Practice Problems

1.Assign and print the roll number, phone number and address of two students having names "Sam" and "John" respectively by creating two objects of class 'Student'.

```
import java.util.Scanner;

public class Student {
    int roll;
    long phone;

    Student(int r,long p){
        roll = r;
        phone = p;
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        Student Sam = new Student(101,9374827132L);
        Student John = new Student(78,8046638274L);

        //Printing values
        System.out.println("Sam's roll number: "+ Sam.roll);
        System.out.println("Sam's phone number: "+
Sam.phone);
        System.out.println("John's roll number: "+ John.roll);
        System.out.println("John's phone number: "+
John.phone);
    }
}
```

2. Print the sum, difference and product of two complex numbers by creating a class named 'Complex' with separate methods for each operation whose real and imaginary parts are entered by user.

```
public class Complex {
    double real, imag;

    Complex(double r, double i) {
        real = r;
        imag = i;
    }

    static Complex add(Complex c1, Complex c2) {
        Complex c3 = new Complex(c1.real+c2.real,
c1.imag+c2.imag);
        return c3;
    }

    static Complex sub(Complex c1, Complex c2) {
        Complex c3 = new Complex(c1.real-c2.real, c1.imag-
c2.imag);
        return c3;
    }

    static Complex multiply(Complex c1, Complex c2) {
        double realPart = (c1.real*c2.real)-
(c1.imag*c2.imag);
        double imagPart = (c1.real*c2.real)+
(c1.imag*c2.imag);
        Complex c3 = new Complex(realPart, imagPart);
        return c3;
    }
```

```
    void print() {
        if(real==0 && imag !=0)
            System.out.println(imag+"i");
        else if(imag==0)
            System.out.println(real);
        else
            System.out.println(real +" + "+imag+"i");
    }

    public static void main(String[] args) {
        Complex c1 = new Complex(3,2);      //Change the
values and try out
        Complex c2 = new Complex(4.1,5.2);

        Complex sum = add(c1, c2);
        Complex diff = sub(c1, c2);
        Complex product = multiply(c1, c2);

        sum.print();
        diff.print();
        product.print();
    }
}
```

3. Write a program by creating an 'Employee' class having the following methods and print the final salary.

- 'getInfo()' which takes the salary, number of hours of work per day of employee as parameter

- 'AddSal()' which adds Rs 1000 to salary of the employee if it is less than 10000.

- 'AddWork()' which adds Rs 500 to salary of employee if the number of hours of work per day is more than 6 hours.

```
public class Employee {
    double hours, salary;

    void getInfo(double h, double s) {
        hours = h;
        salary = s;
    }

    void addSal() {
        if(salary < 10000)
            salary += 1000;
    }

    void addWork() {
        if(hours > 6)
            salary += 500;
    }

    public static void main(String[] args) {
        Employee aman = new Employee();
        aman.getInfo(8, 7000 ); //Change the values and try
out
        aman.addSal();
        aman.addWork();
        System.out.println("Aman's salary : "+aman.salary);
    }
}
```