Solution of Assignment 2

Question 1.

```
import java.util.*;
class Person
{
	String name;
	int age;
	public void setData()
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter the name: ");
		this.name = sc.next();
		System.out.println("Enter the age: ");
		this.age = sc.nextInt();
	}
	public void display()
	{
		System.out.println(this.name+" "+this.age);
	}
}
public class Q1
{
	public static void main(String[] args)
	{
		Person p1 = new Person();
		p1.name = "Rohan";
		p1.age = 20;
		Person p2 = new Person();
		p2.setData();
		p1.display();
		p2.display();
		if(p1.age<p2.age)
			System.out.println(p1.name+" is younger than "+p2.name);
		else
			System.out.println(p2.name+" is younger than "+p1.name);
	}
}
```

Question 2.

```
import java.util.*;
class Complex
{
            int real, image;
             public void set_data()
             {
                   Scanner sc = new Scanner(System.in);
                this.real = sc.nextInt();
                this.image = sc.nextInt();
             }
             public void display()
             {
                System.out.println(this.real + " + i" + this.image);
             }
             public Complex add(Complex c1, Complex c2)
             {
                   Complex res = new Complex();
                   res.real = c1.real + c2.real;
                   res.image = c1.image +c2.image;
                   return res;
      }
}
public class Q2
{
         public static void main(String[] args)
         {
                   Complex c1 = new Complex();
                     Complex c2 = new Complex();
                     System.out.print("Enter the real and imaginary value of first Complex
number: ");
                     c1.set_data();
                     System.out.print("Enter the real and imaginary value of second Complex
number: ");
                c2.set_data();
                System.out.print("first Complex number: ");
                c1.display();
                System.out.print("Second Complex number: ");
                c2.display();
```

```
            Complex res = new Complex();
            res = res.add(c1, c2);
            System.out.print("Addition is :");
            res.display();
        }
}
```

Question 3.

```
import java.util.*;

class Product
{
        int prodID, price, quantity;
        static int tot_price;
        public Product(int pid, int p, int q)
        {
                this.prodID = pid;
                this.price = p;
                this.quantity = q;
                tot_price += this.price;
        }
        public void display()
        {
                System.out.println(this.prodID+"\t\t"+this.price+"\t\t"+this.quantity);
        }
}
public class Q3
{
        public static void main(String[] args)
        {
                Scanner sc = new Scanner(System.in);
                Product p[] = new Product[5];
                for(int i = 0;i<5;i++)
                {
                        System.out.println("Enter the product id, price, and quantity: ");
                        int pid = sc.nextInt();
                        int price = sc.nextInt();
                        int quantity = sc.nextInt();
```

```
                p[i] = new Product(pid,price,quantity);
            }
            System.out.println("All information:\nProduct ID   Price");
            for(int i = 0;i<5;i++)
                p[i].display();
            System.out.println("Total price is: "+Product.tot_price);

        }
}
```

Question 4.

```
import java.util.Scanner;

class Deposit {
        long principal;
        int time;
        double rate, total_amount;
        public Deposit()
        {
                principal = 0;
                time = 0;
                rate = 0;
        }
        public Deposit(long p,int t,double d)
        {
                principal = p;
                time = t;
                rate = d;
        }
        public Deposit(long p,int t)
        {
                principal = p;
                time = t;
                rate = 5;
        }
        public Deposit(long p,double d)
        {
                principal = p;
```

```
		time = 2;
		rate = d;
	}
	public void calAmt()
	{
		total_amount = principal + (principal*time*rate)/100;
	}
	public void display()
	{
		System.out.println("Your principal is: "+principal);
		System.out.println("Loan time: "+time);
		System.out.println("Rate of interest: "+rate);
		System.out.println("Total payable amount: "+total_amount);
	}
}
public class Q4
{
	public static void main(String[] args)
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Output for first object");
		Deposit d = new Deposit(1000,2,3);
		d.calAmt();
		d.display();
		System.out.println("Output for second object");
		Deposit d1 = new Deposit(2000,6.0);
		d1.calAmt();
		d1.display();
	}
}
```

