

Lab # 5

Create a program for manipulating complex numbers -- numbers that have the form $\text{realPart} + \text{imaginaryPart} * i$, where i represents the square root of -1 . The program should include the following:

- A Complex class that represents the real and imaginary parts in private floating-point variables
- A constructor that initializes the private floating-point variables
- public get methods that return the real and imaginary parts
- A public add(Complex c) method that separately adds the real parts of the current and c argument Complex objects together, and the imaginary parts of both objects together
- A public subtract(Complex c) method that separately subtracts the real part of the c-referenced Complex object from the current Complex object, and the imaginary part of the c-referenced Complex object from the current Complex object
- A public print() method that prints the contents of the current Complex object using the format (a, b) -- where a represents the real part and b represents the imaginary part

The following listing provides source code to a UseComplex application. Write the implementation of class Complex.

```
class UseComplex
{
    public static void main (String [] args)
    {
        Complex c1 = new Complex (2.0, 5.0); // 2.0 + 5.0i
        Complex c2 = new Complex (-3.1, -6.3); // -3.1 - 6.3i

        c1.add (c2); // c1 is now -1.1 - 1.3
        c1.print ();
        c2.subtract(c1);
        c2.print ();
    }
}
```