

Assignment Questions Day -18(Static keywords)

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

Answer – Static keyword is mainly used for memory management in Java.

The static keyword is used for a constant variable or a method that is the same for every instance of a class.

A Static keyword can be applied with variables, blocks, function and class.

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

Answer – In java, class loading is the process of loading class files into the JVM(Java Virtual Machine) at runtime . It is responsible for loading classes from various sources, such as the filesystem , network and databases and making them available to the JVM for execution

The class loading process in java is divided into three phases:

Loading - In the loading phase, the class loader locates the class name , reads the class file ,and convert it into a class object . The class object contains the metadata of the class , such as the fields, methods and constructors.

Linking – In the linking phase, the JVM performs several operations on the class object, such as verifying the class file integrity , resolving symbolic references and allocating memory for the class variables.

Initialization – In the initialization phase, the JVM initialization the class variables with their default values and runs the class's static initialization block.

Question 3 – Can we mark a local variable as static.

Answer- Unlike c , c++ , java does not allow static local variables . The compiler will throw the compilation error.

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

Answer – A static block is a block of code with static keyword. In general, these are used to initialize the static members. JVM executes static blocks before the main method at the time of class loading.

JVM first looks for the main method and then , starts executing the program including static block. Therefore, you cannot execute a static block without main method.

Question 5- Why is a static method also called a class method?

Answer – A static method is a method that belong 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 method are sometimes called class method.

Question 6-What is the use of static blocks in java?

Answer – A static block is used to initialize static data members. It is used to initialize before the main method at the time of class get loaded. It is not necessary to execute it again when creating different objects after the first time.

Question 7- Difference between static and instance variables.

Answer – Instance member is essentially anything within a class that is not marked as static. That is, that it can only be used after an instance of the class has been made (with the new keyword).This is because instance members belong to the object whereas static member belong to the class.

Static member are those which belong to the class and you can access these members without instantiating the class. The static keyword can be used with methods, fields , classes ,blocks.

Question 8-Difference between static and non-static members.

Answer – static variable is called “Class variables”.

These variables will get memory in the heap area.

If the value does not change from object to object, then we need to use static variables.

Inside a static area we can access static variable only.

Static variables are created using static keywords.

Non-static variables are called “Instance variables”.

These variables will get memory in the method area.

Inside a non-static area we can access both static and non-static variable.