Question 5.

```
import java.util.*;

class Person
{
	String name;
	int age;
```

```
	Person(String name, int age)
	{
		this.name = name;
		this.age = age;
	}
}
class Employee extends Person
{
	int eID, salary;
	public Employee(String name, int age, int eID, int salary)
	{
		super(name, age);
		this.eID = eID;
		this.salary = salary;
	}
	public void empDisplay()
	{
		System.out.println("*********Employee details***********");
		System.out.println("Name: "+this.name);
		System.out.println("Age: "+this.age);
		System.out.println("Employee ID: "+this.eID);
		System.out.println("Salary: "+this.salary);
	}
}
class Q5
{
	public static void main(String[] args)
	{
	Employee e = new Employee("sankar",20, 1001, 20000);
	e.empDisplay();
	}
}
```

Question Q6.

```
import java.util.*;
abstract class Marks
{
	int markICP, markDSA;
```

```
	double percentage;
	public Marks(int markICP, int markDSA)
	{
		this.markICP = markICP;
		this.markDSA = markDSA;
	}
	public abstract double getPercentage();
}
class CSE extends Marks
{
	int algoDesign;
	public CSE(int markICP, int markDSA, int algoDesign)
	{
		super(markICP, markDSA);
		this.algoDesign = algoDesign;
	}
	public double getPercentage()
	{
		return (this.markICP+this.markDSA+this.algoDesign)/3.0;
	}
}
class Non_CSE extends Marks
{
	int enggMechanics;
	public Non_CSE(int markICP, int markDSA, int enggMechanics)
	{
		super(markICP, markDSA);
		this.enggMechanics = enggMechanics;
	}
	public double getPercentage()
	{
		return (this.markICP+this.markDSA+this.enggMechanics)/3.0;
	}
}
class Q6
{
	public static void main(String[] args)
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Object of CSE student");
```

```
                System.out.println("Enter the marks of ICP, DSA, and Algorithm: ");
                int ICP = sc.nextInt();
                int DSA = sc.nextInt();
                int AD = sc.nextInt();
                CSE c = new CSE(ICP, DSA, AD);
                System.out.println("Percentage: "+c.getPercentage());
                System.out.println("Object of Non-CSE student");
                System.out.println("Enter the marks of ICP, DSA, and Mechanics: ");
                ICP = sc.nextInt();
                DSA = sc.nextInt();
                int M = sc.nextInt();
                Non_CSE nc = new Non_CSE(ICP, DSA, M);
                System.out.println("Percentage: "+nc.getPercentage());
        }
}
```

Question 7.

```
import java.util.*;
interface DetailInfo
{
        void count();
        void display();
}
class Person
{
        String name;
        static int maxCount = 0;
        public Person(String name)
        {
                this.name = name;
        }
        public void count()
        {
                maxCount = this.name.length();
        }
        public void display()
        {
                System.out.println("Your name: "+this.name);
```

```
                System.out.println("Number of character present: "+maxCount);
        }
}
public class HelloWorld
{
        public static void main(String[] args)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter a name");
                String name = sc.nextLine();
                Person p = new Person(name);
                p.count();
                p.display();
        }
}
```

Question Q8.

Question 1.

```
import java.util.*;
class Commission
{
        int sales;
        public Commission(int sales)
        {
                this.sales = sales;
        }
        public double getCommission()
        {
                if(this.sales<=100)
                        return this.sales*0.02;
                else if(this.sales>100 && this.sales<=5000)
                        return this.sales*0.05;
                else
                        return this.sales*0.08;
        }
```

```
}

public class Demo
{
	public static void main(String[] args)
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter the sales amount: ");
		int sales = sc.nextInt();
		Commission C = new Commission(sales);
		double com = C.getCommission();
		if(com<0)
			System.out.println("Invalid Input");
		else
			System.out.println("Commission: "+com);
	}
}
```

