Assignment No:-7

Name:-Suryawanshi Sangramsingh Sambhaji

Batch: - Delta - DCA (Java) 2024 Date:-8/5/2024

1. Write a Java program that prints all palindrome numbers between 1 and n.

```
import java.util.*;
public class PrintPalindromeNumToNNumber
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter First number:");
                int first = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Enter Last number:");
                int last = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Palindrome number "+first+" To "+last+" is :");
                System.out.println("-------------------------");
                int i=first;
                do
                {
                        int rem=0,rev=0,temp=i;
                        do
                        {
                                rem=temp%10;
                                rev=(rev*10)+rem;
                                temp=temp/10;
                        }while(temp!=0);
                        if(rev==i)
                        {
                                System.out.print(" "+rev);
                        }
                i++;
                }while(i<=last);
                System.out.println("\n-------------------------");
        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac PrintPalindromeNumToNNumber.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PrintPalindromeNumToNNumber
Enter First number:
10
------------------------
Enter Last number:
100
------------------------
Palindrome number 10 To 100 is :
------------------------
 11 22 33 44 55 66 77 88 99
------------------------
```

2. Develop a Java program to print all Armstrong numbers in the range from user.

```
import java.util.*;
public class PrintArmstrongNumToNNumber
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter First number:");
                int first = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Enter Last number:");
                int last = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Armstrong number "+first+" To "+last+" is :");
                System.out.println("-------------------------");
                int i=first;
                do
                {
                        int rem=0,rev=0,temp=i;
                        do
                        {
                                rem=temp%10;
                                rev+=(rem*rem*rem);
                                temp=temp/10;
                        }while(temp!=0);
                        if(rev==i)
                        {
                                System.out.print(" "+rev);
                        }
                i++;
                }while(i<=last);
                System.out.println("\n-------------------------");
        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac PrintArmstrongNumToNNumber.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PrintArmstrongNumToNNumber
Enter First number:
1
-------------------------
Enter Last number:
1000
-------------------------
Armstrong number 1 To 1000 is :
-------------------------
 1 153 370 371 407
-------------------------
```

3. Create a Java program to print all prime numbers between 10 and n.

```
import java.util.*;
public class PrintPrimeNumToNNumber
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter First number:");
                int first = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Enter Last number:");
                int last = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Prime number "+first+" To "+last+" is :");
                System.out.println("-------------------------");
                int i=first;
                do
                {
                        int c=0,j=1;
                        do
                        {
                                if(i%j==0)
                                {
                                        c++;
                                }
                        j++;
                        }while(j<=i);
                        if(c==2)
                        {
                                System.out.print(" "+i);
                        }
                i++;
                }while(i<=last);
        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assignment_Java_Codenera>javac PrintPrimeNumToNNumber.java

C:\Users\Shree\Desktop\Assignment_Java_Codenera>java PrintPrimeNumToNNumber
Enter First number:
10
-------------------------
Enter Last number:
100
-------------------------
Prime number 10 To 100 is :
-------------------------
 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97
```

4. Write a Java program that takes a number as input from the user and prints its reverse.

```
import java.util.*;
public class PrintReverseNumOfNNumber
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter n number:");
                int n = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Reverse number "+n+" is :");
                System.out.println("-------------------------");
                int rem=0,rev=0;
                do
                {
                        rem=n%10;
                        n=n/10;
                System.out.print(" "+rem);
                }while(n!=0);

        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac PrintReverseNumOfNNumber.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PrintReverseNumOfNNumber
Enter n number:
1234
------------------------
Reverse number 1234 is :
------------------------
 4 3 2 1
```

5. Implement a Java program that takes a 5-digit number from the user. Search for a specific number within it, and if found, print its count.

```
import java.util.*;
public class SearchSpecifiedNum
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter n digit number:");
                int n = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Enter Specified number:");
                int n1 = sc.nextInt();
                System.out.println("-------------------------");
                int rem=0,rev=0,count=0;
                do
                {
                        rem=n%10;
                        n=n/10;
                                if(rem==n1)
                                {
                                        count++;
                                }
                }while(n!=0);
                System.out.print("Given Specified Number is: "+n1+" And it's count is "+count);
                        System.out.println("\n-------------------------");

        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac SearchSpecifiedNum.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java SearchSpecifiedNum
Enter n digit number:
123444
-------------------------
Enter Specified number:
4
-------------------------
Given Specified Number is: 4 And it's count is 3
-------------------------
```

6. Write a Java program that takes a number from the user and prints the Fibonacci series up to that number.

```
import java.util.*;
public class FindFibonaciNumToNNum
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter First number:");
                int n = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Enter last number:");
                int n1 = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Fibonaci number:");
                System.out.println("-------------------------");
                int a=0,b=1,sum=0;
                do
                {
                        System.out.print(" "+a);
                        sum=a+b;
                        a=b;
                        b=sum;
                n++;
                }while(n<=n1);
                System.out.println("\n-------------------------");

        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac FindFibonaciNumToNNum.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java FindFibonaciNumToNNum
Enter First number:
1
-------------------------
Enter last number:
10
-------------------------
Fibonaci number:
-------------------------
 0 1 1 2 3 5 8 13 21 34
-------------------------
```

