the car count only, while another member function **payingCar()** increases both the car count and the cash total. There is another member function called **display()** shows the car count, the cash total, and the total number of non-paying cars.

Write a program to test this class using three menu options as follows:

1. The user enters 0 for each non-paying car.
2. The user enters 1 for each paying car.
3. The user enters 9 for displaying the total number of cars, the total cash collected, the total number of non-paying cars, and then exit.