

Understanding Static

- The **static keyword** is used in java mainly for memory management.
- It is used to define common functionalities of a java application.
- We may apply static keyword with variables, methods, blocks.
- The static keyword belongs to the class rather than instance of the class.
- The static can be:
 - Variable
 - Method
 - Block
 - Main Method

Static Variable:

- If you declare any variable as static, it is known static variable.
- The static variable can be used to refer the common property of all objects.(eg: company name of employees).
- In java applications it is possible to access the static variables either by using the respective class object reference (or) by using respective class name directly.
- Static variables never be 'local variables'.
- JVM executes static members according to their priorities.
- Static block and static variable will have equal priorities, so these execute in defined order.
- If a static variable and a local variable is having same name, Then compiler will first search for local variable and then static variable.

- For the static variables it is not required to perform initialization explicitly jvm will always provide default values.
- If we declare a static variable as final then 100% we should perform initialization explicitly whether we are using or not otherwise we will get compile time error.
- For final static variables JVM won't provide any default values, JVM will provide default values only for static variables.
- Final static variables can be initialized inside a static block. (any where else we will be getting compile time error)

Static Method

- If you apply static keyword with any method, it is known as static method
- A static method can be invoked without the need for creating an instance of a class.
- static method can access **static data member** and can change the value of it.
- In java applications it is possible to access the static methods either by using the respective class object reference (or) by using respective class name directly.

Restrictions for static method:

- The static method can not use **non static data** member or call non-static method directly.

Static Method Vs Instance Method

Static Method	Instance Method
A method i.e. declared as static is known as static method.	A method i.e. not declared as static is known as instance method
Object is not required to call static method.	Object is required to call instance methods.
Non-static (instance) members cannot be accessed in static context (static method, static block and static nested class) directly.	static and non-static variables both can be accessed in instance methods.