

# Java

Learn Java programming with this entry-level software development training. Explore both basic and advanced Java skills and techniques, including variables, control flow, object-oriented features, unit testing, and error handling. Ideal for beginners or experienced developers, this Java course is perfect for onboarding, team training, or as a software development reference resource.

[CBT Nuggets course material](#) →

## WEEK 1

### Introduction to the Java Language

105 min.

Introduction	1
Creating and Running a Java with Eclipse	1
Basic Structure of a Java Program	1
Java Syntax Rules	1
Declaring Variables in Java	1
Writing and Running Java without an IDE	1

### Java Control Structures

Overview	1
Introduction	1
Getting User Input	1
If, Else, and Else If in Java	1
For-Loops in Java	1
Using For-Loops with Arrays	1
While-Loops in Java	1

### Object-Oriented Programming (OOP) Basics in Java

Overview	1
Introduction	1
How Classes and Instances Work	1
Defining Classes with Instance Variables and Methods	1
Creating Instances and Changing Data Visibility	1
Custom Constructors	1
The toString Method	1

### Inheritance Basics in Java

Overview	1
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Introduction	1
Basics of Inheritance	1
Method Overriding and Other Inheritance Details	1
Overriding the "toString" Method	1
The "instanceof" Operator	1
<b>Collections in Java: Lists</b>	
Overview	1
Introduction	1
The Java Collection Hierarchy	1
The ArrayList Class	1
The LinkedList and Vector Classes	1
Using Lists with Different Data Types	1
<b>Collections in Java: Queues</b>	
Overview	1
Introduction	1
Basics of Queues	1
Important Queue Methods	1
Queues vs. Deques	1
Using LinkedLists as a Deque	1
What is an Interface anyway?	1
<b>Data Types in Java</b>	
Overview	1
Introduction	1
Introduction to Java's Type System	1
Java's Number-Related Primitives	1
Other Primitives in Java	1

Arrays in Java	1
<b>Collections in Java: Sets</b>	
Overview	1
Introduction	1
Basics of Sets	1
The Main Set Types	1
Creating Sets	1
Important Set Methods	1
Methods for Set Operations	1
<b>Data Structures in Java: Maps</b>	
Overview	1
Introduction	1
Basics of Maps	1
The Map Inheritance Hierarchy	1
Working with HashMaps	1
Working with Other Map Types	1
A Simple Map Exercise	1
<b>Exception Handling in Java</b>	
Overview	1
Introduction	1
What are Exceptions Anyway?	1
The Java Exception Hierarchy	1
Try-Catch Block Basics	1
Checked vs. Unchecked Exceptions	1
<b>Concurrent Programming Basics in Java</b>	
Overview	1

Introduction	1
The Main Idea of Concurrent Programming	1
Creating New Threads	1
A Multithreaded Example	1
An Alternative Thread Syntax	1

## **Working with Files in Java**

Overview	1
Introduction	1
Basic File-Related Classes	1
Working with the File Class	1
Other File System Operations	1
Writing Data to Files	1
Reading Data from Files	1
BufferedWriter, BufferedReader, and Scanner	1

## **GUI Programming with Swing Basics**

Overview	1
Introduction	1
The Most Important Swing Components	1
Creating a Simple Interface	1
Event Handling	1
Swing Layout Managers	1

## **Networking Basics in Java**

Overview	1
Introduction	1
Making Network Requests	1
Making Network Requests (The Hard Way)	1

Parsing JSON Data	1
Writing a Complete Networking Program	1