Development

Back-end Developer: Java

👥 Personal mentor   🎓 Bachelor's-level diploma *

Learn software development using Java, one of the most widely-used programming languages in the world.

📅 TRAINING PERIOD
12 months of full-time study
24 months in apprenticeship**

⏱ PATH DURATION:
800 hours supervised

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This training program requires an estimated time commitment of 1600 hours: 800 hours of supervised training (projects coached by mentors) and 800 hours of guided training (courses and educational resources). In apprenticeship, the total training duration does not include the time spent at the company.
The training period can be extended in the case of part time training. This estimated average duration depends on the student entry level into training, their time allocated per week, their availability, their capacity, and learning pace.

*Développeur concepteur logiciel - code NSF 326t - Bachelor's-level diploma - certification professionnelle enregistrée au Répertoire National des Certifications Professionnelles (RNCP) par décision de France compétences publiée le 10/15/21

** Check training program eligibility based on the contract type (professional training contract or apprenticeship contract)

Training program last updated on Dec 21, 2023

Here at OpenClassrooms, we pinpoint the key skills needed for the most in-demand jobs and develop courses and diplomas to train our students in those areas. That's why we've developed this one-year bachelor's-level diploma in web development, which you can complete entirely online with the help of a dedicated mentor.

What will I do as a Java developer?

A Java developer is a **back-end developer** who specializes in using the **Java** programming language to build applications. As Java is an essential part of many types of applications, Java developers are highly sought after in a wide variety of sectors.

A Java developer may be in charge of:

- developing and improving an application software
- designing technical architecture
- implementing software tests and debugging code
- producing the design schema of a database
- writing technical and functional documentation
- analyzing customer needs
- selecting and advocating for suitable technical solutions
- keeping up with changes in technologies

If you're completely new to web development, you may still be wondering whether Java is the right developer path for you. You can learn more about the field of web development [here.](#)

How much will I earn?

Back-end web development can be a lucrative career with many prospects opening up as you continue to rack up valuable experience. Here is what you might expect to earn in your career as a Java developer:

United States

Beginner: $50,000 - $80,000

2-5 years: $70,000 - $90,000

5+ years: $100,000 +

United Kingdom

Beginner: £30,000 - £40,000

2-5 years: £40,000 - £50,000

5+ years: £50,000 +

Salaries will vary depending on your location or the location of your employer.

What are my job prospects?

This path can prepare you for the following jobs:

- Java developer
- Back-end developer

Java is also one of the languages used to program mobile [Android applications](#).

Developers are also called programmers, coders, or software engineers.

After a few years of experience, a developer can advance to a position of lead developer, software designer / architect, or technical director / tech lead.

Who is eligible to enroll?

To be eligible to earn this path's diploma, candidates must demonstrate proof of one of the following prerequisites:

- an associate's degree, or equivalent, in computer science, web development, or software development
- **or** a high school/secondary school degree, vocational certificate, or equivalent, and at least 2 years of professional experience in IT, web development, or software development

All other candidates will need to go through a specific admissions process. These candidates must have:

- an associate's degree, or equivalent, in any subject and at least 1 year of professional experience in any field
- **or** a high school/secondary school degree, vocational certificate, or equivalent in any subject and 3 years of professional experience in any field

- **and** a completed placement test consisting of:
  - OpenClassrooms course completion certificates from [Build Your First Web Pages With HTML and CSS](#), [Think like a computer: the logic of programming](#), and [Manage Your Code Project With Git & Github](#)
  - a personal programming project, accompanied by a 10-minute recorded video that explains the project itself and the code behind it

For all candidates, the admissions process starts with a form to validate the aforementioned prerequisites, as well as the alignment between the candidate's professional goals and this path. Any necessary documents for the candidate's application will be collected via this form. If necessary, an individual interview with the candidate will also be organized.

- **Language:** You will need to provide a certificate not older than 2 years to demonstrate a minimum level of English B2.

  Certificates accepted:

  - English Diploma from a secondary institution (private or public) or an accredited higher learning institution
  - Linguaskill minimum score: 160
  - BULATS minimum score: 60
  - TOEIC minimum score: 785
  - IELTS minimum score: 6.5
  - TOEFL iBT minimum score: 88
  - Cambridge FCE / CAE / BEC HIGHER / BEC VANTAGE minimum score or grade: B or 160
  - Certificate from a language center demonstrating a minimum level of B2 (including the number of training hours completed and the company signature or stamp)

  Don't have one of these certificates? [Find out where to take an exam](#).

- **Equipment:** Candidates must also have access to a computer (PC or Mac), headphones, a microphone, a webcam, and a good internet connection for mentoring sessions (3.2 Mbps upload and 1.8 Mbps for download). In addition, to master the skills on this path, you will need to:
  - Have at least 8 GB of RAM (16 GB is more comfortable) and 100 GB of storage space available on your computer.
  - Have administrator rights to your computer in order to install required programs.

What will I learn how to do?

