Invest Ottawa | Investir Ottawa

Xtreme Talent Accelerator Program (XTAP)

Web Development Bootcamp

Xtreme Talent Accelerator Program

OVERVIEW

12 Weeks

60+ Hours/Week

Web Development Certificate

Being a web developer requires so much more than just learning how to code. Over 12 weeks, you'll learn how to think, build and problem-solve like a professional and begin to see web development as an art form. You'll come to understand coding logic using popular languages and frameworks such as JavaScript and Ruby on Rails, while learning to build web applications from the ground up. This bootcamp will provide you with mentorship, a data-driven curriculum and a top-notch learning environment that will help launch you into your first Junior Web Developer role.

WHO IS THIS FOR?

You may be a recent graduate or someone looking for a career pivot. No tech background? No problem. Previous experience in data science, data analysis or programming is *not* required. All that is needed to be successful in this program is your willingness to work hard.

ELIGIBILITY

We invite you to apply if:

- ☑ You're unemployed, or
- ☑ You're working, but your job is unstable, inconsistent, uncertain or requires fewer than 20 hours per week, or
- ☑ Your family is living with low household income, and
- ☑ You have the time (60+ hours/week) to dedicate to participating in the program
- ☑ You'd like to build the skills needed to secure a longer-term career, and
- ☑ You're a resident of Ontario, and
- ☑ You're 18 years or older, and
- ☑ You're a Canadian Citizen, Permanent Resident or Protected Person

This program requires a commitment of 60+ hours per week for the 12-week duration. You will spend two hours each day, from Monday to Friday, on live lectures, and 8–10 hours on self-paced studies. It is estimated that you will likely need to spend 20–30 hours on projects and studies over weekends, as well.

WHAT YOU WILL LEARN

Designed and delivered by Lighthouse Labs, the bootcamp covers a myriad of industry-relevant technologies vetted by employers, subject matter experts and members of the broader tech community. In addition, career services offered by XTAP will help you develop important soft skills to get noticed and get ahead.

The Web Development Bootcamp

The curriculum covers:

- **JavaScript and Node.js**

  JavaScript is the universal programming language of the web. You'll gain firsthand experience with Javascript and Node ecosystems, as well as modern tooling and libraries such as Babel and webpack.

- **Databases and Data Modelling**

  Relational and document databases are two of the prevailing paradigms used today. We'll introduce you to SQL and object stores, and how to properly model a database.

- **Software Architecture**

  Understanding how software components should be organized is an essential skill for career growth as a developer. You'll learn software architecture by studying programming practices, from good database modelling to abstraction and well-encapsulated code, as well as modular design.

- **React**

  In a short span of time, React has become one of the most popular JavaScript frameworks. While building a single-page application, you'll learn a new way to think about structuring your user interface by using components, one-way data flow and the Virtual DOM.

- **HTML, CSS and More**

  HTML and CSS are the building blocks of the modern web. You'll learn to create responsive user interfaces for web apps not only with HTML5 and CSS3, but also modern front-end tools such as Babel and webpack.

- **Ruby on Rails**

  This dynamic duo of language and framework is one of the most widely used and polished modern technologies for web development. You will gain familiarity with core concepts within Rails, including the MVC design pattern and how to communicate with databases to persist data.

Your learning will prepare you to:

- ☑ Troubleshoot and debug problems associated with web development.
- ☑ Demonstrate problem-solving skills by developing basic algorithms to solve coding challenges or katas.
- ☑ Evaluate or analyze coding solutions and ideas, along with their limitations or benefits.
- ☑ Discuss components that make up a web application at the application layer.
- ☑ Contribute to full-stack web applications using modern software development patterns, tools and workflows, including:
  - Contributing to the backend of web applications that use industry-standard languages (Ruby) and frameworks (Rails and Express).
  - Contributing to existing front-end implementations that use modern SPA patterns (React).
  - Integrating into common development team workflows (Git, GitHub workflow, automated testing and code reviews).
  - Extending existing database design, as well as writing realistic SQL queries to CRUD data in SQL databases.
  - Creating API services and/or consumers that use modern data formats such as JSON.
- ☑ Describe the importance and practical applications of computer science concepts that apply to web development (Trees, Recursion and Big O).
- ☑ Work collaboratively within a development team to plan and produce a web application that meets a specific set of objectives.
- ☑ Employ specific learning strategies and frameworks to continue to building skills while on the job.
- ☑ Identify knowledge gaps, a growth path and specialization pathways, and develop actionable next steps for immediately after completing the program.

