SRM UNIVERSITY

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF TELECOMMUNICATION ENGINEERING

LAB PLAN

Course Code : **TE0223**
Course Title : **Java Programming Lab** **Semester**: **III**
Course Time : **July – Nov. 2012**

SL. NO.	EXPERIMENT NAME
1.	Display message
2.	Add two numbers
3.	Arithmetic operations
4.	Area of the circle
5.	Check odd or even
6.	Greatest among three numbers
7.	Greatest number using nested if
8.	Sum and average of five marks
9.	Arithmetic operations using switch
10.	Names of 10 natural numbers
11.	Sum of ‘n’ natural numbers
12.	Factorial of a number
13.	Sum of ‘n’ numbers
14.	Sum of two numbers using class and object
15.	Prepare marksheet of a student
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18.	Arithmatic operations using static members
19.	Print greatest value using nesting of methods
20.	Find area and volumn of a room using inheritance
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25.	Sorting names in ascending order
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30.	Applet program to draw a house
31.	Applet program to draw a car

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LAB MANUAL

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Ex. No :1 **DISPLAY MESSAGE**

Aim : Program to display a message on the screen.

ALGORITHM

Step 1: Print “Welcome”
Step 2: Stop

PROGRAM:

```
class msg
{
public static void main(String args[])
{
System.out.println("Welcome”);
}
}
```

OUTPUT:

```
D:\JAVA>set path=c:\java\bin
D:\JAVA>javac msg.java
D:\JAVA>java msg
Welcome
D:\JAVA>
```

Ex. No :2 **ADD TWO NUMBERS**

AIM : To write a Java program to add two numbers.

ALGORITHM:

Step 1: Read values for a and b.
Step 2: c=a+b
Step 3: print c
Step 4: Stop

PROGRAM:

```
import java.io.*;
class clsadd
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
int a,b,c;
a=Integer.parseInt(br.readLine());
b=Integer.parseInt(br.readLine());
c=a+b;
System.out.println("The Sum is "+c);}}
```

OUTPUT:

```
D:\JAVA>set path=c:\java\bin
D:\JAVA>javacclsadd.java
D:\JAVA>java clsadd
10
 20
The Sum is 30
D:\JAVA>
```

Ex. No :3 **ARITHMETIC OPERATIONS**

AIM: To write a program to perform arithmetic operations.

ALGORITHM:

Step 1: Read values for a and b.
Step 2: c=a+b, d=a-b, e=a*b,f=a/b
Step 3: print c,d,e and f
Step 4: Stop

PROGRAM:

```
import java.io.*;
class clsarith
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
float a,b,c,d,e,f;
System.out.println("Enter the numbers:");
a=Float.parseFloat(br.readLine());
b=Float.parseFloat(br.readLine());
c=a+b;
d=a-b;
e=a*b;
f=a/b;
System.out.println(a + " + " + b + " = " + c);
System.out.println(a + " - " + b + " = " + d);
System.out.println(a + " * " + b + " = " + e);
System.out.println(a + " / " + b + " = " + f);
}
}
```

OUTPUT:

```
D:\JAVA>set path=c:\java\bin
D:\JAVA>javac clsarith.java
D:\JAVA>java clsarith
 Enter the numbers:
 10
  5
10.0 + 5.0 = 15.0
10.0 - 5.0 = 5.0
10.0 * 5.0 = 50.0
10.0 / 5.0 = 2.0
D:\JAVA>
```

Ex. No :4 **AREA OF THE CIRCLE**

AIM : To write a program to calculate area of the circle

ALGORITHM:

Step 1: Read value of r.
Step 2: a = 3.14*r*r
Step 3: print area a.
Step 4: Stop

PROGRAM:

```
import java.io.*;
class clsarea
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
float r,a;
System.out.println("Enter the radius:");
r=Float.parseFloat(br.readLine());
a=3.14f*r*r;
System.out.println("Area is "+a);
}}
```

OUTPUT:

```
D:\JAVA>javac clsarea.java
D:\JAVA>java clsarea
Enter the radius:
10
Area is 314.0
D:\JAVA>
```

Ex. No: 5 **CHECK ODD OR EVEN**

AIM: To write a program to check whether the no is even or odd.

