Expt 1: Sum and average

```
import java.util.Scanner;
public class Sum_Average
{
   public static void main(String[] args)
   {
      int n, sum = 0;
      float average;
      Scanner s = new Scanner(System.in);
      System.out.print("Enter no. of elements you want in array:");
      n = s.nextInt();
      int a[] = new int[n];
      System.out.println("Enter all the elements:");
      for(int i = 0; i < n ; i++)
      {
         a[i] = s.nextInt();
         sum = sum + a[i];
      }
      System.out.println("Sum:"+sum);
      average = (float)sum / n;
      System.out.println("Average:"+average);
   }
}
```

Expt 1: Factorial

```
public class Factorial
 {
     public static void main(String[] args){
         int i;
               int n=10;
               int fact=1;
               for(i=1;i<=n;i++)
               {
               fact=fact*i;
               }
               System.out.println("Factorial is "+fact);
     }
}
```

Expt1:First 50 prime numbers

```
import java.util.Scanner;
class Prime
{
    public static void main(String arg[])
    {
    int i,count;
          System.out.print("Enter n value : ");
    Scanner sc=new Scanner(System.in);
    int n=sc.nextInt();
          System.out.println("Prime numbers between 1 to "+n+" are ");
    for(int j=2;j<=n;j++)
    {
    count=0;
    for(i=1;i<=j;i++)
    {
      if(j%i==0)
      {
          count++;
      }
    }
    if(count==2)
         System.out.print(j+"  ");
    }
    }
}
```

Expt2: Calculator

```
import java.util.Scanner;
class calculator {
  public static void main(String[] args) {
    char operator;
    Double number1, number2, result;
    Scanner input = new Scanner(System.in);
    System.out.println("Choose an operator: +, -, *, or /");
    operator = input.next().charAt(0);
    System.out.println("Enter first number");
    number1 = input.nextDouble();
    System.out.println("Enter second number");
    number2 = input.nextDouble();

    switch (operator) {
    case '+':
      result = number1 + number2;
      System.out.println(number1 + " + " + number2 + " = " + result);
      break;
    case '-':
      result = number1 - number2;
      System.out.println(number1 + " - " + number2 + " = " + result);
      break;
    case '*':
      result = number1 * number2;
      System.out.println(number1 + " * " + number2 + " = " + result);
      break;
    case '/':
      result = number1 / number2;
      System.out.println(number1 + " / " + number2 + " = " + result);
      break;
    default:
       System.out.println("Invalid operator!");
       break;
    }
    input.close();
  }
}
```

Expt3: Area and color

```
import java.io.*;
import java.util.*;
import java.io.*;
class rect
{
    double width,length;
String color;
void set_length(double a)
{ length=a; }
double get_length()
{ return length; }
void set_width(double a)
{ width=a; }
double get_width()
{ return width; }
void set_color(String x)
{ color=x;
}
String getcolor()
{ return(color);
}
double area()
{ return ( get_length()*get_width());
}
}
class Demo
{
public static void main(String arg[])throws Exception
{
Scanner in=new Scanner(System.in);
rect a=new rect();
System.out.println("Enter the length for first rectangle");
a.set_length(in.nextDouble());
System.out.println("Enter the width for first rectangle");
a.set_width(in.nextDouble());
System.out.println("Enter the Color for first rectangle");
a.set_color(in.next());
```

```
rect b=new rect();
System.out.println("Enter the length for second rectangle");
b.set_length(in.nextDouble());
System.out.println("Enter the width for second rectangle");
b.set_width(in.nextDouble());
System.out.println("Enter the Color for second rectangle");
//String s1=in.nextLine();
b.set_color(in.next());
if(a.area()==b.area()&& a.getcolor().equals(b.getcolor()) )

System.out.println("Matching Rectangle ");
else
System.out.println("Non Matching Rectangle ");

}
}
```