EMPLOYMENT PREPARATION, ON-THE-JOB SKILLS, AND ETHICS AND EMPLOYEE ADVOCACY

These additional career services provided by XTAP cover:

- ☑ Personality Assessments
- ☑ The Anatomy of a Strong Resume
- ☑ Virtual Interviewing Skills for Job Seekers
- ☑ Job Search Strategies
- ☑ Tech, EQ and You: Exploring and Understanding Emotional Intelligence in Tech
- ☑ Effective Communication in the Workplace
- ☑ Designing Your Professional Digital Presence
- ☑ Time Management
- ☑ Mental Health on the Job
- ☑ Diversity, Equity, and Inclusion — Call It Out: Racism, Racial Discrimination, and Human Rights
- ☑ Employee Rights in the Workplace

CAREER OUTLOOK

Successful graduates will be equipped to walk into any one of these roles:

- Junior Web Developer
- Junior Full-Stack Developer
- Junior Front-End Developer

YOUR LEARNING PATH

The Web Development Bootcamp is offered through a mix of daily live instructor-led lectures and self-paced work such as reading, group projects, assignments and quizzes. You will have access to tech mentors on-demand to get help with your specific questions and needs as you move through the independent and group work.

You will follow a vertical, module-based learning process covering the following topics:

1

Prep Work

- ☑ **The command line**
- ☑ **Version control**
- ☑ **Environment setup**
- ☑ **Introductory JavaScript**
- ☑ **HTML**

2

Fundamentals

- ☑ **JavaScript fundamentals**
- ☑ **Debugging**
- ☑ **Unit testing**
- ☑ **Asynchronous code**
- ☑ **Promises**
- ☑ **NPM and package management**
- ☑ **Test-driven development**

3

HTTP

- ☑ **Node.js**
- ☑ **Express**
- ☑ **HTTP**
- ☑ **JSON**
- ☑ **Git and Git workflow (including a project using TinyApp, a Bitly-like URL shortener)**

4

Front-End Fundamentals

- ☑ HTML5
- ☑ CSS3
- ☑ jQuery
- ☑ AJAX
- ☑ Client-side JS
- ☑ Responsive design (including a project using Tweeter, a single-page mini-Twitter clone)

5

Databases

- ☑ Git workflow
- ☑ Teamwork and project management (you will form groups to ideate and build your first full-stack web app from scratch)

6

Mid-Term Project

- ☑ Relational databases (using PostgreSQL)
- ☑ Completing complex database queries
- ☑ Document databases (using MongoDB)
- ☑ Database design
- ☑ Database performance
- ☑ Using databases in web applications

7

React

- ☑ Component-based design
- ☑ React
- ☑ Webpack
- ☑ Babel
- ☑ Component testing in React
- ☑ End-to-end testing (including a project using Scheduler)

8

Ruby/Rails and OOP

- ☑ Object-oriented programming
- ☑ Ruby
- ☑ Active Record
- ☑ Rails
- ☑ MVC (you will inherit a pre-existing Ruby on Rails e-commerce application, Jungle, and enhance it)

9

Advanced Topics

- ☑ Continuous integration
- ☑ Continuous delivery
- ☑ Code coverage
- ☑ Web infrastructure and DevOps introduction
- ☑ 12-Factor applications
- ☑ Prototypical inheritance in JavaScript
- ☑ OWASP (Web Application Security)

10

Final Project

- ☑ Build a fully functional web app from scratch, using a tech stack and team of your choosing!

DATES AND APPLICATION DEADLINES

September 13 — December 3, 2021
Application deadline: July 23, 2021

October 25, 2021 — January 28, 2022
Application deadline: September 25, 2021

November 2021 – February 2022
Application deadline: TBD

Ready to advance your career?

An application takes only 5–10 minutes to complete. Plus, you will be able to save it and return to finish later.

Apply Now

Invest Ottawa | Investir Ottawa

investottawa.ca/xtreme-talent-accelerator

Canada EMPLOYMENT ONTARIO Ontario

This Employment Ontario program is funded in part by the Government of Canada and the Government of Ontario.