ALGORITHM:

Step 1: Start
Step 2: Read the no n
Step 3: If n%2 = 0 then print even
Step 4: If n%2=1 then print odd
Step 5: Stop

PROGRAM:

```
import java.io.*;
class clsevenodd
{public static void main(String args[])throws IOException
{BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
int n;
System.out.println("Enter the no:");
n=Integer.parseInt(br.readLine());
if(n%2==0)
{
System.out.println("EVEN");}
if(n%2==1)
{System.out.println("ODD");}
}
}
```

OUTPUT:

```
D:\JAVA>javac clsevenodd.java
D:\JAVA>java clsevenodd
Enter the no:
10
EVEN
D:\JAVA>java clsevenodd
Enter the no:
9
ODD
D:\JAVA>
```

Ex. No: 6 **GREATEST AMONG THREE NUMBERS**

AIM: To write a program to print the greatest no.

ALGORITHM:

Step 1: Start
Step 2: Read a, b and c
Step 3: if a>b and a>c print “A is greatest”.
Step 4: else if b>c print “B is greatest”.
Step 5: else print “C is greatest”.

PROGRAM:

```
import java.io.*;
class gtn
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
int a,b,c;
System.out.println("Enter the values");
a=Integer.parseInt(br.readLine());
b=Integer.parseInt(br.readLine());
c=Integer.parseInt(br.readLine());
if((a>b)&&(a>c))
{System.out.println("A is greatest");}
else if (b>c)
{
System.out.println("B is greatest");
}
else
{
System.out.println("C is greatest");}}}
```

OUTPUT:

```
D:\JAVA>javac clsgtn.java
D:\JAVA>java clsgtn
Enter the values:
12 21 32
C is greatest
D:\JAVA>
```

Ex. No: 7 GREATEST NUMBER USING NESTED IF

AIM : To write a program to find the greatest among 3 no's using nested if.

ALGORITHM:

Step 1: Start
Step 2: Class gtnnestedif
Step 3: Use if and compare a,b and c
Step 4: Print the greatest no
Step 5: Stop

PROGRAM:

```
import java.io.*;
class gtnnestedif
{
public static void main(String args[])throws IOException
{BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
int a,b,c;
System.out.println("Enter the values");
a=Integer.parseInt(br.readLine());
b=Integer.parseInt(br.readLine());
c=Integer.parseInt(br.readLine());
if(a>b)
{if(a>c)
{System.out.println("A is greatest");}
else
{
System.out.println("C is greatest");}}
else if (b>c)
{
System.out.println("B is greatest");}
else
{System.out.println("C is greatest");}}}
```

OUTPUT:

```
D:\JAVA>javac clsgtn.java
D:\JAVA>java clsgtn
Enter the values:
10 20 34
C is greatest
```

Ex. No: 8 **SUM AND AVERAGE OF FIVE MARKS**

AIM : Program to find calculate sum, average and check if pass or fail.

ALGORITHM:

Step 1: Start
Step 2: Read marks in five subjects
Step 3: Sum=m1+m2+m3+m4+m5
Step 4: Avg = sum/5f
Step 5: Print the sum and average
Step 6: If (m1>40) and (m2>40) and(m3>40) and(m4>40) and(m5>40) then pass else fail
Step 8: Stop

PROGRAM:

```
import java.io.*;
class mark
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
int m1,m2,m3,m4,m5,tot;
float avg;
System.out.println("Enter the mark");
m1=Integer.parseInt(br.readLine());
m2=Integer.parseInt(br.readLine());
m3=Integer.parseInt(br.readLine());
m4=Integer.parseInt(br.readLine());
m5=Integer.parseInt(br.readLine());
tot=m1+m2+m3+m4+m5;avg=tot/5;
System.out.println("Total="+tot);
System.out.println("Average="+avg);
if((m1>=40)&&(m2>=40)&&(m3>=40)&&(m4>+40)&&(m5>=40))
{
System.out.println("Result=Pass");
if (avg>=60){System.out.println("Class=First");}
else if (avg>=50)
{System.out.println("Class=Second");}
else
{System.out.println("Class=Third");
}}
else
{System.out.println("Result=Fail"); }
```

```
}
}
```

OUTPUT:

```
D:\JAVA>javac mark.java
D:\JAVA>java mark
Enter the mark
80
80
80
80
80
Total=400
Average=80.0
Result=Pass
Class=First
D:\JAVA>
```

Ex. No: 9 ARITHMETIC OPERATIONS USING SWITCH

AIM : To write a program to perform arithmetic operations using switch statement.

