SBA-7

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UST-GLOBAL
TRIVANDRUM

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.

```java
import java.util.Scanner;
public class Positiveint{
    public static void main(String[] args) {
        int i,flag=0;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a positive number");
        int x= sc.nextInt();
        sc.close();
        if(x ==0 || x==1)
        {
            System.out.println("Not a prime number");
        }
        else
        {
            for(i=2;i<(x/2);i++)
            {
                if(x%i==0)
                {
                    flag=1;
                    break;
                }
            }
            if (flag ==0)
            {
                System.out.println("It's a Prime Number");
            }
            else {
                System.out.println("Not a Prime Number");
            }
        }

    }
}
```

OUTPUT

```
Enter a positive number
74
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.

```java
import java.util.Scanner;
public class MultipleTable{
    public static void main(String[] args) {
        System.out.println("Enter a positive number");
        Scanner sc = new Scanner(System.in);
        int num= sc.nextInt();
        if(num<=0)
        {
            System.out.println("Invalid input");
        }
        else
        {
            for(int i=1;i<=10;i++)

            {
                System.out.println(num+"*"+i+" = "+num*i);
            }
        }
        sc.close();

    }
}
```

OUTPUT

```
Enter a positive number
89
89*1 = 89
89*2 = 178
89*3 = 267
89*4 = 356
89*5 = 445
89*6 = 534
89*7 = 623
89*8 = 712
89*9 = 801
89*10 = 890
```

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.

```java
import java.util.Scanner;
public class Attendence{
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter No.of Classes held: ");
        double a= sc.nextFloat();
        System.out.println();
        System.out.println("Enter No.of Classes attended: ");
        double b= sc.nextFloat();
        double percent =(b/a)*100;
        System.out.println("Percentage of classes attended is: "+percent+"%");
        if(percent<=75)
        {
            System.out.println("Candidate is not allow to sit in exam");
        }
        else
        {
            System.out.println("Candidate is allow to sit in exam");
        }

        sc.close();

    }
}
```

OUTPUT

```
Enter No.of Classes held:
10

Enter No.of Classes attended:
8
Percentage of classes attended is: 80.0%
Candidate is allow to sit in exam
```

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.

```java
import java.util.Scanner;
public class Employee{
    public static float EmployeeBonus(float y)
    {
        float bonus = (5*y)/100;
        return bonus+y;
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter your salary: ");
        int salary= sc.nextInt();
        System.out.println("Enter Year of Service: ");
        int yr = sc.nextInt();
        if(yr<5)
        {
            System.out.println("Your not applicable for bonus ");
        }
        else
        {
            float Bon = EmployeeBonus(salary);
            System.out.println("Your Upgraded net bonus amount: "+Bon);
        }

        sc.close();

    }
}
```

OUTPUT

```
Enter your salary:
50000
Enter Year of Service:
8
Your Upgraded net bonus amount: 52500.0
```

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.

```java
import java.util.Scanner;
public class EmpBonus{
        public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter no.of Employees: ");
        int len = sc.nextInt();
        String [] name= new String[len];
        int [] sal = new int [len];
        int[] yr = new int[len];
        System.out.println("Enter the details of Employees: ");
        System.out.println("++++++++++++++++++++++++++++ ");
        for(int i=0;i<len;i++)
        {
            System.out.println("Enter the name of Employee "+(i+1)+" : ");
            name[i]=sc.next();
            System.out.println("Enter the salary of Employee "+(i+1)+": ");
            sal[i]=sc.nextInt();
            System.out.println("Enter the year of joining of Employee"+(i+1)+" : ");
            yr[i]=sc.nextInt();
            System.out.println("++++++++++++++++++++++++++++");
        }
        System.out.println("TheLoyality bonus of employees are : ");
        int[] bon =new int [len];
        for(int i=0;i<len;i++)
        {
            if(yr[i]<=2017 && sal[i]>30000)
            {
                bon[i]= (sal[i]*22)/100;
                System.out.println("Bonus of "+name[i]+" is: "+bon[i]);
            }
            else if(yr[i]<=2017 && sal[i]<30000)
            {
                bon[i]= (sal[i]*33)/100;
                System.out.println("Bonus of "+name[i]+" is: "+bon[i]);
            }
```

```
            else if(yr[i]<=2012)
            {
                bon[i] = (sal[i]*40)/100;
                System.out.println("Bonus of "+name[i]+" is: "+bon[i]);

            }
            else if(yr[i]>2017 && sal[i]<30000)
            {
                bon[i] = (sal[i]*15)/100;
                System.out.println("Bonus of "+name[i]+" is: "+bon[i]);
            }
            else if(yr[i]>2017 && sal[i]>30000)
            {
                bon[i] = (sal[i]*10)/100;
                System.out.println("Bonus of "+name[i]+" is: "+bon[i]);
            }
            else
            {
                System.out.println("No bonus is issued.");
            }
        }
        sc.close();
        }
}
```

OUTPUT

```
Enter no.of Employees:
3
Enter the details of Employees:
++++++++++++++++++++++++++++
Enter the name of Employee 1 :
mary
Enter the salary of Employee 1:
1000
Enter the year of joining of Employee1 :
2017
++++++++++++++++++++++++++++
Enter the name of Employee 2 :
renu
Enter the salary of Employee 2:
950
Enter the year of joining of Employee2 :
2018
++++++++++++++++++++++++++++
Enter the name of Employee 3 :
angel
Enter the salary of Employee 3:
2000
Enter the year of joining of Employee3 :
2021
++++++++++++++++++++++++++++
TheLoyality bonus of employees are :
Bonus of mary is: 330
Bonus of renu is: 142
Bonus of angel is: 300
```

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.

```java
import java.util.Scanner;
public class OccurStr{
        public static void main(String[] args) {
        int count=0;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the String: ");
        String s1= sc.nextLine();
        System.out.println("Enter the Character: ");
        char c = sc.next().charAt(0);
        for(int i=0;i<s1.length();i++)
        {
          if(s1.charAt(i)==c)
          {
            count++;
          }
        }
        if(count==0)
        {
            System.out.println(c+" is not present in given string");
        }
        else
        {
            System.out.println(c+" is present in given string with "+count+" times");
        }

        sc.close();

    }
}
```

OUTPUT

```
Enter the String:
maria
Enter the Character:
a
a is present in given string with 2 times
```

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

```java
public class NestedtryCatch{
     public static void main(String[] args) {
    try
    {
         //inner try block 1
         try
         {
           String name= null;
           System.out.println(name.toLowerCase());
         }
         //catch block of inner try block 1
         catch(NullPointerException e)
         {
             System.out.println(e);
         }
         //inner try block 2
         try
         {
              Integer.parseInt("hello");
         }
         //catch block of inner try block 2
         catch(NumberFormatException e)
         {
          System.out.println(e);
         }
         System.out.println("other statement");
    }
    //catch block of outer try block
    catch(Exception e)
    {
       System.out.println("handled the exception (outer catch)");
    }
    System.out.println("normal flow..");
}
}
```

OUTPUT

```
java.lang.NullPointerException: Cannot invoke "String.toLowerCase()" because "<local1>" is null
java.lang.NumberFormatException: For input string: "hello"
other statement
normal flow..
```