

1. why do we need static keyword in java explain with an example

Ans: One such frequently used keyword in Java is the “Static” keyword. The most important reason why static keywords are heavily used in Java is to efficiently manage memory. Generally, if you want to access variables or methods inside a class, you first need to create an instance or object of that class.

2. what is class loading and how does the java program actually executes

Ans: Class loaders are responsible for loading Java classes dynamically to the JVM (Java Virtual Machine) during runtime. They're also part of the JRE (Java Runtime Environment). Therefore, the JVM doesn't need to know about the underlying files or file systems in order to run Java programs thanks to class loaders.

3. can we mark a local variable as static

Ans: Java does not allow static local variables. The compiler will throw the compilation error

4. why is the static block excuted before a main method in java

Ans: The static blocks always execute first before the main() method in Java because the compiler stores them in memory at the time of class loading and before the object creation. Here, the compiler executes all the static blocks first, and after finishing the static block execution, it invokes the main() method.

5. why is the static method also called a class method

Ans: A static method is a method that belongs to a class rather than an instance of a class. This means you can call a static method without creating an object of the class. Static methods are sometimes called class methods

6. what is the use of static block in java

Ans: 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 variable

Static variable	Instance variable
A static variable is a property of a class.	An instance variable is a property of an instance.
A static variable is created only once when the classloader loads the class.	An instance variable is created everytime an instance is created.
A static variable is used when you want to store a value that represents all the instances like count, sum, average etc.	An instance variable is used to store a value that represents property of single instance.
Static Variables are declared using keyword 'static'.	Instance Variables are declared without using keyword 'static'.

All objects of a class share the same copy of static variables.	Each object of the class gets its own copy of instance variables.
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