ALGORITHM:

Step 1: Start
Step 2: Read the numbers.
Step 3: Print the choice menu
Step 4: Read the choice from the user.
Step 5: Perform the arithmetic operations using switch case.
Step 6: Print the desired output
Step 7: Stop

PROGRAM:

```
import java.io.*;
class arith
{public static void main(String args[])throws IOException
{BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
float a,b,c;
System.out.println("Enter the values");
a=Float.parseFloat(br.readLine());
b=Float.parseFloat(br.readLine());
System.out.println("1.Add");
System.out.println("2.Sub");
System.out.println("3.Mul");
System.out.println("4.Div");
System.out.println("Enter your choice");int ch;
ch = Integer.parseInt(br.readLine());c = 0;
switch(ch)
{ case 1 : c=a+b;
  break ;
case 2 : c=a-b;
  break ;
case 3 : c=a*b;
break ;
case 4 : c=a/b;
break ;
default : System.out.println("Invalid choice");
 break ;}
System.out.println("Result is " +c);
}
}
```

OUTPUT:

```
D:\JAVA>javac arith.java
D:\JAVA>java arith
Enter the values
10
10
1.Add
2.Sub
3.Mul
4.Div
Enter your choice
3
Result is 100.0
D:\JAVA>
```

Ex. No: 10 **NAMES OF 10 NATURAL NUMBERS**

AIM : To write a program to print the name of the entered natural no(1-10)

ALGORITHM:

Step 1: Start
Step 2: Read the value
Step 3: Switch case and print the name of the number
Step 4: Print the desired output
Step 5: Stop

PROGRAM:

```
import java.io.*;
class natno
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
int a;
System.out.println("Enter the value");
a=Integer.parseInt(br.readLine());
switch(a)
{ case 1 : System.out.println("One");
  break ;
case 2 : System.out.println("Two");
  break ;
case 3 : System.out.println("Three");
  break ;
case 4 : System.out.println("Four");
  break ;
case 5 : System.out.println("Five");
  break ;
case 6 : System.out.println("Six");
  break ;
case 7 : System.out.println("Seven");
  break ;
case 8: System.out.println("Eight");
  break ;
case 9 : System.out.println("Nine");
  break ;
case 10 : System.out.println("Ten");
  break ;
```

```
default : System.out.println("Invalid choice");
 break ;
}
}
}
```

OUTPUT:

```
D:\JAVA>javac natno.java
D:\JAVA>java natno
Enter the value
7
Seven
D:\JAVA>
```

Ex. No: 11 **SUM OF 'N' NATURAL NUMBERS**

AIM : To write a program to find sum of n natural numbers.

ALGORITHM

Step 1: Start
Step 2: Read the value of n.
Step 3: for i=1 to n
Step 4: sum=sum+i
Step 5: Display the sum
Step 6: Stop

PROGRAM:

```
import java.io.*;
class clssum
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
System.out.println("Enter the value of n");
int n,i;
int s=0;
n = Integer.parseInt(br.readLine());
for(i=1;i<=n;i++)
{
s+=i;
}
System.out.println("Sum is"+s);
}}
```

OUTPUT:

```
D:\JAVA>javac clssum.java
D:\JAVA>java clssum
Enter the value of n
5
Sum is15
D:\JAVA>
```

Ex. No: 12 **FACTORIAL OF A NUMBER**

AIM : To write a program to find the factorial of a number entered by the user.

