SBA 7

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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.

PrimeNo.java

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

```
PS C:\Users\Lab\Desktop\java programs\assg4> javac PrimeNo.java
PS C:\Users\Lab\Desktop\java programs\assg4> java PrimeNo
Enter the number
7
7 is a prime number
PS C:\Users\Lab\Desktop\java programs\assg4> java PrimeNo
Enter the number
8
8 is not a prime number
PS C:\Users\Lab\Desktop\java programs\assg4>
```

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

MultTable.java

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

```
PS C:\Users\Lab\Desktop\java programs\assg4> javac MultTable.java
Enter the number
4
Enter the Limit
10
4*1=4
4*2=8
4*3=12
4*4=16
4*5=20
4*6=24
4*7=28
4*8=32
4*9=36
4*10=40
PS C:\Users\Lab\Desktop\java programs\assg4>
```

assg4\MultTable.java 1:1

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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.

AttendStudent.java

```java
//Student Attendance
import java.io.*;
import java.util.Scanner;
class AttendStudent
{
  public static void main(String[] args)
  {
    double held,attended;
    double percentage=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();
    percentage = (attended/held) * 100;
    if(percentage >= 75)
    {
      System.out.println("Student is eligible for the exams - Attendance :"+percentage);
    }
    else
    {
      System.out.println("Student is not eligible for the exams - Attendance :"+percentage);
    }
  }
}
```

```
PS C:\Users\Lab\Desktop\java programs\assg4> javac AttendStudent.java
PS C:\Users\Lab\Desktop\java programs\assg4> java AttendStudent
Enter the number of classes held
20
Enter the number of classes attended
12
Student is not eligible for the exams - Attendance :60.0
PS C:\Users\Lab\Desktop\java programs\assg4>
```

```
PS C:\Users\Lab\Desktop\java programs\assg4> java AttendStudent
Enter the number of classes held
100
Enter the number of classes attended
90
Student is eligible for the exams - Attendance :90.0
```

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.

CompBonus.java

```java
//Company Bonus
import java.io.*;
import java.util.Scanner;
class CompBonus
{
  public static void main(String[] args)
  {
    //CompBonus c = new CompBonus();
    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();
    bonus = Employeebonus(salary,years);
    System.out.println("Bonus Amount is :"+bonus);
  }
  static double Employeebonus(double x, double y)
  {
    if(y>5)
    {
      double Bonus_calc = (x*5)/100;
      return Bonus_calc;
    }
    else
    {
      System.out.println("Not Eligible for bonus");
    } return 0;
  }
}
```

```
PS C:\Users\Lab\Desktop\java programs\assg4> javac CompBonus.java
PS C:\Users\Lab\Desktop\java programs\assg4> java CompBonus
Enter your salary
80000
Enter the number of years you've worked
7
Bonus Amount is :4000.0
PS C:\Users\Lab\Desktop\java programs\assg4>
```

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.

EmployeeArray.java

```java
/* 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 EmployeeArray
{
  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: ");
      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]);
    }
  }
}
```

```
PS C:\Users\Lab\Desktop\java programs\assg5> java EmployeeArray
Enter the number of employees
1
Enter your name:
ad
Enter your salary:
90000
Enter your year of joining:
1999
Loyalty bonus for ad is:
19800.0
PS C:\Users\Lab\Desktop\java programs\assg5>
```

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.

OccurChar.java

```java
/*Write a program to check for the occurance of a particular character in a string and display how many times it has occured.
note: take the String  and the character to be checked as a input from the user. */
import java.io.*;
import java.util.*;
class OccurChar
{
  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");
  }
}
```

```
PS C:\Users\Lab\Desktop\java programs\day6\assg6_strings> javac OccurChar.java
PS C:\Users\Lab\Desktop\java programs\day6\assg6_strings> java OccurChar
Enter the string
people
Enter the character
e
The character  e is present in the String 2times
PS C:\Users\Lab\Desktop\java programs\day6\assg6_strings>
```

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

FinalTryCatch.java

```java
//Write a Program to implement Finally block along with try and catch block.
class FinalTryCatch
{
  public static void main(String[] args)
  {
    try
    {
      String s = null;
      System.out.println(s.length());
    }
    catch(NullPointerException e)
    {
      System.out.println("Null Pointer Exception Detected");
    }
    finally
    {
      System.out.println("This is finally block");
    }
    System.out.println("The Try Catch block with finally is executed");
  }
}
```

```
PS C:\Users\Lab\Desktop\java programs> cd day8
PS C:\Users\Lab\Desktop\java programs\day8> javac FinalTryCatch.java
PS C:\Users\Lab\Desktop\java programs\day8> java FinalTryCatch
Null Pointer Exception Detected
This is finally block
The Try Catch block with finally is executed
PS C:\Users\Lab\Desktop\java programs\day8>
```