

ASSIGNMENT

STATIC KEYWORD

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

Ans. Static keyword is used for memory management in java. A variable, block, method or class can be declared as static. If a variable or method is declared as static, the same copy of that is passed to every instance.

Example-

- `Static int a = 5; // static variable`
Same copy of this variable is passed to every instance.
- `Static // static block`
`{`
`}`
Static block is used to initialise the static variables. Static block is executed before the main method.
- `Static display()`
`{`
`}`
We can call the static method without creating the object of that class.
- `Static public Class abc{`
`}`
The methods of the static class can be called without creating objects of that class.

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

Ans. Class loading is the process of loading Java classes dynamically to the JVM (Java Virtual Machine) during runtime. They're also part of the JRE (Java Runtime Environment).

In the class loading, there are three phases: -

- Loading
- Linking
- Initializing

Loading is the process of finding the binary representation of a class or interface type with a particular name and creating a class or interface from that binary representation.

Linking is the process of taking a class or interface and combining it into the run-time state of the Java Virtual Machine so that it can be executed.

Initialization of a class or interface consists of executing the class or interface initialization method.

Q.3 Can we mark a local variable as static.

Ans. No, the compiler does not allow static local variables as the static variables are the class variables.

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

Ans. Static block is executed automatically at the time of class loading by JVM and after executing it the main() method is executed.

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

Ans. Because static methods are the methods which are defined at the class level.

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

Ans. Static blocks are used to initialise the static variables . Static block is executed before the main() method.

Q.7 Differentiate between static and instance variables.

Ans. Static variable is the property of the class and instance variable is the property of the instance.

Static variable is created only once while an instance variable is created every time an instance is created.

Q.8 Differentiate between static and non-static methods.

Ans. Static methods get memory in the method area while non-static methods get memory in the heap area.

If the value does not change from object to object then it will be a static variable and if the value changes from object to object then it will be a non-static variable.