ASSIGNMENT – 2

Program 5 :

Source Code :

```
7@mcaserver:~/oops/cyc2$ cat Product.java
 java.util.Scanner;
 class Product{
  String pcode,pname;
  double price;
  public Product(String pcode, String pname, double price){
          this.pcode=pcode;
          this.pname=pname;
          this.price=price;
  }
  public static Product getLowestPrice(Product items[]){
          Product lowest=items[0];
          for(int i=1;i<items.length;i++){
                  if(items[i].price<lowest.price) lowest=items[i];
          }
          return lowest;
  }
  public void display(){
          System.out.println("Product code: "+this.pcode+"\nProduct name: "+this.pname+"\nPrice: "+price);
  }
  public static void main(String args[]){
          Scanner s=new Scanner(System.in);
          System.out.println("Enter number of products: ");
          int n=s.nextInt();
          Product items[]=new Product[n];
          for(int i=0;i<n;i++){
                  System.out.println("Enter product code of product "+i+": ");
                  String pcode=s.next();
                  System.out.println("Enter product name of product "+i+": ");
                  String pname=s.next();
                  System.out.println("Enter price of product "+i+": ");
                  double price=s.nextDouble();
                  items[i]= new Product(pcode,pname,price);
          }
          Product lowest=Product.getLowestPrice(items);
          System.out.println("Item with lowest Price : ");
          lowest.display();
  }
```

Output :

```
}
24mca27@mcaserver:~/oops/cyc2$ java Product
Enter number of products:
2
Enter product code of product 0:
234
Enter product name of product 0:
pen
Enter price of product 0:
10
Enter product code of product 1:
235
Enter product name of product 1:
pencil
Enter price of product 1:
5
Item with lowest Price :
Product code: 235
Product name: pencil
Price: 5.0
24mca27@mcaserver:~/oops/cyc2$
```

Program 6 :

Source Code :

```
24mca27@mcaserver:~/oops/cyc2$ cat Complex.java
import java.util.Scanner;
public class Complex{
        double real,imag;
        public Complex(double real, double imag){
                this.real=real;
                this.imag=imag;
        }
        public Complex add(Complex other){
                double real=this.real+other.real;
                double imag=this.imag+other.imag;
                Complex sum=new Complex(real,imag);
                return sum;
        }
        public Complex multiply(Complex other){
                double real=(this.real*other.real)-(this.imag*other.imag);
                double imag=(this.real*other.imag)+(this.imag*other.real);
                Complex pro=new Complex(real,imag);
                return pro;
        }
        public void display(){
                System.out.println(this.real+" + i"+this.imag);
        }
        public static void main(String args[]){
                Scanner s=new Scanner(System.in);
                System.out.println("Enter two complex numbers:");
                System.out.println("Enter real part:");
                double real1=s.nextDouble();
                System.out.println("Enter imaginary part:");
                double imag1=s.nextDouble();
                Complex c1=new Complex(real1,imag1);
                System.out.println("Enter real part:");
                double real2=s.nextDouble();
                System.out.println("Enter imaginary part:");
                double imag2=s.nextDouble();
                Complex c2=new Complex(real2,imag2);
                Complex sum=c1.add(c2);
                Complex pro=c1.multiply(c2);
                System.out.print("Complex no 1: ");
                c1.display();
                System.out.print("Complex no 2: ");
                c2.display();
                System.out.print("Sum: ");
                sum.display();
                System.out.print("Product: ");
                pro.display();
        }
}
24mca27@mcaserver:~/oops/cyc2$
```

Output :

```
24mca27@mcaserver:~/oops/cyc2$ java Complex
Enter two complex numbers:
Enter real part:
2
Enter imaginary part:
4
Enter real part:
3
Enter imaginary part:
5
Complex no 1: 2.0 + i4.0
Complex no 2: 3.0 + i5.0
Sum: 5.0 + i9.0
Product: -14.0 + i22.0
```

Program 7 :

Source Code :

```
24mca27@mcaserver:~/oops/cyc2$ cat MatrixAddition.java
import java.util.Scanner;
public class MatrixAddition{
        public static void main(String args[]){
                Scanner s=new Scanner(System.in);
                System.out.println("Enter the number of rows and coloumns of first matrix: ");
                int m1=s.nextInt();
                int n1=s.nextInt();
                int mat1[][]=new int[m1][n1];
                System.out.println("Enter the first matrix: ");
                for(int i=0;i<m1;i++){
                        for(int j=0;j<n1;j++) mat1[i][j]=s.nextInt();
                }
                System.out.println("Enter the number of rows and coloumns of second matrix: ");
                int m2=s.nextInt();
                int n2=s.nextInt();
                int mat2[][]=new int[m2][n2];
                System.out.println("Enter the second matrix: ");
                for(int i=0;i<m2;i++){
                        for(int j=0;j<n2;j++) mat2[i][j]=s.nextInt();
                }
                int sum[][]=new int[m1][n1];
                if(m1==m2 && n1==n2){
                        for(int i=0;i<m1;i++){
                                for(int j=0;j<n1;j++) sum[i][j]=mat1[i][j]+mat2[i][j];
                        }
                        System.out.println("Sum: ");
                        for(int i=0;i<m1;i++){
                                for(int j=0;j<n1;j++) System.out.print(sum[i][j]+"\t");
                                System.out.println();
                        }
                }
                else System.out.println("Addition is not possible.");
        }
}
```

Output :

```
24mca27@mcaserver:~/oops/cyc2$ java MatrixAddition
Enter the number of rows and coloumns of first matrix:
2
2
Enter the first matrix:
34
24
14
4
Enter the number of rows and coloumns of second matrix:
2
2
Enter the second matrix:
36
26
16
6
Sum:
70      50
30      10
```