**Week-7**

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IT PCC-CS593 L - OBJECT ORIENTED PROGRAMMING LAB

COMPLEX\_NUMBER

1. Create an overloaded complex class to implement complex addition, subtraction, multiplication, division, finding argument of the complex number, initialization-using constructor, complex assignments etc.

package com.randrita.week7;  
  
import java.sql.SQLOutput;  
  
public class Complex {  
 int realNumber,imaginaryNumber;  
  
 Complex(int realNumber,int imaginaryNumber){  
 this.realNumber=realNumber;  
 this.imaginaryNumber=imaginaryNumber;  
 }  
  
 public static void main(String[] args) {  
 Complex number1 = new Complex(5,10);  
 Complex number2 = new Complex(2,5);  
 Complex Add,Sub,Multi,Div;  
  
 Add=*add*(number1,number2);  
 Sub=*sub*(number1,number2);  
 Multi=*multiplication*(number1,number2);  
 Div=*division*(number1,number2);  
  
 System.*out*.printf("Addition of two complex numbers is = %d+%di\n",Add.realNumber,Add.imaginaryNumber);  
 System.*out*.printf("Subtraction of two complex numbers is = %d+%di\n",Sub.realNumber,Sub.imaginaryNumber);  
 System.*out*.printf("Multiplication of two complex numbers is = %d+%di\n",Multi.realNumber,Multi.imaginaryNumber);  
 System.*out*.printf("Division of two complex numbers is = %d+%di\n",Div.realNumber,Div.imaginaryNumber);  
 }  
  
 public static Complex add(Complex number1, Complex number2){  
 Complex temp = new Complex(0,0);  
  
 temp.realNumber= number1.realNumber+ number2.realNumber;  
 temp.imaginaryNumber=number1.imaginaryNumber+number2.imaginaryNumber;  
  
 return(temp);  
 }  
  
 public static Complex sub(Complex number1, Complex number2){  
 Complex temp = new Complex(0,0);  
  
 temp.realNumber= number1.realNumber- number2.realNumber;  
 temp.imaginaryNumber=number1.imaginaryNumber-number2.imaginaryNumber;  
  
 return(temp);  
 }  
  
 public static Complex multiplication(Complex number1, Complex number2){  
 Complex temp = new Complex(0,0);  
  
 temp.realNumber= (number1.realNumber\*number2.realNumber)-(number1.imaginaryNumber \*number2.imaginaryNumber );  
 temp.imaginaryNumber=(number1.realNumber\* number2.imaginaryNumber)+(number1.imaginaryNumber\*number2.realNumber);  
  
 return(temp);  
 }  
  
 public static Complex division(Complex number1, Complex number2){  
 Complex temp = new Complex(0,0);  
  
 int a= number1.realNumber;  
 int b= number1.imaginaryNumber;  
 int c=number2.realNumber;  
 int d=number2.imaginaryNumber;  
  
 temp.realNumber=((a\*c)+(b\*d))/((c\*c)+(d\*d));  
 temp.imaginaryNumber=((b\*c)-(a\*d))/((c\*c)+(d\*d));  
  
 return(temp);  
  
 }  
}

**Output:**