ALGORITHM

Step 1: Start
Step 2: Read the value of n.
Step 3: for i=1 to n
Step 4: fact=fact*i
Step 5: Display the fact
Step 6: Stop

PROGRAM:

```
import java.io.*;
class clssum
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
System.out.println("Enter the value of n");
int n,i;
int s=1;
n = Integer.parseInt(br.readLine());
for(i=1;i<=n;i++)
{
s+=i;
}
System.out.println("Factorial is"+s);
}
}
```

OUTPUT:

```
D:\JAVA>javac clsfact.java
D:\JAVA>java clsfact
Enter the value of n
5
Factorial is 120
D:\JAVA>
```

EX. NO: 13 SUM OF 'N' NUMBERS

Aim : To write a program to find sum of n numbers entered by the user.

ALGORITHM

Step 1: Start
Step 2: Read the value of n.
Step 3: for i=1 to n repeat Step 4 and Step 5
Step 4: read a
Step 5: sum=sum+a
Step 6: Display the sum
Step 7: Stop

PROGRAM:

```
import java.io.*;
class clssum2
{public static void main(String args[])throws IOException
{BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
System.out.println("Enter the value of n");
int n,a,i;int s=0;   n = Integer.parseInt(br.readLine());
for(i=1;i<=n;i++)
{a = Integer.parseInt(br.readLine());    s+=a;
}
System.out.println("Sum is"+s);}}
```

OUTPUT:

```
D:\JAVA>javac clssum2.java
D:\JAVA>java clssum2
Enter the value of n
3
1
4
5
Sum is 10
D:\JAVA>
```

Ex. No: 14 SUM OF TWO NUMBERS USING CLASS AND OBJECT

Aim : To write a program to find sum of two numbers using class and object.

ALGORITHM

Step 1: Start
Step 2: Define a class sum
Step 3: Define methods getdata and sum
Step 4: Define clsmain
Step 5: Read the two numbers.
Step 6: Call getdata and sum
Step 7: Print the sum
Step 8: Stop

PROGRAM:

```
import java.io.*;
class sum
{
int a;
int b;
void getdata(int c,int d)
{
a=c;
b=d;
}
int sum1()
{
return(a+b);
}}
class clsmain
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
int d,e;
d=Integer.parseInt(br.readLine());
e=Integer.parseInt(br.readLine());
sum r = new sum();
r.getdata(d,e);
System.out.println("The sum is " + r.sum1());
```

}}

OUTPUT:

```
D:\JAVA>javac sum.java
D:\JAVA>java clsmain
10
20
The sum is 30
D:\JAVA>
```

Ex. No: 15 **PRINT THE MARKSHEET OF A STUDENT**

Aim : To write a program to print the marksheet of a student

PROGRAM:

```
import java.io.*;
class marksheet
{
int m1,m2,m3,m4,m5,tot;
float avg;
void getdata()throws IOException
{BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
System.out.println("Enter the mark");
m1=Integer.parseInt(br.readLine());
m2=Integer.parseInt(br.readLine());
m3=Integer.parseInt(br.readLine());
m4=Integer.parseInt(br.readLine());
m5=Integer.parseInt(br.readLine());
tot=m1+m2+m3+m4+m5;avg=tot/5;}
void putdata()throws IOException
{BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
System.out.println("Name : CHIRAG GUPTA ");
System.out.println("Subject 1 marks : " + m1);
System.out.println("Subject 2 marks : " + m2);
System.out.println("Subject 3 marks : " + m3);
System.out.println("Subject 4 marks : " + m4);
System.out.println("Subject 5 marks : " + m5);
System.out.println("Total="+tot);
System.out.println("Average="+avg);
if((m1>=40)&&(m2>=40)&&(m3>=40)&&(m4>=40)&&(m5>=40))
{System.out.println("Result=Pass");
if (avg>=60)
{System.out.println("Class=First");
}
else if (avg>=50)
{System.out.println("Class=Second");
}
else
{System.out.println("Class=Third");
}}
```

```
else
{System.out.println("Result=Fail");}}}
class clsmain
{public static void main(String args[])throws IOException
{marksheet r1 = new marksheet();
r1.getdata();
r1.putdata();}}
```

OUTPUT:

```
D:\JAVA>javac marksheet.java
D:\JAVA>java clsmain
Enter the mark
90
85
80
90
100
Name : CHIRAG GUPTA
Subject 1 marks : 90
Subject 2 marks : 85
Subject 3 marks : 80
Subject 4 marks : 90
Subject 5 marks : 100
Total=445
Average=89.0
Result=Pass
Class=First
```

Ex. No: 16 **AREA OF RECTANGLE USING CONSTRUCTOR**

Aim : To write a program to print the area of the rectangle.

