# CS1580 - Lab 12

## 1. Topics

This week you'll implement Classes, public and private members

## 2. Task

A Complex number has two components: a real part and an imaginary part. We can express a complex number C as (a, bi). If $C_1 = (a_1, b_1 i)$ and $C_2 = (a_2, b_2 i)$ are two complex numbers then their sum is $C_1 + C_2 = (a_1 + a_2 , (b_1 + b_2)i)$

In this assignment, implement a class named 'Complex' that has the following **private** members:

- float real
- float imaginary

The class has the following **public** member functions:

- **void set(float real, float imaginary)** to set the specified value in an object
- **void display()** to display complex number object
- **complex sum(complex C)** to sum two complex numbers & return complex number

In main,

- Create two Complex class objects $C_1, C_2$ by taking real and imaginary numbers from the user
- Call the function **set(float, float)** to set the two complex numbers
- Call **display()** to print both the numbers
- Create another class object $C_3$ to compute the sum of $C_1$ and $C_2$ as follows,

$$C_3 = C_1.sum(C_2)$$

- Finally, call **display()** to print the result

NOTE: Implement the task in one file

## 3. Sample output:

```
Enter the real part of the first complex number: 2
Enter the imaginary part of the first complex number: 3
The first complex number is: (2 , 3i)
Enter the real part of second complex number: 5
Enter the imaginary part of the second complex number: 6
The second complex number is: (5 , 6i)
After adding the two complex numbers, the result is (7 , 9i)
```