EXP 4:METHOD AND CONSTRUCTOR OVERLOADING

```
import java.util.*;
class Methodov
{
public void display(int a)
{
System.out.println("First integer fata of method ov");
}
public void display(String a)
{
System.out.println("second integer fata of method ov");
}
public static void main(String args[])
{
Methodov m1=new Methodov();
m1.display(1);
m1.display("A");
}}
```

2:

```
import java.util.*;
class constructorov{
int id=1;
String name="Nitin";
constructorov()
{
System.out.println("this is default constructor");
}
constructorov(int i,String n)
```

```
{
id=i;
name=n;
}
public static void main(String args[])
{
constructorov m1=new constructorov();
System.out.println("this is default constructor");
System.out.println("Student if"+m1.id+"Student name"+m1.name);
constructorov m2=new constructorov(20,"Nitin);
System.out.println("this is parametrized constructor");
System.out.println("Student if"+m2.id+"Student name"+m2.name);
}}
```

Exp. No:5. Sorting an Array element to learn Arrays and Strings in Java.

Source Code:

```
import java.util.Scanner;

class Sort (

class Sort (

void sortInterger(int a[]) {

for (int i=0; i < a.length; i++) {

for (int j = i + 1 j<a.length; j++) { if (a[i]>a[1]) (int temp =a[1]; a[ []=a[j]; a[j] = teo ;

}}

void sortString(String str[]) {

String temp;

for (int i = 0 i < str.length; i++) {

for (int i + 1 + 1 j < str.length; j ++) { if (str[i].compareTo(str[j]) > 0)

{temp str[i]; str[i] = str[j]; str[j] = temp;

}}

}}

}

class Exp5 (

public static void main(String[] args) { Sort obj = new Sort();Scanner in = new Scanner(System.in); int
choice;

do {

System.out.println(" 1. Sort Integer\n 2.Sort String");System.out.println("Enter the choice");

int ch = in.nextInt ();

switch (ch) { case 1:

System.out.println("Enter the size of Array "); int n = in.nextInt();

System.out.println("Enter the Numbers:"); int arr[] = new int[n];for (int i = 0 i < n i++) arr[1] =
in.nextInt();obj.sortInterger(arr);

// Arrays.sort(arr); System.out.println("Sorted Numbers :^ * ) ;
```

```
for (int i = 0 i < nj i++) System.out.print(arr[i] + " ");

break;

case 2:

String names []= f "ram", "shyam", "seeta", "geeta", "reeta" };obj.sortString(names);

for (int i = 0 i < names.length; i++) System.out.print(names [1] + " ");break;

}

System.out.println("\nDo you want to continue 1 or 0?"); choice =

in.nextInt();

} while (choice == 1);

}

}
```

Exp.No:6. Write Programs in Java to add two matrices

Source Code:

```
import java.util.Scanner;

public class Add_M {


            public static void main(String[] args)
{

            Scanner s = new Scanner(System.in);
             System.out.print("Enter number of rows: ");
            int rows = s.nextInt();
            System.out.print("Enter number of columns: ");
            int columns = s.nextInt();
            int[][] a = new int[rows][columns];
            int[][] b = new int[rows][columns];
            System.out.println("Enter the first matrix");
            for (int i = 0; i < rows; i++)
            {
            for (int j = 0; j < columns; j++)
            {
            a[i][j] = s.nextInt();
            }
            }
            System.out.println("Enter the second matrix"); for
            (int i = 0; i < rows; i++) {
            for (int j = 0; j < columns; j++)
            {
            b[i][j] = s.nextInt();
            }
            }
            int[][] c = new int[rows][columns];
            for (int i = 0; i < rows; i++) {
            for (int j = 0; j < columns; j++) { c[i][j] = a[i][j] + b[i][j];
            }
            }
            System.out.println("The sum of the two matrices is");
            for (int i = 0; i < rows; i++)
            {
            for (int j = 0; j < columns; j++)
            {
            System.out.print(c[i][j] + " ");
            }
            System.out.println();
            }
            }


}
```