PROGRAM:

```
import java.io.*;
class rectangle
{
int length;
int breadth;
rectangle()
{
length = breadth = 0;
}
rectangle(int w)
{
length = breadth = w;
}
rectangle(int l, int s)
{
length = l;
breadth = s;
}
int area()
{
return(length*breadth);
}}
class clsmain
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
int d,e;
d=Integer.parseInt(br.readLine());
e=Integer.parseInt(br.readLine());
rectangle r1 = new rectangle();
System.out.println("The area is " + r1.area());
rectangle r2 = new rectangle(d);
System.out.println("The area is " + r2.area());
rectangle r3 = new rectangle(d,e);
```

```
System.out.println("The area is " + r3.area());
}
}
```

OUTPUT:

```
D:\JAVA>javac rectangle.java
D:\JAVA>java clsmain
10
20
The area is 0
The area is 100
The area is 200
D:\JAVA>
```

Ex. No: 17 **AREA OF ROOM**

Aim : To write a program to print the area of the room.

PROGRAM:

```
import java.io.*;
class room
{
int area(int l,int w)
{
return(l*w);
}
}
class clsmain
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new

InputStreamReader(System.in));
int d,e;
d=Integer.parseInt(br.readLine());
e=Integer.parseInt(br.readLine());
room r1 = new room();
System.out.println("The area of room is " + r1.area(d,e));
}
}
```

OUTPUT:

```
D:\JAVA>javac room.java
D:\JAVA>java clsmain
10
20
The area is 200
D:\JAVA>
```

Ex. No: 18 ARITHMATIC OPERATIONS USING STATIC MEMBERS

Aim : To write a program to perform arithmetic operations using static members.

PROGRAM:

```
import java.io.*;
class clsstatic
{
static float mul(float x, float y)
{
return (x*y);
}
static float divide(float x,float y)
{
return (x/y);
}
}
class clsmain
{
public static void main (String args[])
{
float m = clsstatic.mul(4.0f,5.0f) ;
float n = clsstatic.divide(10.0f,2.0f);
System.out.println(m);
System.out.println(n);
}
}
```

OUTPUT:

```
D:\JAVA>javac clsstatic.java
D:\JAVA>java clsmain
20.0
5.0
```

Ex. No: 19 PRINT GREATEST VALUE USING NESTING OF METHODS

Aim : To write a program to print the greatest value using nesting of methods.

PROGRAM:

```
import java.io.*;
class clsnesting
{
int m,n;
clsnesting(int x,int y)
{
m=x;
n=y;
}
int largest()
{
return((m>n)?m:n);
}
void display()
{
System.out.println("Largest value = " + largest());
}}
class clsmain
{public static void main (String args[])
{
clsnesting n1=new clsnesting (10,20);
n1.display();}}
```

OUTPUT:

```
D:\JAVA>javac clsnesting.java
D:\JAVA>java clsmain
Largest value is 20
```

Ex. No: 20 FIND AREA AND VOLUMN OF A ROOM USING INHERITANCE

Aim : To write a program to calculate area and volumn using inheritance of classes

PROGRAM:

```
import java.io.*;
class clsroom
{
int l;
int b;
clsroom(int x,int y)
{
l=x;
b=y;
}
int area()
{
return(l*b);
}}
class studyroom extends clsroom
{
int h;
studyroom(int x,int y,int z)
{
super(x,y);
h=z;
}
int volumn()
{
return(l*b*h);
}
}
class clshome
{
public static void main (String args[])
{
studyroom s1 = new studyroom(12,10,10);
System.out.println("Area = "+s1.area());
System.out.println("Volumn="+s1.volumn());
}
}
```

