**What is immutable object and how to create custom immutable class?**

[How to create immutable class in java - javatpoint](https://www.javatpoint.com/how-to-create-immutable-class)

**Rules for creating immutable class**

* The instance variable of the class is final i.e. we cannot change the value of it after creating an object.
* The class is final so we cannot create the subclass.
* There are no setter methods i.e. we have no option to change the value of the instance variable.

There are many immutable classes like String, Boolean, Byte, Short, Integer, Long, Float, Double etc. In short, all the wrapper classes and String class is immutable.

[How to Create Immutable Class in Java? - JournalDev](https://www.journaldev.com/129/how-to-create-immutable-class-in-java)

**What is an immutable class in Java?**

**Immutable objects** are instances whose state doesn’t change after it has been initialized. For example, [String](https://www.journaldev.com/16928/java-string) is an immutable class and once instantiated its value never changes.

## How to Create an immutable class in Java?

To create an immutable class in Java, you have to do the following steps.

1. Declare the class as final so it can’t be extended.
2. Make all fields private so that direct access is not allowed.
3. Don’t provide setter methods for variables.
4. Make all **mutable fields final** so that its value can be assigned only once.
5. Initialize all the fields via a [constructor](https://www.journaldev.com/18899/constructor-in-java) performing deep copy.
6. Perform [cloning](https://www.journaldev.com/60/java-clone-object-cloning-java) of objects in the getter methods to return a copy rather than returning the actual object reference.

## Benefits of Immutable Class in Java

An immutable class is good for caching purposes because you don’t have to worry about the value changes.

Another benefit of immutable class is that it is inherently [**thread-safe**](https://www.journaldev.com/1061/thread-safety-in-java), so you don’t have to worry about thread safety in case of multi-threaded environment.

How HashMap works internally ?

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# HashTable vs HashMap vs Concurrent HashMap all kinds of Map implementations

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What is executor service

# Java ExecutorService - Part 1 - Introduction

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How to create customizable immutable objects?