1. Write a java program for Matrix Addition.

import java.util.\*;

public class hello {

public static void main(String args[])

{

int r, c,i,j;

Scanner in = new Scanner(System.in);

System.out.println("Enter the number of rows");

r = in.nextInt();

System.out.println("Enter the number columns");

c = in.nextInt();

int mat1[][] = new int[r][c];

int mat2[][] = new int[r][c];

int res[][] = new int[r][c];

System.out.println("Enter the elements of matrix1");

for ( i= 0 ; i < r ; i++ )

{

for ( j= 0 ; j < c ;j++ )

mat1[i][j] = in.nextInt();

System.out.println();

}

System.out.println("Enter the elements of matrix2");

for ( i= 0 ; i < r ; i++ )

{

for ( j= 0 ; j < c ;j++ )

mat2[i][j] = in.nextInt();

System.out.println();

}

for ( i= 0 ; i < r ; i++ )

for ( j= 0 ; j < c ;j++ )

res[i][j] = mat1[i][j] + mat2[i][j] ;

System.out.println("Sum of matrices:-");

for ( i= 0 ; i < r ; i++ )

{

for ( j= 0 ; j < c ;j++ )

System.out.print(res[i][j]+"\t");

System.out.println();

}

}

}

Output:

Enter the number of rows

2

Enter the number columns

2

Enter the elements of matrix1

2

3

4

5

Enter the elements of matrix2

6

7

8

9

Sum of matrices:-

8 10

12 14

2. Write a java program for Matrix Multiplication

import java.util.\*;

public class hello {

public static void main(String args[])

{

int r1, r2,c1,c2,i,j,k,sum;

Scanner in = new Scanner(System.in);

System.out.println("Enter the number of rows of matrix1");

r1 = in.nextInt();

System.out.println("Enter the number columns of matrix 1");

c1 = in.nextInt();

System.out.println("Enter the number of rows of matrix2");

r2 = in.nextInt();

System.out.println("Enter the number of columns of matrix 2");

c2 = in.nextInt();

if(c1==r2)

{

int mat1[][] = new int[r1][c1];

int mat2[][] = new int[r2][c2];

int res[][] = new int[r1][c2];

System.out.println("Enter the elements of matrix1");

for ( i= 0 ; i < r1 ; i++ )

{

for ( j= 0 ; j < c1 ;j++ )

mat1[i][j] = in.nextInt();

}

System.out.println("Enter the elements of matrix2");

for ( i= 0 ; i < r2 ; i++ )

{

for ( j= 0 ; j < c2 ;j++ )

mat2[i][j] = in.nextInt();

}

System.out.println("\n\noutput matrix:-");

for ( i= 0 ; i < r1 ; i++ )

for ( j= 0 ; j <c2;j++)

{

sum=0;

for ( k= 0 ; k <r2;k++ )

{

sum +=mat1[i][k]\*mat2[k][j] ;

}

res[i][j]=sum;

}

for ( i= 0 ; i < r1; i++ )

{

for ( j=0 ; j < c2;j++ )

System.out.print(res[i][j]+" ");

System.out.println();

}

}

else

System.out.print("multipication does not exist ");

}

}

}

Output:

Enter the number of rows of matrix1

3

Enter the number columns of matrix 1

3

Enter the number of rows of matrix2

3

Enter the number of columns of matrix 2

3

Enter the elements of matrix1

2

3

4

5

6

7

8

5

4

Enter the elements of matrix2

3

5

6

5

6

7

4

4

4

output matrix:-

37 44 49

73 89 100

1. 6 99

3.Write a java program to demonstrate method overloadingclass

DisplayOverloading3

{

public void disp(char c, int num)

{

System.out.println("first");

}

public void disp(int num, char c)

{

System.out.println("second" );

}

}

class hello

{

public static void main(String args[])

{

DisplayOverloading3 obj = new DisplayOverloading3();

obj.disp('x', 51 );

obj.disp(52, 'y');

}

}

Output:

first

second

1. 4. Write a java program to create a class Point with two data members x & y. Include all constructors and display().

class point{

int x;

int y;

point(int x,int y){

this.x=x;

this.y=y;

}

void display(){System.out.println(x+" "+y);}

}

class TestThis7{

public static void main(String args[]){

point s1=new point(111,12);

point s2=new point(112,12);

s1.display();

s2.display();

}}

Output:

111 12

112 12

5. Write a java program using static method.

class Cal{

static int cube(int x){

return x\*x\*x;

}

public static void main(String args[]){

int result=Cal.cube(5);

System.out.println(result);

}

}

Output:

125

1. What is conditional statement?

**Conditional statements :** A conditional statement is a statement that computer programming language used to decide which code has to be run when the true condition is met or which code has not to be run when the true condition is not met.

1. Write the syntax of switch..case statement.

**SYNTAX :**

switch(expression){

case value1:

//code to be executed;

break; //optional.

case value2:

//code to be executed;

break; //optional.

........

default:

  //code to be executed if all cases are not matched;

}

1. Write the difference between break and continue statement.

**Break statement :** Break statement mainly used to terminate the enclosing loop.

**Continue statement :** Continue statement mainly skip the rest of loop wherever continue is declared and execute the next iteration.

1. What is looping statement?

**Loop statement :** A loop statement is a series of steps or sequence of statements executed repeatedly zero or more times until the given condition is satisfied.

1. Write the difference between while and do..while statement.

**While loop :** Loop executes the code block only if the condition is True.

**Do While loop :** The condition is tested at the end of the loop.  So, the loop executes the statements in the code block at least once even if the condition Fails.

1. What is array? How it is created?

**Array :** An array is a container object that holds a fixed number of values of a single type.

**Creation of Array** : Obtaining an array is a two-step process.

**First,** you must declare a variable of the desired array type.

**Second,** you must allocate the memory that will hold the array, using new,

and assign it to the array variable.

1. What is class?

**Class :** A class is a user defined blueprint or prototype from which objects are created.  It represents the set of properties or methods that are common to all objects of one type.

1. What is constructor?

**Constructor** : A constructor in Java is a special method that is used to initialize objects. The constructor is called when an object of a class is created.

1. What is the use of copy constructor?

**Copy constructor :** It is a constructor that creates an object using another object of the same Java class. That's helpful when we want to copy a complex object that has several fields, or when we want to make a deep copy of an existing object.

1. What is the use of this keyword?

**this Keyword:** The this-keyword refers to the current object in a method or constructor.

**USE :** The most common use of the this-keyword is to eliminate the confusion between class attributes and parameters with the same name because a class attribute is shadowed by a method or constructor parameter.

1. What is method overloading?

**Method Overloading :** It is a feature that allows a class to have more than one method having the same name, if their argument lists are different.

1. What is static variable?

**Static variable :** A static variable is variable which belongs to the class and initialized only once at the start of the execution. It is a variable which belongs to the class and not to object.

1. What is access modifier?

**Access modifiers :** Access modifiers are a specific part of programming language syntax used to facilitate the encapsulation of components. Access modifiers (or access specifiers) are keywords in object-oriented languages that set the accessibility of classes, methods, and other members.

1. Write the difference between instance and static methods.

**Instance method :** Methods which require an object of its class to be created before it can be called.

**Static methods :**  Methods that can be called without creating an object of class.

1. What is object? How it is created?

**Objects** : An object is a software bundle of variables and related methods. An entity that has state and behavior is known as an object

**Creating Object :** In Java, you create an object by creating an instance of a class or, in other words, instantiating a class.

**Ex:** Date today = new Date();

This single statement actually performs three actions: declaration, instantiation, and initialization.