OOPS ASSIGNMENT

1. How to create an object in Java

There are several ways by which we can create objects of a class in Java as we all know a class produces the blueprint for objects, you create an object from a class. This concept is under-rate and sometimes proves to be beneficial as this concept is bypassed by many programmers sometimes even asking from an interview perceptive.

Methods:

There are many different ways to create objects in Java. the help of programs to illustrate internal working by

which we can create objects in Java

Cy Using new keyword

8y Using new instance

y Using clone() method

4y Using deserialization

by Using newInstance() method of constructor class

Let us Discuss them one by one and implement the same by appending a clean Java program for the saDe.

M0thod 1: Using n0w k0yword

Using the new keyword in Java is the most basic way to create an object. This is the most common way to create an object in Java. Almost 99% of objects are created in this way by using this method we can call any constructor, we want to call (no argument or parameterized constructors5.

2. What is the use of a new keyword in Java

The "new" keyword in Java is used to create an instance of an object. It allocates memory to an object and returns a reference to the object created. It is used with a constructor to create an object.

3. What are the different types of variables in Java_

Static Variable

Instance variables

Local Variables

4. What is the difference between Instance variables and Local variables?

Instance Variable	Local Variable
They are defined in class but outside the body of methods.	They are defined as a type of variable declared within programming blocks or subroutines.

Instance Variable	Local Variable
These variables are created when an object is instantiated and are accessible to all constructors, methods, or blocks in class.	These variables are created when a block, method or constructor is started and the variable will be destroyed once it exits the block, method, or constructor.
These variables are destroyed when the object is destroyed.	These variables are destroyed when the constructor or method is exited.
It can be accessed throughout the class.	Its access is limited to the method in which it is declared.
They are used to reserving memory for data that the class needs and that too for the lifetime of the object.	They are used to decreasing dependencies between components I.e., the complexity of code is decreased.
These variables are given a default value if it is not assigned by code.	These variables do not always have some value, so there must be a value assigned by code.
It is not compulsory to initialize instance variables before use.	It is important to initialize local variables before use.
It includes access modifiers such as private, public, protected, etc.	It does not include any access modifiers such as private, public, protected, etc.

5. In which area memory is allocated for instance variable and a local variable?

Ans Instance variables are allocated in the heap and local variables are allocated in the stack.

6. What is method overloading?

Method overloading in Java is a feature that allows a class to have multiple methods with the same name

but different parameters. The Java compiler distinguishes these methods by the number, type, and order of parameters. Overloading is used to provide multiple ways to call a method for different use cases, making code more readable and reusable.