

# Oracle Certified Professional: Java SE 11 Developer

Advance your Java skills with this Java SE 11 Developer Training course. Built for experienced developers, it prepares you for the Oracle Certified Professional exam through comprehensive, hands-on practice. Learn to work with Java data types, arrays, and collections; control program flow; and master exception handling. Gain experience with streams, lambda expressions, concurrency, JDBC API, I/O, and the Java Platform Module System. You'll also cover secure coding, localization, and annotations to round out your expertise. Plus, walk through leveraging Java to build your own simple AI agent using ChatGPT. This Java certification course ensures you're ready to pass the Java certification exam and apply real-world Java development techniques with confidence.

[CBT Nuggets course material](#) →

## WEEK 1

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### Getting Started with Java SE 11

Different IDE Options for Development  
Writing and Running Java Code  
Packages, Classes, Methods, and Control Structures  
Getting User Input  
Challenge & Solution

### The Java SE 11 Type System

An Overview of the Java SE 11 Type System  
The Primitive Types  
Wrapper Classes for Primitive Types  
Type Inference, Type-Casting, and Type Promotion  
Challenge & Solution

### If-Statements, Loops, and Methods

Basics of If-Statements  
Basics of Loops  
Basics of Methods  
Challenge & Solution

### Advanced Control-Structure Concepts in Java SE 11

The Do-While Loop  
The For Loop  
Switch-Case Statements  
Challenge & Solution

## WEEK 2

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## **Practicing Data Types and Control Structures**

Exercise 1

Exercise 2

Exercise 3

Exercise 4 (Challenge & Solution)

## **Working with Enums in Java SE 11**

What Are Enums?

Using Enums with Switch-Case Statements

Using Enums with User Input

Associating Custom Values with Enums

Challenge & Solution

## **Strings in Java SE 11**

Basic String Concepts

Built-In String Methods

The StringBuilder Class

Challenge & Solution

## **Arrays in Java SE 11**

Basics of Arrays

Looping Through Arrays

Creating Arrays Element By Element

Challenge & Solution

## **Working with Classes and Objects**

Basics of Classes, Instances, and Objects

Creating Useful Classes

Making Instance Variables Private

Challenge & Solution

## **A Guide to Java SE 11 Method Types**

The Different Method Types in Java SE 11

Instance Counting - An Example of Static vs. Instance Methods

Data Visibility with Static Methods and Variables

Challenge & Solution

## **Object-Oriented Programming in Java SE 11**

The Basics of Object-Oriented Programming

### **WEEK 3**

Object-Oriented Programming Core Concepts

The Core Concepts Demontstrated

Challenge & Solution

## **Practicing Object-Oriented Programming**

Exercise 1

Exercise 2

Exercise 3

Challenge & Solution

## **Working with Inheritance in Java SE 11**

Basic Inheritance in Java

Inheriting Instance Variables

Constructor Method Inheritance Rules

Challenge & Solution

## **Object-Oriented Design Patterns**

Basics of Design Patterns

Applying Design Patterns

The Strategy Pattern  
Applying the Strategy Pattern  
Challenge & Solution

### **Working with Dates and Times**

Introduction to Java 11's Modern Date & Time API  
Working with LocalDate  
Working with LocalTime  
Combining Date and Time with LocalDateTime  
Challenge & Solution

### **Abstract Classes and Interfaces**

What are Abstract Classes and Interfaces?  
Abstract Class Syntax and Usage

## **WEEK 4**

Interface Syntax and Usage  
Challenge & Solution

### **Java SE 11 Collections**

What are Java Collections?  
Working with Lists  
Working with Sets  
Challenge & Solution

### **Practicing Java SE 11 Collections**

Exercise 1  
Exercise 2  
Exercise 3

Challenge & Solution

### **File I/O Basics in Java SE 11**

Reading Data from Files  
Writing Data to Files  
Reading Files Line By Line  
Other Useful File Operations  
Challenge & Solution

### **Basics of Streams in Java SE 11**

What Are Streams?  
Creating and Filtering Streams  
Mapping Streams  
Reducing Streams  
Challenge & Solution

### **Exception Handling in Java SE 11**

Introduction to Exceptions  
Try-Catch-Finally Blocks  
Commonly-Used Java Exceptions  
Challenge & Solution

### **Advanced Java SE 11 Exception Concepts**

Checked Exceptions and the "throws" Clause  
Unchecked vs. Checked Exceptions  
Throwing Your Own Exceptions  
Extending the Exception Class  
Challenge & Solution

## **Working with Generics in Java**

When Do We Need Generics?

Making a Class Generic

Creating Generic Methods

Using Bounded Generics

Challenge & Solution

## **Inner, Static, and Anonymous Classes**

Defining and Using Inner Classes

Inner Class Use Cases

Static Nested Classes

Anonymous Classes

Challenge & Solution

## **Try-With-Resources and Assertions**

Try-With-Resources in Java SE 11

Try-With-Resources with Custom Classes

Assertions in Java

Challenge & Solution

## **Advanced Object-Oriented Design Patterns**

The Template Method Pattern

Applying the Template Method Pattern

The Memento Pattern

Challenge & Solution

## **Asynchronous Programming in Java SE 11**

What is Asynchronous Programming?

Creating Threads with the Thread Class

Working with Executors

Using CompletableFutures

Challenge & Solution

## **Working with Network Requests in Java SE 11**

The Basics of Network Requests

Making a Simple GET Request

Making Asynchronous Requests

Challenge & Solution

## **Working with JSON in Java SE 11**

Adding Third-Party Libraries to a Java Project

Basic JSON Syntax

Converting JSON Data to Java Objects

Parsing JSON Network Responses

Challenge & Solution

## **Build a Simple Personal Expense Tracker**

Defining the App Structure

Storing Our Expenses

Defining an Expense Class

Parsing and Saving Expenses

Challenge & Solution

## **Complete the Personal Expense Tracker**

Layout Out the ExpenseService and Budget Classes

Implementing the ConsoleUI class

Adding Console Action Methods

Implementing the ExpenseService

Challenge & Solution

## **Building A Quiz Game**

Laying Out the App

Creating the "Question" Class

Defining Our Own Quiz Question Syntax

Converting Text Files Into Quiz Questions

Challenge & Solution

## **Completing the Quiz Game**

Creating a Question Interface

Adding Different Question Types

Creating an IO Class

Challenge & Solution

## **Building a Generative AI-Integrated Chatbot**

Creating and Using an API Key

Creating the Request and Response Classes

Creating an API Client Class

Communicating with the OpenAI API

Challenge & Solution

## **Building a Web Scraper**

How Does Web-Scraping Work?

Step 1

Step 2

Step 3

Challenge & Solution