Core Java   **(50 hours)**

Introduction to OOPS

Introduction to Java

Intro to JDK, JRE, JVM

Installing JDK-17

Setting up the environment

Intro to Eclipse IDE

Hello World Program

Datatypes

Variables and their types

Methods

Casting in Java

Precision of data

Operators in Java

Conditional Construct and Looping Construct

Classes and Objects

Access Specifiers

Arrays

Constructors

Inheritance

IS-A and HAS-A relationship

this keyword, this method

super keyword, super method

instanceof operator

Virtual Method Invocation

Polymorphism and its types

- **Overloading**
- **Overriding**

Abstraction and its importance

Abstract Classes

Interfaces

String – A immutable Class

StringBuffer and StringBuilder

Keywords – static and final

Introduction to Collection Framework

Interface List, Set, and Map

All Essential classes in the Collection framework and its usages

Interface Comparable and Comparator

Deep dive into Generics

Inner Classes and their types

IO streams

Serialization and De-serialization

Use of transient keyword

Exception handling

Wrapper classes

Enum

Importance of threads

Lifecycle of threads

Ways of creating threads

Methods in Thread Class

Working with multiple threads

Synchronization of threads

Java DataBase Connectivity(JDBC)

    Introduction to drivers

    CRUD operation using Java Application

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Intro to Java 8

- **Functional Interface**
- **Lambda expressions**
- **Predefined Functional Interfaces**
- **Default Method**
- **Deep dive into Streams**
- **Optional class**
- **Working with Date and Time**
- **Working with Java NIO package**

Java 9

- **Modules**

Java 11

- **String class methods**
- **The local-variable syntax for lambda**
- **Collection to an Array**
- **Running Java files without compilation**

Java 12

- **switch case expression**

Java 13

- **switch case expression with a yield statement**

Java 15

- **Records**

Java 16

- **Day period support –symbol B**

Java 17

- **Sealed Classes**