Class Methods

In Java, a method is nothing but a block of code/statement that is declared within the class and can perform different actions when someone calls it. Some methods can be called directly with their name (i.e. without creating the class object) while some methods require an instance/object of the class (i.e. must be invoked with the object of the class).

The methods that can be called directly are referred as a class or static methods, while the methods that need an object of the class to be invoked are referred as instance or non-static methods.

Generally, when we have a class then we have to create an object of that class to access its methods and other members. However, the class/static methods can be accessed inside of the class without creating an instance of that class.

Object Class Methods

Object class methods are available to all Java classes. They provide multiple methods which are as follows:

- tostring() method
- hashCode() method
- equals(Object obj) method
- finalize() method
- getClass() method
- clone() method

1. toString() method

The toString() provides a String representation of an object and is used to convert an object to a String.

2. hashCode() method

For every object, JVM generates a unique number which is a hashcode. It returns distinct integers for distinct objects.It returns a hash value that is used to search objects in a collection. JVM(Java Virtual Machine) uses the hashcode method while saving objects into hashing-related data structures like HashSet, HashMap, Hashtable, etc. The main advantage of saving objects based on hash code is that searching becomes easy.

3. equals(Object obj) method

It compares the given object to “this” object (the object on which the method is called). It gives a generic way to compare objects for equality.

4. getClass() method

It returns the class object of “this” object and is used to get the actual runtime class of the object. It can also be used to get metadata of this class. The returned Class object is the object that is locked by static synchronized methods of the represented class. As it is final so we don’t override it.

5. finalize() method

This method is called just before an object is garbage collected. It is called the Garbage Collector on an object when the garbage collector determines that there are no more references to the object.

6. clone()method

It returns a new object that is exactly the same as this object.