Exp.No:7. Write a program in Java to create a player class. Inherit the classes Cricket_player,Football_player and Hockey_player from player class.

```
import java.util.Scanner; class Player{
String name; int age;
String gameName;
int noOfGamesPlayed; String address;

String type;
Scanner in=new Scanner(System.in);

void getDetails()
{
System.out.println("Enter the details Name,Age,Address,Name of
Game,No of Games Played and Type");

name=in.next(); age=in.nextInt(); address=in.next();
gameName=in.next(); noOfGamesPlayed=in.nextInt(); type=in.next();

}

void display()
{
System.out.println("Name:"+name+"\nAge"+age+"\nGame
Name"+gameName+"\nTotal
Matches:"+noOfGamesPlayed+"\nAddress:"+address+"\nInternational or
National:"+type);

}
}
class Cricket_Player extends Player{ int totalRuns;
int totalWickets;

void getDetails()
{
super.getDetails();
System.out.println("Enter the total runs and wickets:");
totalRuns=in.nextInt();
totalWickets=in.nextInt();

}
void display()
{
super.display();
System.out.println("Total Runs:"+totalRuns+"Total
Wickets"+totalRuns);
}
}

class Football_Player extends Player
{
int noOfGoals; void getDetails()
{
super.getDetails(); System.out.println("Enter the no of Goals");
noOfGoals=in.nextInt();
}
void display()
{
```

```
super.display();
System.out.println("Total Goals:"+noOfGoals);
}
}
class Hockey_Player extends Player
{
int noOfGoals; void getDetails()
{
super.getDetails(); System.out.println("Enter the no of Goals");
noOfGoals=in.nextInt();
}
void display()
{
super.display();
System.out.println("Total Goals:"+noOfGoals);
}



public static void main(String[] args)
{
Cricket_Player cp=new Cricket_Player(); cp.getDetails();
cp.display();

Football_Player fp=new Football_Player(); fp.getDetails();
fp.display();

Hockey_Player hp=new Hockey_Player(); hp.getDetails();
hp.display();

}

}
```

Exp.No:8. Write a JAVA program which implements INTERFACE.

Source Code:

```
public interface area {

        double pi = 3.14;
        double calc(double x,double y);
     }

class rect implements area
 {
    public double calc(double x,double y)
      {
          return(x*y);
       }
 }

class cir implements area
 {
    public double calc(double x,double y)
      {
          return(pi*x*x);
       }
 }

class test7
{
   public static void main(String arg[])
     {
        rect r = new rect();
        cir c = new cir();
        area a;

        a = r;
        System.out.println("\nArea of Rectangle is : " +a.calc(10,20));

        a = c;
        System.out.println("\nArea of Circle is : " +a.calc(15,15));
      }
}
```

Exp.No:9. Write a JAVA program which use try and catch for exception handling.

Source Code:

```
public class Main {
  public static void main(String[] args) {
    try {
      int[] myNumbers = {1, 2, 3};
      System.out.println(myNumbers[10]);
    } catch (Exception e) {
      System.out.println("Something went wrong.");
    } finally {
      System.out.println("The 'try catch' is finished.");
    }
  }
}
```

Exp.No:11. Write a java program in which data is read from one file and should be written in another file line by line.

```
import java.io.File;
import java.io.FileReader;
import java.io.FileWriter;
import java.io.IOException;
public class FileInOut {
public static void main(String[] args) {
File inputFile = new File("C:\\Exp\\input.txt");
File outputFile = new File("C:\\Exp\\output.txt");
FileReader ins = null; //ins is a reference variable
FileWriter outs = null; // outs is a reference variable
try {
 ins = new FileReader(inputFile);
 outs = new FileWriter(outputFile);
 int ch;
 while ((ch = ins.read()) != -1) {

 outs.write(ch);
 }
 }
catch (IOException e) {
 e.printStackTrace();
 System.exit(-1);
 }
finally { // resource clean up block
 try {
 ins.close();
 outs.close();
 }
 catch (IOException e) {

 }
 }
}
}
```