In this path, you'll learn how to:

- Jump start your studies by defining a personal learning strategy.
- Program with the Java programming language.
- Use programming tools like an IDE, Git & GitHub and frameworks like Spring Boot.
- Ensure the basic security of a web application.
- Interpret user requirements and propose a technical solution.
- Use domain driven design to create UML diagrams.
- Design database schemas and connect to a database.
- Test your applications using test driven development.
- Practice agile web development.

How will I learn at OpenClassrooms?

Our learning method is unique and revolves around two elements: **professional projects** and dedicated **mentoring sessions.**

Projects
At OpenClassrooms, learning is project-driven because that's the fastest way to become proficient. Projects offer hands-on experience so you can hit the ground running when you start your new job.

Want to see an example of a project? Read our blog post here.

Mentorship
During your path, you will be assigned a mentor who will offer one-to-one support via weekly video conference sessions. This mentor will offer guidance on your projects, help define objectives and guide you until you reach them. Our mentors are dedicated professionals who are experts in their field and have experience in sharing their know-how with our students.

Any questions? Contact our student advisors at +44 20 3868 9900 or +1 (929) 376 0101, or request more information here. Opening hours: Monday to Friday 8.30am- 6.00pm UK time, until 1 pm Eastern Time.

Project 1 - 20 hours

Set Yourself Up For Success as a Java Back-end Developer

Create a learning plan to acquire the skills you need as a Java Developer. Choose tools to stay up-to-date with innovations in your field and develop your first website with HTML and CSS!

Skills

- Set up a system for staying up to date with technology
- Prepare for your training

Associated courses

Learn How to Learn

📶 Easy   🕐 6 hours

Learning quickly and effectively is a key skill that can improve your learning capacity and help you take control of your personal and professional development.

Stay Up to Date With Innovations in Your Field

📶 Easy   🕐 4 hours

Learn how to stay abreast of industry changes, pinpoint areas for professional development, and work more efficiently in the digital age.

Understanding the Web

📶 Easy   🕐 4 hours

Does the web interest you, but you aren't totally clear on how the whole thing works behind the scenes? Learn internet history, vocabulary, logistics, and more with this course!

📶 Easy

Project 2 - 65 hours
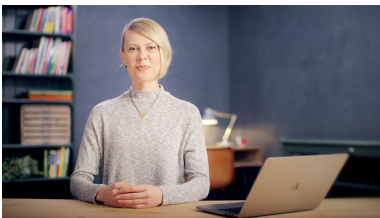
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Debug a Java application

You've been hired to finish an application another developer has started, and it's up to you to make sure that it gets up and running correctly! Get ready to make your mark and fix your first Java application!

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Skills

- Build a collaborative code project
- Program using Java fundamentals

Associated courses

Think like a computer: the logic of programming

📊 Easy   🕐 4 hours

Have you been thinking about a career in software development? Do you find computers and computer lingo a bit foreign? This course demystifies jargon and puts computer programming within reach!

Learn the Command Line in Terminal

📊 Easy   🕐 4 hours

The command line in Terminal is where a lot of programming efficiency happens. Take this course to better communicate with your computer!

Learn programming with Java

📊 Easy   🕐 15 hours

Find out how rewarding programming can be! In this course, you'll learn the principles of object-oriented programming, get hands-on practice with interactive exercises, and start your very own app!

Set up your Java development environment

📊 Easy   🕐 4 hours

Transform your computer into a programming powerhouse! Install everything you need to set up your first Java projects, including Eclipse, the most widely used integrated development environment.

Manage Your Code Project With Git and GitHub

📊 Easy   🕐 6 hours

Install Git and GitHub and learn basic Git commands to manage your code and deploy your development projects.

Project 3 - 65 hours

Design an Application to Fit Your Client's Needs

Analyze your client's needs, develop a domain model using a domain-driven design approach, create user stories, and design wireframes to get your client on board.

Skills

- Write detailed specifications
- List functionalities requested by the client
- Analyze a client's requirements
- Select a suitable technical solution

Associated courses

Write Agile Documentation: User Stories & Acceptance Tests

📶 Medium   🕐 10 hours

Learn to define user stories and acceptance tests and use the agile requirements format to store requirements on a wiki.

Apply a Domain-Driven Design Approach to Development

📶 Easy   🕐 4 hours

Use DDD to communicate the technical architecture to the various stakeholders in your project, and learn functional modeling using UML use-case diagrams and class diagrams.

Create Simple Prototypes With Wireframes

📶 Medium   🕐 15 hours

Use wireframes to communicate how a website or app will work. Diagram user flows to make sure the steps are all in place.

Project 4 - 70 hours

Fix and Update a Java Application Using Best Testing Practices

You're taking over work on an unfinished application and a number of tests are failing. Your mission is to fix the application and add a missing functionality so that your client leaves happy!

Skills

- Fix an application according to a test execution report
- Implement unit tests
- Produce a test execution report
- Implement integration tests

Associated courses

Use Testing in Java to Achieve Quality Applications

📊 Medium   🕐 10 hours

To create a quality app that users love, you've got to test it properly! Discover the power of unit, integration, and end-to-end tests, use test-driven development and leverage the power of JUnit and Mockito to deliver applications that do what they're supposed to do!

