

## Assignment 7

### Write down steps to create immutable class. What is the importance of immutable class?

Immutable class in java means that once an object is created, we cannot change its content. In Java, all the wrapper classes (like Integer, Boolean, Byte, Short) and String class is immutable.

Steps to create an immutable class:

- The class should be declared as final to prevent the creation of child classes.
- Data members in the class should be declared as private to restrict direct access.
- Data members in the class should be declared as final to prevent modification of their values after object creation.
- A parameterized constructor should initialize all fields while performing a deep copy to ensure that data members cannot be modified through object references.
- Deep copying of objects should be performed in the getter methods to return copies rather than actual object references.

Important of immutable class:

- Thread Safety: Immutable objects are inherently thread-safe.
- Simplicity: They simplify concurrent programming and debugging.
- Security: Immutable objects prevent unintended modification of their state.
- Performance: They can be cached and shared freely, reducing memory usage.
- Predictability: Immutable objects offer consistent and predictable behavior.
- Interoperability: They are easier to work with in concurrent and distributed systems.