

CORE JAVA COMPLETE ROADMAP (Basic to Advanced – Industry Level)

PHASE 1: JAVA FUNDAMENTALS

Introduction to Java: History, Features, JDK, JRE, JVM, JVM Architecture, Bytecode

Data Types & Variables: Primitive, Non-Primitive, Wrapper Classes, Type Casting, Variable Types

Operators: Arithmetic, Relational, Logical, Bitwise, Assignment, Unary, Ternary

Control Statements: if, switch, loops, break, continue

PHASE 2: CORE PROGRAMMING

Methods: Declaration, Calling, Overloading, Var-args

Arrays: 1D, 2D, Jagged Arrays, Traversal, Arrays utility class

PHASE 3: OOP CONCEPTS

Class & Object, Constructors, Encapsulation, Inheritance, Polymorphism, Abstraction

PHASE 4: KEYWORDS

Access Modifiers, Packages, static, final

PHASE 5: STRING HANDLING

String class, String immutability, StringBuffer, StringBuilder

PHASE 6: EXCEPTION HANDLING

Checked & Unchecked Exceptions, try-catch, finally, throw, throws, Custom Exceptions

PHASE 7: MULTITHREADING

Thread lifecycle, Thread class, Runnable, Synchronization, Inter-thread communication

PHASE 8: COLLECTION FRAMEWORK

List, Set, Map, Comparable, Comparator

PHASE 9: JAVA 8 FEATURES

Lambda Expressions, Functional Interfaces, Stream API, Optional, Method References

PHASE 10: FILE HANDLING

File class, Byte & Character Streams, Serialization

PHASE 11: JDBC

JDBC Architecture, CRUD Operations, PreparedStatement

PHASE 12: ADVANCED JAVA

Reflection API, Annotations, Inner Classes, Garbage Collection

PHASE 13: BEST PRACTICES

Coding Standards, SOLID Principles, Design Patterns