Core Java Programming

Duration: 40-45 Hours
Prerequisites
- Knowledge of C Programming
- Knowledge of any object oriented language is advantageous

Core Java

1. **Introduction to Java**
   - History of Java
   - Features of Java
2. **Overview of Java**
   - OOP's Concept
   - Data types and Variables
   - Operators
   - Control Structures
   - Strings
   - Arrays
3. **Objects and Classes**
   - Object, Classes and Methods
   - Method Overloading
   - Constructors
   - Object class
4. **Inheritance**
   - Types of Inheritance
   - Method Overriding
   - Dynamic method dispatch
5. **Packages and Interfaces**
   - Defining Packages
   - Extending Interfaces
6. **Exception Handling**
   - Fundamentals of Exception Handling
   - Exception types
   - Try and Catch and finally
   - Throw , throws
   - Custom Exception
7. **Inner Class and Wrapper classes**
   - Inner Classes
   - Static Nested Classes
   - Wrapper Classes
   - Anonymous Inner Classes
8. **String Handling**
   - Creating Strings
   - String handling methods
   - String Buffer and String Builder
9. **Input and Output in Java**
   - Byte streams
   - Character streams
   - File
   - Serialization

10. **Collections Framework**
    - Collection Interfaces and Classes
    - Iterators
    - Comparators
11. **Multithreading**
    - Basics of java thread
    - The Thread Scheduler
    - Sleeping a thread
    - Joining a thread
    - Naming a thread
    - Daemon thread
    - Perform single /multiple task by multiple threads
    - Life Cycle of a Thread
    - Major Thread Concepts
    - Garbage Collection
12. **Reflection API**
    - Overview of Reflection
    - Use of newIntance() method and determining the class Object
    - Accessing private method or member from outside the class
13. **Lambda Built-in Functional Interfaces**
    - Use primitive versions of functional Interface
    - java.util.function package
    - Use binary versions of functional Interface
    - Use the UnaryOperator Interface