Question 2.

```
import java.util.*;

class Book
{
	String BName, BEdition;
	int BPrice;
	public Book(String BName, String BEdition, int BPrice)
	{
		this.BName = BName;
		this.BEdition = BEdition;
		this.BPrice = BPrice;
	}
	public void display()
	{
		System.out.println(this.BName+"\t"+this.BEdition+"\t"+this.BPrice);
	}
}
class HQ2
 {
```

```
	public static void main(String[] args)
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("How many book you want to buy: ");
		int n = sc.nextInt();
		Book b[] = new Book[n];
		for(int i = 0;i<n;i++)
		{
			sc.nextLine();
			System.out.println("Enter the book name, edition, and price ");
			String name = sc.nextLine();
			String edition = sc.nextLine();
			int price = sc.nextInt();
			b[i] = new Book(name, edition, price);
		}
		System.out.println("*******Book information*******");
		System.out.println("Book name \t edition \t price ");
		for(int i = 0;i<n;i++)
		{
			b[i].display();
		}
		int index = 0;
		for(int i = 1;i<n;i++)
		{
			if(b[index].BPrice<b[i].BPrice)
				index = i;
		}
		System.out.println("Book details with highest price ");
		b[index].display();
	}
}
```

Question 3.

```
import java.util.*;

class Bank
{
	String bankName;
```

```
	int depositAmount;
	static int totalAmount;
	public Bank()
	{
		this.bankName = "";
		this.depositAmount = 0;
	}
	public void setBankName(String bankName)
	{
		this.bankName = bankName;
	}
	public void setAmount(int depositAmount)
	{
		if(depositAmount>=1000)
		{
			this.depositAmount = depositAmount;
		}
		else
		{
			this.depositAmount = 0;
			System.out.println("Balance not credited due to low balance");
		}
		totalAmount += this.depositAmount;
	}
	public void showData()
	{
		System.out.println(this.bankNname+"\t"+this.depositAmount);
	}
	public int bankDetails(Bank[] b)
	{
		int index = 0;
		for(int i = 1;i<b.length;i++)
		 {
			if(b[index].depositAmount>b[i].depositAmount)
				index = i;
		 }
		return index;
	}
}
class HQ3
```

```
{
	public static void main(String[] args)
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("How many account you want to create: ");
		int n = sc.nextInt();
		Bank b[] = new Bank[n];
		for(int i = 0;i<n;i++)
		{
			sc.nextLine();
			System.out.println("Enter the bank name, and deposit amount
(minimum amount 1000)");
			String name = sc.nextLine();
			int amount = sc.nextInt();
			b[i] = new Bank();
			b[i].setBankName(name);
			b[i].setAmount(amount);
		}
		System.out.println("*******Book information*******");
		System.out.println("Bank name \t Amount ");
		for(int i = 0;i<n;i++)
		{
			b[i].showData();
		}
		System.out.println("TotalAmount deposit by the person is
"+Bank.totalAmount);
		int index = b[0].bankDetails(b);
		System.out.println("Bank details with minimum deposit amount ");
		b[index].showData();
	}
}
```

Question Q3.

```
class Distance
{
	double meters, centimeters;
	public Distance()
	{
```

```
		this.meters = 0;
		this.centimeters = 0;
	}
	public Distance(double meters, double centimeters)
	{
		this.meters = meters;
		this.centimeters = centimeters;
	}
	public Distance add(Distance d1, Distance d2)
	{
		Distance d3 = new Distance();
		d3.meters = d1.meters + d2.meters;
		d3.centimeters = d1.centimeters + d2.centimeters;
		if(d3.centimeters>=100)
		{
			d3.meters += (int)(d3.centimeters/100);
			d3.centimeters = d3.centimeters%100;
		}
		return d3;
	}
	public void display()
	{
	System.out.println(this.meters+"  "+this.centimeters);
	}
}
public class HQ4
{
	public static void main(String[] args)
	{
		Distance d1 = new Distance(5, 70);
		Distance d2 = new Distance(15, 50);
		Distance d3 = new Distance();
		d3 = d3.add(d1,d2);
		d1.display();
		d2.display();
		d3.display();
	}
}
```