

SBA-7- HELANI PAUL

1. Write a program that prompts the user to input a positive integer. It should then output a message indicating whether the number is a prime number.

```
import java.io.*;
import java.util.Scanner;
class PrimeNumber
{
    public static void main(String[] args)
    {
        int num,i,count=0;
        System.out.println("Enter the number");
        Scanner sc = new Scanner(System.in);
        num = sc.nextInt();
        for(i=1;i<=num;i++)
        {
            if(num%i==0)
            {
                count++;
            }
        }
        if(num==0 || num==1) // 0 and 1 case
        {
            System.out.println(num+" is not Prime not Composite");
        }
        else if(count==2)
        {
            System.out.println(num+" is a prime number");
        }
        else
        {
            System.out.println(num+" is not a prime number");
        }
    }
}
```

OUTPUT

```
Enter the number
45
45 is not a prime number
```

2. Write a program that prompts the user to input a positive integer. It should then print the multiplication table of that number.

```
import java.io.*;
import java.util.Scanner;
class MultiplicationTable
{
    public static void main(String[] args)
    {
        int num, l;
        System.out.println("Enter the number");
        Scanner sc = new Scanner(System.in);
        num = sc.nextInt();
        System.out.println("Enter the Limit");
        l = sc.nextInt();
        for(int i=1; i<=l; i++)
        {
            int output = num * i;
            System.out.println(num + "*" + i + "=" + output);
        }
    }
}
```

OUTPUT

```
Enter the number
14
Enter the Limit
20
14*1=14
14*2=28
14*3=42
14*4=56
14*5=70
14*6=84
14*7=98
14*8=112
14*9=126
14*10=140
14*11=154
14*12=168
14*13=182
14*14=196
14*15=210
14*16=224
14*17=238
14*18=252
14*19=266
14*20=280
```

3.A student will not be allowed to sit in exam if his/her attendance is less than 75%.

Take following input from user

Number of classes held

Number of classes attended.

And print

percentage of class attended

Is student is allowed to sit in exam or not.

```

import java.io.*;
import java.util.Scanner;
class StudentAttendance
{
    public static void main(String[] args)
    {
        double held,attended;
        double Total=0;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number of classes held");
        held = sc.nextInt();
        System.out.println("Enter the number of classes attended");
        attended = sc.nextInt();
        Total = (attended/held) * 100;
        if(Total >= 75)
        {
            System.out.println("Student is eligible for the exams - Attendance :"+Total);
        }
        else
        {
            System.out.println("Student is not eligible for the exams - Attendance :"+Total);
        }
    }
}

```

OUTPUT

```

Enter the number of classes held
45
Enter the number of classes attended
39
Student is eligible for the exams - Attendance :86.66666666666667

```

4.A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years.

Ask user for their salary and year of service and print the net bonus amount. Note- create a method Employee Bonus to calculate the bonus and return it.

```
import java.io.*;
import java.util.Scanner;
class CompanyBonus
{
    public static void main(String[] args)
    {
        double salary,years;
        double bonus=0;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter your salary");
        salary = sc.nextInt();
        System.out.println("Enter the number of years you've worked");
        years = sc.nextInt();
        if(years>5)
        {
            double Total_Bonus= (salary*5)/100;
            System.out.println("Bonus Amount is :"+Total_Bonus);
        }
        else
        {
            System.out.println("Not Eligible for bonus");
        }
    }
}
```

OUTPUT

```
Enter your salary
25000
Enter the number of years you've worked
6
Bonus Amount is :1250.0
```

5. Write a program to input the following details:

i)Employee Name

ii)Employee Salary

iii)Employee Year of joining

Calculate the Loyalty bonus of the Employee's by

a)if the year of their joining is on or before than 2017,and their Salary is more than 30000/-,
then the bonus will be 22% of the salary.

b)if the year of their joining is on or before than 2017,and their Salary is less than 30000/-,
then the bonus will be 33% of the salary.