7. Write a program to input basic salary of an employee and calculate its Gross salary according to following:

Basic Salary <= 10000: HRA = 20%, DA = 80%

Basic Salary <= 20000: HRA = 25%, DA = 90%

Basic Salary > 20000: HRA = 30%, DA = 95%.

```
import java.util.*;
public class CalculateGrossSalary
{
	public static void main(String[]ar)
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter Your salary:");
		int n = sc.nextInt();
		System.out.println("-------------------------");
		int gsal=0;
		if(n<=10000)
		{
			gsal=(n*20)/100;
			int hra=gsal;
			System.out.println("Including HRA Remaing salary is :"+hra);
			gsal=(n*80)/100;
			int da=gsal;
			System.out.println("Including DA Remaing salary is :"+da);
			System.out.println("Including HRA and DA total salary is :"+(hra+da));
		}
		else if(n>10000 && n<=20000)
		{
			gsal=(n*25)/100;
			int hra=gsal;
			System.out.println("Including HRA Remaing salary is :"+hra);
			gsal=(n*90)/100;
			int da=gsal;
			System.out.println("Including DA Remaing salary is :"+da);
			System.out.println("Including HRA and DA total salary is :"+(hra+da));
		}
		else if(n>20000)
		{
			gsal=(n*30)/100;
			int hra=gsal;
			System.out.println("Including HRA Remaing salary is :"+hra);
			gsal=(n*90)/100;
			int da=gsal;
			System.out.println("Including DA Remaing salary is :"+da);
			System.out.println("Including HRA and DA total salary is :"+(hra+da));
		}
		else
		{
			System.out.println("Enter valid salary");
		}
	}
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac CalculateGrossSalary.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java CalculateGrossSalary
Enter Your salary:
30000
-------------------------
Including HRA Remaing salary is :9000
Including DA Remaing salary is :27000
Including HRA and DA total salary is :36000
```

8. Write a program to input electricity unit charges and calculate total electricity bill according to the given condition:

For first 50 units Rs. 0.50/unit

For next 150 units Rs. 0.75/unit

For next 250 units Rs. 1.20/unit

For unit above 250 Rs. 1.50/unit an additional surcharge of 20% is added to the bill

```
import java.util.*;
public class CalculateElectricityBill
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter unite to calculate electricity bill:");
                int unit = sc.nextInt();
                System.out.println("-------------------------");
                double tot=0,ucharge=0,total=0;
                if(unit<=50)
                {
                        ucharge=(unit*0.50);
                        System.out.println("Your "+unit+" charge is RS."+ucharge);
                        tot=(ucharge*20)/100;
                        total=tot+ucharge;
                        System.out.println("Your toatl electricity bill is RS."+total);
                }
                else if(unit>50 && unit<=150)
                {
                        ucharge=(unit*0.75);
                        System.out.println("Your "+unit+" charge is RS."+ucharge);
                        tot=(ucharge*20)/100;
                        total=tot+ucharge;
                        System.out.println("Your toatl electricity bill is RS."+total);
                }
                else if(unit>150 && unit<=250)
                {
                        ucharge=(unit*1.20);
                        System.out.println("Your "+unit+" charge is RS."+ucharge);
                        tot=(ucharge*20)/100;
                        total=tot+ucharge;
                        System.out.println("Your toatl electricity bill is RS."+total);
                }
                else if(unit>250)
                {
                        ucharge=(unit*1.50);
                        System.out.println("Your "+unit+" charge is RS."+ucharge);
                        tot=(ucharge*20)/100;
                        total=tot+ucharge;
                        System.out.println("Your toatl electricity bill is RS."+total);
                }

                else
                {
                        System.out.println("invalid unit");
                }
        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac CalculateElectricityBill.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java CalculateElectricityBill
Enter unite to calculate electricity bill:
40
-------------------------
Your 40 charge is RS.20.0
Your toatl electricity bill is RS.24.0

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java CalculateElectricityBill
Enter unite to calculate electricity bill:
150
-------------------------
Your 150 charge is RS.112.5
Your toatl electricity bill is RS.135.0
```

9. Write a java program that will check for the following conditions:

If the light is green – Car is allowed to go

If the light is yellow – Car has to wait

If the light is red – Car has to stop

Other signal – unrecognized signal. Example black, blue, etc.

```
import java.util.*;
public class SignalColour
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter signal colour(r/g/y):");
                char colour = sc.next().charAt(0);
                System.out.println("-------------------------");
                if(colour=='r')
                {
                        System.out.println("Car has to stop");
                }
                else if(colour=='y')
                {
                        System.out.println("Car has to wait");
                }
                else if(colour=='g')
                {
                        System.out.println("Car is allowed to go");
                }
                else
                {
                        System.out.println("unrecognized signal");
                }
        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac SignalColour.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java SignalColour
Enter signal colour(r/g/y):
r
-------------------------
Car has to stop
```

10. The current year and the year in which the employee joined the organization are entered through the keyboard. If the number of years for which the employee has served the organization is greater than 3 then a bonus of Rs. 2500/- is given to the employee. If the years of service are not greater than 3, then the program should do nothing.

```
import java.util.*;
public class JoinYearBonus
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter joining year:");
                int jyear = sc.nextInt();
                System.out.println("-------------------------");
                System.out.println("Enter current year:");
                int cyear = sc.nextInt();
                System.out.println("-------------------------");
                jyear=jyear+3;
                if(jyear<=cyear)
                {
                        System.out.println("You have bonus of Rs. 2500/- ");
                }
                else
                {
                        System.out.println("You have nothing else");
                }
        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac JoinYearBonus.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java JoinYearBonus
Enter joining year:
2024
-------------------------
Enter current year:
2028
-------------------------
You have bonus of Rs. 2500/-
```