OUTPUT:

```
D:\JAVA>javac clsroom.java
D:\JAVA>java clshome
Area = 120
Volumn = 1200
```

Ex. No: 21 **METHOD OVERRIDING**

Aim : To write a program to implement method overriding

PROGRAM:

```
class clssuper
{
int x;
clssuper (int x)
{
this.x=x;
}
void display()
{
System.out.println("x="+x);
}}
class clssub extends clssuper
{
int y;
clssub (int x, int y)
{
super(x);
this.y=y;
}
void display()
{
System.out.println("x="+x);
System.out.println("y="+y);
}}
class clsoverride
{
public static void main(String args[])
{
clssub s1 = new clssub(10,20);
s1.display();
}}
```

OUTPUT:

```
 D:\JAVA>javac clssuper.java
D:\JAVA>java clsoverride
x = 10
y = 20
```

Ex. No: 22 **READ AND PRINT N NUMBERS(ARRAY)**

Aim : To write a program to read and print n numbers using arrays.

PROGRAM:

```
import java.io.*;
class clsarray1
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new

InputStreamReader(System.in));
int i,n;
int a[] = new int[100];
System.out.println("Enter the value of n");
n=Integer.parseInt(br.readLine());
System.out.println("Enter the values");
for(i=0;i<n;i++)
{
a[i]=Integer.parseInt(br.readLine());
}
System.out.println("The values are");
for(i=0;i<n;i++)
{
System.out.println(a[i]);
}}
}
```

OUTPUT:

```
D:\JAVA>javac clsarray1.java
D:\JAVA>java clsarray1
Enter the value of n
3
Enter the values
1
2
3
The values are
1
2
3
```

Ex. No: 23 **SORTING NUMBERS IN ASCENDING ORDER**

Aim : To write a program to read and sort n numbers.

PROGRAM:

```
import java.io.*;
class clsarray
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
int i,n,j,t;
int a[] = new int[100];
System.out.println("Enter the value of n");
n=Integer.parseInt(br.readLine());
System.out.println("Enter the values");
for(i=0;i<n;i++)
{
a[i]=Integer.parseInt(br.readLine());
}
for(i=0;i<n-1;i++)
{
for(j=i+1;j<n;j++)
{
if(a[i]>a[j])
{
t = a[i];
a[i] = a[j];
a[j] = t;
}
}
}
System.out.println("After sorting");
for(i=0;i<n;i++)
{
System.out.println(a[i]);
}
}
}
```

OUTPUT:

```
D:\JAVA>javac clsarray.java
D:\JAVA>java clsarray
Enter the value of n
3
Enter the values
2
4
3
9
7
After sorting
2
3
4
7
9
```

Ex. No: 24 **SUM OF TWO MATRICES**

Aim : To write a program to find the sum of two matrices.

PROGRAM:

```
import java.io.*;
class clsmatrix
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new

InputStreamReader(System.in));
int i,j,m,n;
int a[][] = new int[10][10];
int b[][] = new int[10][10];
int c[][] = new int[10][10];
System.out.println("Enter the order of matrix");
m=Integer.parseInt(br.readLine());
n=Integer.parseInt(br.readLine());
System.out.println("Enter the first matrix");
for(i=0;i<m;i++)
{
for(j=0;j<n;j++)
{
a[i][j]=Integer.parseInt(br.readLine());
}
}
System.out.println("Enter the second matrix");
for(i=0;i<m;i++)
{
for(j=0;j<n;j++)
{
b[i][j]=Integer.parseInt(br.readLine());
}
}
for(i=0;i<m;i++)
{
for(j=0;j<n;j++)
{
c[i][j]=a[i][j] + b[i][j] ;
```

```
}
}
System.out.println("The third matrix is");
for(i=0;i<m;i++)
{
for(j=0;j<n;j++)
{
System.out.print(c[i][j]);
}
System.out.print("\n");
}
}
}
```

OUTPUT:

```
D:\JAVA>javac clsmatrix.java
D:\JAVA>java clsmatrix
Enter the order of matrix
3
3
Enter the first matrix
1 1 1
1 1 1
1 1 1

Enter the second matrix
2 2 2
2 2 2
2 2 2

The third matrix is
3 3 3
3 3 3
3 3 3
D:\JAVA>
```

Ex. No: 25 SORTING NAMES IN ASCENDING ORDER

Aim : To write a program to calculate the sum of two matrices.