c)if the year of their joining is on or before than 2012,
then the bonus will be 40% of the salary.

d)if the year of their joining is after 2017,and their Salary is less than 30000/-,
then the bonus will be 15% of the salary.

e)if the year of their joining is after 2017,and their Salary is more than 30000/-,
then the bonus will be 10% of the salary.

```

import java.util.*;
public class EmployeeDetails
{
    public static void main(String[] args)
    {
        int n,i;
        String[] name= new String[20];
        int[] salary = new int[10];
        int[] YoJ = new int[5];
        double[] bon = new double[10];
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number of employees");
        n = sc.nextInt();
        int[] arr = new int[n];
        for(i=0;i<n;i++)
        {
            System.out.println("Enter your name: ");
            name[i] = sc.next();
            System.out.println("Enter your salary: ");
            salary[i] = sc.nextInt();
            System.out.println("Enter your year of joining: ");
            YoJ[i] = sc.nextInt();
            System.out.println("Loyalty bonus for " +name[i]+" is: ");

            if(YoJ[i]<=2007 && salary[i]>30000)
            {
                bon[i] = (salary[i]*22)/100;
            }
            else if(YoJ[i]<=2007 && salary[i]<30000)
            {
                bon[i] = (salary[i]*33)/100;
            }
            else if(YoJ[i]<=2012)
            {
                bon[i] = (salary[i]*40/100);
            }

            else if(YoJ[i]>=2017 && salary[i]<30000)
            {
                bon[i] = (salary[i]*15)/100;
            }
            else if(YoJ[i]>=2017 && salary[i]>30000)
            {
                bon[i] = (salary[i]*10)/100;
            }
            System.out.println(""+bon[i]);
        }
    }
}

```

OUTPUT

```
Enter the number of employees
3
Enter your name:
John
Enter your salary:
23000
Enter your year of joining:
2012
Loyalty bonus for John is:
9200.0
Enter your name:
```

6. Write a program to check for the occurrence of a particular character in a string and display how many times it has occurred.

note: take the String and the character to be checked as a input from the user.

```
import java.io.*;
import java.util.*;
class OcuranceChar
{
    public static void main(String[] args)
    {
        int count=0;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the string");
        String st = sc.next();
        System.out.println("Enter the character");
        char ch = sc.next().charAt(0);
        for(int i=0;i<st.length();i++)
        {
            if(st.charAt(i) == ch)
            {
                count++;
            }
        }
        if(count == 0)
        {
            System.out.println("The character "+ch+" is Not present in the string");
        }
        System.out.println("The character "+ch+" is present in the String "+count+ " times");
    }
}
```

OUTPUT

```
Enter the string
myworldiscricket
Enter the character
c
The character c is present in the String 2 times
```


7. Write a program to implement nested try-catch block for NULL Pointer exception and NumberFormat Exception

```
class NullNumPointer
{
    public static void main(String[] args)
    {
        try //outer try
        {
            try //inner try
            {
                String str = null;
                System.out.println("Size of string is "+str.length());
            }
            catch(ArithmeticException e)
            {
                System.out.println("Arithmetic Exception has occurred");
            }
            catch(ArrayIndexOutOfBoundsException e)
            {
                System.out.println("Array Index Out Of Bounds Exception has occurred");
            }
            catch(NullPointerException e)
            {
                System.out.println("Null Exception");
            }
            String str ="5.78";
            int a = Integer.parseInt(str);
        } //end of outer try
        catch(ArithmeticException e)
        {
            System.out.println("Arithmetic Exception has occurred");
        }
        catch(ArrayIndexOutOfBoundsException e)
        {
            System.out.println("Array Index Out Of Bounds Exception has occurred");
        }
        catch(NumberFormatException e)
        {
            System.out.println("Number format Exception");
        }
    }
}
```

OUTPUT

```
Null Exception
Number format Exception
```

