

Core Java & OOPs (3 Months)

Duration: 3 Months (~120 Hours)

Mode: Live Online / Classroom

Designation after completion: Junior Java Developer / Java Programmer / Software Engineer (Entry-level)

Tools & Technologies: Java SE 11+, Eclipse/IntelliJ IDEA, JDK/JRE, JUnit, Maven, GitHub

Certifications prepared: Oracle Certified Java SE 11 Programmer, FreeCodeCamp Java Basics

Detailed Syllabus (12 Weeks)

Week 1

- Introduction to Java, JDK, JRE, JVM
- Setting up IDE (Eclipse/IntelliJ)
- Variables, Data Types, Operators
- Assignment

Week 2

- Control Structures: if-else, switch-case
- Loops: for, while, do-while
- Break & continue
- Assignment

Week 3

- Methods & method overloading
- Single & multidimensional arrays
- Enhanced for loop
- Assignment

Week 4

- Classes & Objects
- Constructors & this keyword
- Encapsulation (getters/setters)
- Assignment
- Mock Interview 1

Week 5

- Inheritance & Polymorphism
- Method overriding & super keyword
- Abstract classes
- Assignment

Week 6

- Interfaces & multiple inheritance
- Packages & access modifiers
- Importing packages
- Assignment

Week 7

- Exception Handling: try-catch-finally
- Throw & throws
- Custom exceptions
- Assignment

Week 8

- Collections Framework Part 1: ArrayList, LinkedList
- HashMap, HashSet
- Iterators
- Assignment
- Mock Interview 2

Week 9

- Collections Framework Part 2: TreeMap, LinkedHashMap
- Queue & PriorityQueue
- Sorting with Comparator & Comparable
- Assignment

Week 10

- Multithreading: Threads & Runnable
- Synchronization & Executor framework
- Deadlocks & prevention
- Assignment

Week 11

- File Handling: FileInputStream, FileOutputStream
- Readers/Writers
- Serialization & Deserialization
- Assignment

Week 12

- Java 8+ Features: Lambda expressions
- Streams API basics
- Optional, Date/Time API

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- Assignment
 - Mock Interview 3

Mini Projects

- Student Management System
- Library Management Console App