1.Write a java program for Matrix Addition.

**import** java.util.\*;

**public** **class** pgm1 {

**public** **static** **void** main(String[] args) {

Scanner sc=**new** Scanner(System.***in***);

**int** m=sc.nextInt();

**int** a[][]=**new** **int**[m][m];

**int** b[][]=**new** **int**[m][m];

**for**(**int** i=0;i<m;i++){

**for**(**int** j=0;j<m;j++){

a[i][j]=sc.nextInt();

}

}

**for**(**int** i=0;i<m;i++){

**for**(**int** j=0;j<m;j++){

b[i][j]=sc.nextInt();

}

}

**for**(**int** i=0;i<m;i++){

**for**(**int** j=0;j<m;j++){

System.***out***.print(a[i][j]+b[i][j]+" ");

}

System.***out***.println();

}

}

}

Output:

2 1 2 3 4 5 6 7 8

6 8

10 12

2.Write a java program for Matrix Multiplication.

**import** java.util.\*;

**public** **class** pgm1 {

**public** **static** **void** main(String[] args) {

Scanner sc=**new** Scanner(System.***in***);

**int** m=sc.nextInt();

**int** a[][]=**new** **int**[m][m];

**int** b[][]=**new** **int**[m][m];

**for**(**int** i=0;i<m;i++){

**for**(**int** j=0;j<m;j++){

a[i][j]=sc.nextInt();

}

}

**for**(**int** i=0;i<m;i++){

**for**(**int** j=0;j<m;j++){

b[i][j]=sc.nextInt();

}

}

**for**(**int** i=0;i<m;i++){

**for**(**int** j=0;j<m;j++){

**int** x=0;

**for**(**int** k=0;k<m;k++)

{

x+=a[i][k]\*b[k][j];

}

System.***out***.print(x+" ");

}

System.***out***.println();

}

}

}

Output:

2 1 2 3 4 5 6 7 8

19 22

43 50

3.Write a java program to demonstrate method overloading.

**public** **class** pgm1 {

**public** **void** show(){

System.***out***.print("This is method 1");

}

**public** **void** show(**int** m,**int** n){

System.***out***.print("This is method two with result"+m\*n);

}

**public** **void** show(**int** m,**int** n,**int** o){

System.***out***.println("This is method three with result"+(m+n+o));

}

**public** **static** **void** main(String[] args) {

pgm1 p=**new** pgm1();

p.show();

p.show(1,2);

p.show(3,4,5);

}

}

Output:

This is method 1

This is method two with result 2

This is method three with result 12

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

**public** **class** pgm1 {

**private** **int** x,y;

pgm1(){

System.***out***.println("Zero argument constructor");

}

pgm1(**int** x,**int** y){

**this**.x=x;

**this**.y=y;

System.***out***.println("Parameterized constructor"+(**this**.x+**this**.y));

}

pgm1(pgm1 p){

x=p.x;

y=p.y;

System.***out***.println("Copy Constructor"+x\*y);

}

**public** **static** **void** main(String[] args) {

pgm1 p1=**new** pgm1();

pgm1 p2=**new** pgm1(1,2);

pgm1 p3=**new** pgm1(p2);

}

}

Output:

Zero argument constructor

Parameterized constructor 3

Copy Constructor 2

5.Write a java program using static method.

**public** **class** pgm1 {

**public** **static** **void** show(){

System.***out***.println("This is a show method.");

}

**public** **static** **void** main(String[] args) {

*show*();

}

}

Output:

This is a show method.

----------------------Theoretical Questions---------------------------

1.What is conditional statement?

Ans:

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.

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

Ans:

we can use the switch statement as a substitute for long **if...else...if** ladders. The use of switch statements makes our code more readable.

Syntax:

switch(variable/expression){

case value1:

//statement of case1

break;

case value2:

//statement of case2

break;

...

default:

//default statements

3.Write the difference between break and continue statement.

Ans:

The main **difference between break and continue** is that **break** is used for immediate termination of loop. On the other hand, '**continue**' terminate the current iteration and resumes the control to the next iteration of the loop.

4.What is looping statement?

Ans:

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

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

Ans:

**While** loop is executed only when given condition is true. Whereas, **do**-**while** loop is executed for first time irrespective of the condition. After executing **while** loop for first time, then condition is checked.

6.What is array?How it is created?

Ans:

**Arrays** are used to store multiple values in a single variable, instead of declaring separate variables for each value. To declare an **array**, define the variable type with square brackets:

String[] cars;

We have now declared a variable that holds an **array** of strings.

7.What is class?

Ans:

Class is a collection of data members and member functions.It can also be called as a blueprint for creating objects.

8.What is constructor?

Ans:

It is a special member function for initializing the data members of a class.

The **constructor** is called when an object of a class is created.

9.what is the use of copy constructor?

Ans:

A **copy constructor** in a **Java** class 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.

10.what is the use of this keyword?

Ans:

The this **keyword** refers to the current object in a method or constructor. 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).

11.What is method overloading?

Ans:

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

12.What is static variable?

Ans:

A **static variable** is common to all the instances (or objects) of the class because it is a class level **variable**. In other words you can say that only a single copy of **static variable** is created and shared among all the instances of the class.

13.What is access modifier?

Ans:

In **Java**, **access modifiers** are used to set the accessibility (**visibility**) of classes, interfaces, variables, methods, constructors, data members, and the setter methods.

14.Write the difference between instance and static methods.

Ans:

**Instance method** are **methods** which require an object of its class to be created before it can be called. **Static methods** are the **methods in Java** that can be called without creating an object of class.

15.What is object? How it is created?

Ans:

An **object** is an element (or instance) of a **class**; **objects** have the behaviours of their **class**.

In **Java**, the new keyword is used to **create** new **objects**.

Ex:

ClassName:A

A a=new A();