Développement

Back-end Developer: Java

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

Path duration: 800 hours

Job guarantee**

Apprenticeship duration: 24 months

Average duration of full-time study: 12 months

Bachelor's-level diploma*

OPENCLASSROOMS

One million computer programming jobs are estimated to be created in the U.S. by 2020 - as well as 700,000 in Europe - thanks to unprecedented growth in the tech sector.

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?

This path is accessible to all, but here are some recommendations:

- A high school diploma / GCSE level
- A good level of English (for non-native speakers, a CEFR level of B2, an IELTS band score of 6.5, or a TOEFL score of 80 is recommended)
- 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). You can use an internet speed test to find out like High Speed Internet. In addition, to master the skills on this path, you will need to:
    - Have at least 16 GB of RAM 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 - 40 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

- Design a personalized learning plan
- Integrate content according to a mock-up
- Select relevant information sources for a set of technologies
- Set up a system for staying up to date with technology

Associated courses

Learn How to Learn

▪▪ Easy   🕐 6 hours

The ability to learn quickly and effectively is a key skill that can open the door to any domain or career throughout your life. Follow this course to improve your learning capacity and to take control of your personal and professional development!

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!

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.

Build Your First Web Pages With HTML and CSS

📊 Easy   🕐 10 hours

Learn to create your first web pages using HTML and CSS, the two most important languages on the web. No coding experience required!

Create Web Page Layouts With CSS

📊 Easy   🕐 10 hours

Go beyond basic HTML and CSS skills and learn how to create great layouts using CSS layout techniques!
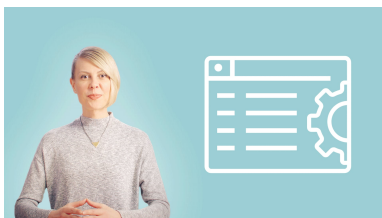
Project 2 - 55 hours

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!

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 & Github

📶 Easy   🕐 20 hours

Using Git and Github is key for programmers, especially when working on a team! Manage your source code and track changes to your files with version control. Fix mistakes with Git commands!

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

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

Associated courses

Write Agile Documentation: User Stories & Acceptance Tests

ıll Medium   🕐 10 hours

Learn to communicate in a project management environment! Define the details of a feature with 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

ıll 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 - 60 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 integration tests
- Implement unit tests
- Produce a test execution report

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
- Justify the application design & programming languages selected
- Respect industry standard coding practices

Associated courses

Use MVC, SOLID Principles, and Design Patterns in Java

▏▎▍ Easy   🕐 4 hours

Make your apps cleaner, more robust, and more maintainable with SOLID design principles, Model View Controller architecture, and design patterns.
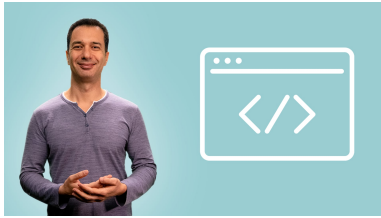
Build Your Web Projects With REST APIs

▏▎▍ Easy   🕐 4 hours

Learn how to enrich your web projects with REST and RESTful APIs! You'll be able to access other services' data that can then be integrated into your own applications. APIs will bring 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.
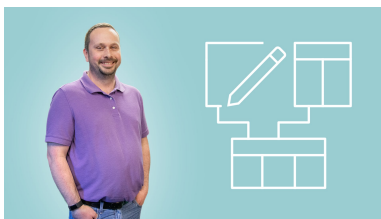
Project 6 - 130 hours

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

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

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

Make Your Java back-end More Adaptable With a REST API

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

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.

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

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

Associated courses

Learn About Agile Project Management and SCRUM

📊 Easy   🕐 15 hours

Learn the principles of Agile software development. Discover how a SCRUM team plans a sprint, builds feedback into each cycle, creates retrospectives, and holds daily standups.

alternance

OpenClassrooms, 1ère école en ligne
à proposer des formations diplômantes

L'alternance en ligne permet à l'entreprise et à l'étudiant de trouver le **meilleur rythme** adapté à leurs besoins respectifs.

Côté étudiant :

une formation diplômante et 100% financée

L'alternance est une modalité de formation qui mêle acquisition des connaissances (en ligne) et des compétences (en entreprise).

Comment se déroule un parcours en alternance OpenClassrooms ?

• Après avoir choisi le parcours de formation qui lui convient, **l'étudiant bénéficie d'un accompagnement gratuit de 2 mois pour trouver son entreprise**.

• La formation peut se réaliser en contrat de professionnalisation ou d'apprentissage. Rendez-vous à la page suivante pour savoir lequel choisir !

Est ce que la formation en alternance a un coût pour l'étudiant ?

• La formation en alternance est gratuite ! Une rémunération est également prévue : jusqu'à 100% du SMIC en fonction de votre âge et de votre année de formation.

