



CORE JAVA

Duration- 4 Weeks

Java Basics

- Language and Platform Features
- Program Life Cycle
- The Java SE Development Kit (JDK)

Class and Object Basics

- The Object Model and Object-Oriented Programming
- Classes, References, and Instantiation
- Adding Data to a Class Definition
- Adding Methods (Behavior)

More on Classes and Objects

- Accessing data, the "this" variable
- Encapsulation and Access Control, public and private Access
- Constructors and Initialization
- Static Members of a Class
- Scopes, Blocks, References to Objects

Flow of Control

- Branching: if, if-else, switch
- Iteration: while, do-while, for, break, continue

Strings and Arrays

- String,
- StringBuffer,
- StringBuilder
- Arrays,
- Primitive Arrays,
- Arrays of Reference Types

Packages

- Package Overview - Using Packages to Organize Code
- import statements
- Creating Packages, package Statement, Required Directory Structure
- Finding Classes, Packages and Classpath

Inheritance

- Using Composition to Deal With Complexity
- Composition/HAS-A, Delegation
- Using Inheritance and Polymorphism to share commonality
- IS-A, extends, Inheriting Features, Overriding Methods, Using Polymorphism
- Class Object
- Abstract Classes

Interfaces

- Using Interfaces to Define Types
- Interfaces VS Abstract Classes
- Nested Interface

Exceptions

- Exceptions and the Exception Hierarchy
- try and catch
- Handling Exceptions
- Program Flow with Exceptions
- Finally

Thread Handling

- Delegation-Based Stream Model
- Life Cycle of a Thread
- Creating Thread
- Thread Scheduler
- Sleeping a thread
- Start a thread twice
- Calling run() method
- Joining a thread
- Naming a thread
- Thread Priority
- Thread Pool

Java Collections

- The Collections Framework and its API
- Collections
- Collection, Set, List, Map, Iterator
- Autoboxing
- Collections of Object (non-generic)
- Using ArrayList, HashSet, and HashMap



File Handling I/O

- Delegation-Based Stream Model
- InputStream and OutputStream
- Filtering Streams
- Readers and Writers
- File Class
- File Streams