PROGRAM:

```
import java.io.*;
class clsnamesort
{
public static void main(String args[])throws IOException
{
int i,j,n;
String t;
String Sname[] = new String[25];
System.out.println("Enter Total no of names : ");
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
n = Integer.parseInt(br.readLine());
System.out.println("Enter The names : ");
for(i=0;i<n;i++)
{
Sname[i]=br.readLine();
}
for(i=0; i<n-1; i++)
for(j=1; j<n; j++)
if(Sname[i].compareTo(Sname[j])>0)
{
t = Sname[i];
Sname[i] = Sname[j];
Sname[j] = t;
}
System.out.println("After Sorting ");
for(i=0;i<n;i++)
System.out.println(Sname[i]);
}
}
```

OUTPUT:

```
D:\JAVA>javac clsnamesort.java
D:\JAVA>java clsnamesort
Enter Total no of names :
2
```

```
Enter The names :
chirag
ankit
After Sorting
ankit
chirag
D:\JAVA>
```

Ex. No: 26 ARITHMATIC OPERATIONS USING PACKAGE

Aim : To write a program to perform arithmetic operations using package.

PACKAGE:

```
package ARI;
public class clspackage
{
public int add(int a,int b)
{
return(a+b);
}
public int sub(int c, int d)
{
return(c-d);
}
public int mul(int e, int f)
{
return(e*f);
}
public int div(int g, int h)
{
return(g/h);
}
}
```

MAIN PROGRAM:

```
import java.io.*;
import ARI.*;
class clsmain
{
public static void main(String args[])throws IOException
{
BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
int a,b;
System.out.println("Enter the numbers:");
a=Integer.parseInt(br.readLine());
b=Integer.parseInt(br.readLine());
clspackage r = new clspackage();
System.out.println(a + " + " + b + " = " +r.add(a,b));
```

```
System.out.println(a + " - " + b + " = " +r.sub(a,b));
System.out.println(a + " * " + b + " = " +r.mul(a,b));
System.out.println(a + " / " + b + " = " +r.div(a,b));
}
}
```

OUTPUT:

```
D:\JAVA>cd ARI
D:\JAVA\ARI>javac clspackage.java
D:\JAVA\ARI>cd..
D:\JAVA>javac clsmain.java
D:\JAVA>java clsmain
Enter the numbers:
5
6
5 + 6 = 11
5 - 6 = -1
5 * 6 = 30
5 / 6 = 0
D:\JAVA>
```

Ex. No: 27 IMPLEMENTING INTERFACES

Aim : To write a program to implement multiple inheritance using interfaces.

PROGRAM:

```
import java.io.*;
class student
{
int rno;
void getno(int n)
{
rno = n;
}
void putno()
{
System.out.println("RegNo:"+rno);
}
}
class Test extends student
{
float m1,m2;
void getmarks(float a,float b)
{
m1=a;
m2=b;
}
void putmarks()
{
System.out.println("M1 :"+m1);
System.out.println("M2 :"+m2);
}}
interface sports
{
float sportwt =6.0f;
void putwt();
}
class Results extends Test implements sports
{
float tot;
public void putwt()
{
```

```
System.out.println("Sports wt :"+sportwt);
}
void display()
{
tot = m1+ m2 + sportwt;
putno();
putmarks();
putwt();
System.out.println("Total: " +tot);
}}
class clsmultiple
{public static void main(String args[])
{
Results r = new Results();
r.getno(1001);
r.getmarks(79f,95f);
r.display();
}}
```

OUTPUT:

```
D:\JAVA>javac clsmultiple.java
D:\JAVA>java clsmultiple
RegNo:1001
M1 :79.0
M2 :95.0
Sports wt :6.0
Total: 180.0
D:\JAVA>
```

Ex. No: 28 MANAGING ERRORS AND EXCEPTIONS

Aim : To write a program to display the concept of exception handling.

