day-018-019-static-assignment

1. Why do we need static keyword in Java Explain with an example?

The static keyword in Java is used for memory management mainly. It is used to create class methods and variables. It is also used to apply constraint to the class members.

For example, the following code shows how to use the static keyword to create a static method and a static variable:

```
public class MyClass {
  // static method
  public static void myStaticMethod() {
    System.out.println("Static methods can be called without creating objects");
  }

  // static variable
  public static int myStaticVariable = 0;

  // public constructor
  public MyClass() {
    myStaticVariable++;
    System.out.println("Value of myStaticVariable:" + myStaticVariable);
  }
}
```

2. What is class loading and how does the Java program actually executes?

Class loading is the process of loading class files into the Java Virtual Machine (JVM). When a program is executed, the JVM loads class files requested by the program into the memory. The program execution starts when the main method is invoked by the JVM. The main method is the entry point of the program execution.

3. Can we mark a local variable as static

Yes, you can mark a local variable as static in Java. The static keyword can be used to declare a local variable as a class variable. This allows the local variable to be shared among the various instance methods and constructors.

4. Why is the static block executed before the main method in java?

The static block in Java is executed before the main method is called because it contains code needed to initialize the class, and this code needs to be executed before any objects of that class can be used. For example, static blocks are sometimes used to register JDBC drivers, which must be available for the main method to use.

5. Why is a static method also called a class method?

A static method in Java is also called a class method because it is tied to the class, rather than any particular instance of that class. It can be called without having to create an instance of the class first and does not operate on any instance-level data. Therefore, it behaves as if it belongs to the class itself.

6. What is the use of static blocks in java?

Static block in java is used for changing the default value of static variables, initializing static variables of the class, write a set of codes that you want to execute during the class loading in memory.

7. Difference between Static and Instance variables

Instance variables are created when an object is created with the use of the keyword 'new' and destroyed when the object is destroyed. Static variables are created when the program starts and destroyed when the program stops. Instance variables can be accessed directly by calling the variable name inside the class.

8. Difference between static and non static members

A static method is a class method and belongs to the class itself. This means you do not need an instance in order to use a static method. A non-static method is an instance method and belongs to each object that is generated from the class.