# day-010-oops-assignment

## 1. How to Create an Object in Java?

Using the new keyword is the most popular way to create an object or instance of the class. When we create an instance of the class by using the new keyword, it allocates memory (heap) for the newly created object and also returns the reference of that object to that memory. The new keyword is also used to create an array. The syntax for creating an object is:

ClassName object = new ClassName();

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

The new keyword in Java instantiates a class by allocating desired memory for an associated new object. It then returns a reference to that memory. Many times, the new keyword in Java is also used to create the array object. The new keyword is followed by a call to a constructor, which instantiates the new object.

## 3. What are the different types of variables in Java?

Local variable: This is a variable that is declared inside the body of a method.

Instance variable: This Java variable is defined without the STATIC keyword, but as outside of a method declaration. They are object-specific variables, which is why they are known by this name.

Static variable: This variable is initialised only once, just when the program execution starts. It is the variable that should be initialised first, especially before an instance variable is initialised.

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

Instance variables − Instance variables are declared in a class, but outside a method. When space is allocated for an object in the heap, a slot for each instance variable value is created. Instance variables hold values that must be referenced by

more than one method, constructor or block, or essential parts of an object's state that must be present throughout the class.

Local variables − Local variables are declared in methods, constructors, or blocks. Local variables are created when the method, constructor or block is entered and the variable will be destroyed once it exits the method, constructor, or block.

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

Stack is a memory place where the methods and the local variables are stored. (variable references either primitive or object references are also stored in the stack). Heap is a memory place where the objects and its instance variable are stored.

## 6. What is method overloading?

Method Overloading allows different methods to have the same name, but different signatures where the signature can differ by the number of input parameters or type of input parameters, or a mixture of both.

Method overloading is also known as Compile-time Polymorphism, Static Polymorphism, or Early binding in Java. In Method overloading compared to parent argument, child argument will get the highest priority.