

# Java Fundamentals

## Course Outline & Resources

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### Overview

This concise course establishes a solid foundation in Java Standard Edition by covering language syntax, object-oriented principles and essential APIs. Upon completion you will be able to write, compile and run Java programs, apply core OOP concepts and work confidently with collections, exceptions and I/O.

### Key Topics

- Java toolchain: JDK, compiler, IDEs, build tools
- Language basics & control flow
- Core data structures & arrays
- Object-oriented programming (classes, inheritance, interfaces)
- Generics & collections framework
- Exception handling & debugging
- File I/O & basic serialization
- Unit testing with JUnit

### Suggested 8-Week Schedule

Week 1-2 : Language basics, variables, methods  
Week 3-4 : OOP principles, packages, visibility  
Week 5-6 : Collections, generics, streams intro  
Week 7 : Exceptions, logging, debugging  
Week 8 : Mini-project & assessment

### Recommended Resources

- "Effective Java" – Joshua Bloch
- "Java: The Complete Reference" – H. Schildt
- Oracle Java Tutorials – [docs.oracle.com/javase/tutorial](https://docs.oracle.com/javase/tutorial)
- JetBrains Academy Java Track – [jetbrains.com/academy](https://jetbrains.com/academy)