Debug Your Java Applications

📊 Easy   🕐 6 hours

Bugs getting into your Java code? Use tools like a Java debugger and its breakpoints, conditional breakpoints, and watchpoints to find and fix Java bugs. Use the scientific method to test your bug theories, all while using tools like JConsole, VisualVM, and a Java logger!

Project 5 - 120 hours

Create Your First Java Web Application From Scratch!

Implement an application to help first responders receive alerts using Spring Boot, a popular Java framework. You'll use quality code practices such as organizing your code with MVC, applying the SOLID principles, and respecting the Testing Pyramid!

Skills

- Develop a Spring Boot application
- Respect industry standard coding practices
- Justify the application design & programming languages selected

Associated courses

Use MVC, SOLID Principles, and Design Patterns in Java

.ıl Easy   🕓 4 hours

Make your apps cleaner, more robust, and more maintainable with SOLID design principles, Model View Controller architecture, and design patterns.

Build Your Web Projects With REST APIs

.ıl Easy   🕓 4 hours

Enhance your web projects with REST APIs by accessing data that can be integrated into your own applications. APIs will add a whole new dimension to your software!

Create Web Applications Efficiently With the Spring Boot MVC Framework

📊 Medium 🕐 15 hours

Speed up your Java web application development time with an MVC framework. Spring Boot does the heavy lifting for you so you can create better web applications, in much less time.

Project 6 - 130 hours

Work with Databases to Create a Secure Web Application

You're working on a money transfer app, which means you need to access and store data securely in a database. You'll design and implement your database schema in a relational database.

Skills

- Implement a data schema in a database
- Design the technical architecture of an application
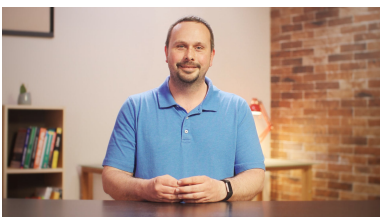- Produce a database design schema

Associated courses

Design the Logical Model of Your Relational Database

📊 Easy   🕐 4 hours

Ready to store your application's data? Let's cover the basics of SQL and design the structure of your first relational database with an Entity Relationship Diagram (ERD).

Implement a Relational Database with SQL

📊 Easy   🕐 4 hours

Ready to put your database modeling skills to use? Design and build a physical relational database with Structured Query Language (SQL) and learn the tools to manipulate your table data.

Persist Your Java Application's Data With the Repository Pattern

▮▮ Medium 🕐 6 hours

Persist Java objects into a relational database using JDBC and Hibernate. Use the repository pattern to organize persistence logic in your code!

Secure Your Web Application With Spring Security

▮▮ Hard 🕐 8 hours

Leverage the Spring Security framework to secure your Spring Boot web application with custom configurations and OAuth 2.0. Use secure programming techniques to protect against web application attacks!

Project 7 - 100 hours

Complete Your Java Back-End to Make Your Application More Secure

Modernize the backend of a financial application with a REST API. Make sure it's tested and ready for deployment!

Skills

- Implement REST APIs using best practices

Project 8 - 100 hours

Scale Up Your App With Distributed Systems

A travel agency has asked you to adapt its monolithic application so that it can evolve more easily. Now it's up to you to make a more efficient, decoupled web application!

Skills

- Fix faults reported by the customer on an application
- Complete a Unit and Integration test suite to account for changes
- Improve an application as per a customer request
- Produce technical and functional documentation for the application
- Configure a deployment environment to manage the lifecycle of an application

Associated courses

Scale Up Your Code With Java Concurrency

📶 Hard   🕐 12 hours

Use Java concurrency to decompose a hard problem into independently executing tasks with threads, thread pools, java.util.Concurrent collections, and more!

Decouple Your Web Architecture for Robust Java Applications

📶 Hard   🕐 4 hours

In this course, we'll look at the advantages of decoupling software and learn how to refactor a monolithic application into separate layers using an MVC (model-view-controller) framework.

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Write the Technical Documentation for Your Project

📊 Medium   🕐 6 hours

Produce clear and maintainable documentation for your project with naming conventions, README, API documentation tools, and a technical architecture document.

Project 9 - 130 hours

Develop a Complete Application For Your Client Using Agile Techniques

Build a medical app for disease risk screenings. Structure your app using a microservice and a NoSQL database. Organize your time into sprints, following Agile project management principles.

Skills

- Use NoSQL databases
- Create a microservice for an application
- Create a segmented REST API
- Implement Agile methodology to manage your code project

Associated courses

Get started with SCRUM
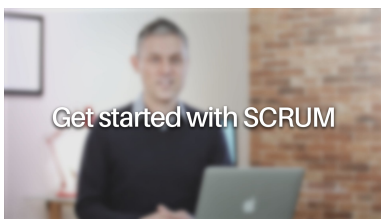
Learn About Agile Project Management and Scrum

📊 Easy   🕐 6 hours

Learn the principles of agile software development. Discover how a Scrum Team plans a Sprint, builds feedback, creates retrospectives, and holds daily stand-ups.