• Pour se lancer, une seule adresse : **openclassrooms.com/fr/apprenticeship**

Côté entreprise :

l'accès à des profils qualifiés toute l'année, en toute simplicité !

OpenClassrooms est la 1ère école en ligne à proposer des **formations en alternance, aux titres reconnus par l'État** de niveau Bac+2 à Bac+5, sur des **métiers en tension, très recherchés par les recruteurs**. Les formations en alternance **peuvent être financées, soit par la taxe d'apprentissage, soit par les OPCO (Opérateurs de Compétences)**.

Comment lancer des parcours d'alternance au sein de l'entreprise ?

• Pour chercher des profils à recruter en alternance ou lancer le recrutement d'un étudiant déjà identifié, n'hésitez pas à contacter :
job.placement@openclassrooms.com

• Les équipes d'OpenClassrooms vous accompagnent à chaque étape d'une démarche d'alternance, du dossier de financement au suivi de vos alternants.

Quand peut-on lancer une démarche d'alternance au sein de l'entreprise ?

• À tout moment : le contrat peut démarrer tout au long de l'année, il n'y a pas de date de rentrée imposée.

Pourquoi l'alternance en ligne ?

Les avantages de l'alternance OpenClassrooms sont nombreux : **date de début flexible, formations créées par des experts métiers, accompagnement personnalisé, formation financée...**

1. Une formation gratuite pour l'étudiant et financée pour l'entreprise

- La formation est gratuite.

- Dans le cadre d'un **contrat de professionnalisation, elle est 100% financée** par votre OPCO.

- Dans le cadre d'un **contrat d'apprentissage**, elle est financée par la taxe d'apprentissage que paient les entreprises privées.

2. Une solution flexible, adaptée aux besoins de l'étudiant et de l'entreprise

- Le contrat peut démarrer **à tout moment de l'année**.

- Il est possible de faire soit un contrat de professionnalisation, soit un contrat d'apprentissage.

- Le(s) **jour(s)** dédié(s) à la **formation** est (sont) **flexible(s)** en fonction de l'organisation de l'étudiant et de l'entreprise.

3. Une formation de qualité, conçue pour une application directe au sein de l'entreprise.

- Les formations OpenClassrooms sont **professionnalisantes**. Elles sont conçues par et pour l'entreprise, sur des métiers recherchés.

- Les formations OpenClassrooms sont de qualité, avec des **diplômes inscrits au RNCP** (Répertoire National des Certifications Professionnelles) et dont les niveaux sont reconnus par l'État.

- Une plateforme collaborative favorise les échanges entre apprentis et aide à la recherche d'emploi.

- Des espaces de coworking sont proposés dans toute la France.

4. Un accompagnement dédié à chaque étape, pour l'étudiant comme pour l'entreprise

- Des **profils d'étudiants disponibles et pré-sélectionnés par nos experts pour répondre à vos besoins en recrutement sur toute la France**.

- Un accompagnement par nos conseillers pédagogiques **à chaque étape de l'alternance**.

- Un point de suivi hebdomadaire par un **mentor individuel** pour **motiver l'étudiant et l'accompagner** pendant toute sa formation.

Tout savoir sur les contrats d'alternance

Une question ? Un projet ?

Contacter : **job.placement@openclassrooms.com**

Contrat de professionnalisation

1 jour en formation / 4 jours en entreprise.

- L'entreprise embauche l'étudiant en CDD sur 12 ou 24 mois (selon le parcours de formation).
- La formation est financée par un OPCO. OpenClassrooms est référencé dans les principaux OPCO grâce à ses titres certifiés et sa certification Datadock.
- L'entreprise fait la démarche de demande de prise en charge auprès de son OPCO. Nos équipes sont présentes à chaque étape pour l'accompagner.
- L'étudiant est rémunéré **sur une base qui va de 65% à 100% du SMIC** (pour un étudiant de plus de 26 ans).
- Si l'étudiant a plus de 26 ans et est demandeur d'emploi, Pôle Emploi octroie une aide à l'emploi à l'entreprise.

Contrat d'apprentissage

2 jours en formation / 3 jours en entreprise.

- L'étudiant est embauché sur 12 ou 24 mois selon sa formation.
- Le contrat d'apprentissage concerne les personnes de 16 à 29 ans révolus (sans limite d'âge pour les publics RQTH, mais aussi les créateurs d'entreprise, les sportifs de haut niveau et l'encadrement de haut niveau).
- Le contrat d'apprentissage peut être signé par les employeurs dans le secteur public et les entreprises privées.
- La formation est **100% financée grâce à la taxe d'apprentissage** pour les entreprises du secteur privé. Pour le secteur public, une convention financière est établie entre OpenClassrooms et l'employeur.
- Une rémunération de l'apprenti est prévue : jusqu'à 100% du SMIC en fonction de son âge et de l'année de sa formation.
- Notre CFA vous accompagne dans toutes les démarches administratives concernant la mise en place de contrat d'apprentissage.