PROGRAM:

```
import java.io.*;
class clsexcept
{
public static void main(String args[])throws IOException
{
int a=10,b=7,c=7;
try
{
int x=a/(b-c);
System.out.println(x);
}
catch(Exception e)
{
System.out.println("Divide by zero error");
}
}
}
```

OUTPUT:

```
D:\JAVA>javac clsexcept.java
D:\JAVA>java clsexcept
 Divide by zero error
D:\JAVA>
```

Ex. No: 29 MULTITHREADING

Aim : To write a program to perform multithreading using multiple class method.

PROGRAM:

```
import java.io.*;
class A extends Thread
{
public void run()
{
for(int i=1;i<=5;i++)
{
System.out.println("i="+i);
}
}
}
class B extends Thread
{
public void run()
{
for (int j=1;j<=5;j++)
{
System.out.println("j="+j);
}
}
}
class C extends Thread
{
public void run()
{
for(int k=1;k<=5;k++)
{
System.out.println("k="+k);
}
}
}
class clsthread
{
public static void main(String args[])throws IOException
{
A a = new A();
```

```
B b = new B();
C c = new C();
a.start();
b.start();
c.start();
}
}
```

OUTPUT:

```
D:\JAVA>javac clsthread.java
D:\JAVA>java clsthread
i=1
j=1
k=1
 i=2
j=2
k=2
 i=3
j=3
k=3
 i=4
j=4
k=4
i=5
j=5
k=5
D:\JAVA>
```

Ex. No: 30 APPLET PROGRAM TO DRAW A HOUSE

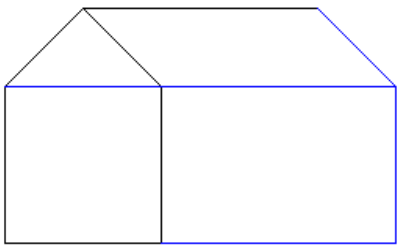
Aim : To write a program to use applet function to draw a shape of the house.

PROGRAM:

```
import java.awt.*;
import java.applet.*;
/*<applet code="appskel" width=300 height=100>
</applet>
*/
public class appskel extends Applet
{
public void paint(Graphics g)
{
g.drawLine(0,100,50,50);
g.drawLine(50,50,100,100);
g.drawLine(100,100,100,200);
g.drawLine(100,200,0,200);
g.drawLine(0,200,0,100);
g.drawLine(50,50,200,50);
g.setColor(Color.blue);
g.drawLine(200,50,250,100);
g.drawLine(250,100,250,200);
g.drawLine(250,200,100,200);
g.drawLine(250,100,0,100);
}
}
```

OUTPUT:

```
D:\JAVA>javac appskel.java
D:\JAVA>appletviewer appskel.java
```



Ex. No: 31 **APPLET PROGRAM TO DRAW A CAR**

Aim : To write a program to use applet function to draw a shape of the CAR.

PROGRAM:

```
import java.awt.*;
import java.applet.*;
/*<applet code="appskul" width=400 height=300>
</applet>
*/
public class appskul extends Applet
{
public void paint(Graphics g)
{
g.setColor(Color.red);
g.drawLine(100,40,300,40);
g.drawLine(100,40,100,100);
g.drawLine(200,40,200,100);
g.drawLine(300,40,300,100);
g.drawLine(100,100,300,100);
g.drawLine(100,100,0,150);
g.drawLine(0,150,0,200);
g.drawLine(0,200,350,200);
g.drawLine(350,200,350,150);
g.drawLine(350,150,300,100);
g.drawArc(75,200,50,50,0,360);
g.drawArc(275,200,50,50,0,360);
g.setColor(Color.cyan);
g.fillArc(75,200,50,50,0,360);
g.fillArc(275,200,50,50,0,360);
}
}
```

OUTPUT:

```
D:\JAVA>javac appskul.java
D:\JAVA>appletviewer appskul.java
```