



# Web Development Bootcamp

Curriculum Package

# The Lighthouse Labs Bootcamp Experience

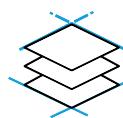
At Lighthouse Labs, we understand being a software developer requires so much more than just learning how to code. Over 12 challenging weeks, you'll learn how to think, build, and problem-solve as a developer. Each module of our immersive, industry-driven curriculum is designed to equip you with a strong foundation of skills to help you succeed and grow as a full-stack software developer.



**Industry-Driven Education**



**Community of Developers**  
(8:1 Mentor Ratio)



**Portfolio of Functioning Full Stack Applications**



**Personalized Learning Through Smaller Class Sizes and Ample Stretch Goals**

## Your Bootcamp Journey With Lighthouse Labs Will Help You To:

- troubleshoot and debug efficiently
- gain confidence speaking to all the components of a web application
- acquire the tools to excel at technical interviews
- become proficient in writing clean, testable code
- understand the patterns used by frameworks like React and Rails to build applications
- work collaboratively within a development team
- create and deploy a portfolio of web applications across various stacks
- develop learning strategies and frameworks to continue building your skill set on the job
- master computer science fundamentals so you can problem-solve as a developer



Our annual **Student Outcomes Report** is evidence of our near-perfect track record helping students achieve their career goals over the past 5 years - a **93% employment rate within 120 days** after graduation for our bootcamp students across Canada.

## We Teach For Mastery

We've built a carefully crafted curriculum, informed by industry professionals and technology experts who know what you need to succeed as a developer. Focused around three pillars of knowledge essential to software development, our curriculum is complemented by unique strategies designed to help you put your skills into context.

## Our Three Pillars



### **Application Development**

- Code that works
- Deployment/Hosting
- Modern Languages
- Clean Code
- UX/UI
- Industry-driven
- Frameworks and Libraries
- Pair Programming/Teamwork

### **Computer Science**

- Algorithm Design
- Trees
- Recursion
- Data Structures
- Code Challenges
- Whiteboard Interview Skills

### **Software Engineering Principles**

- Code that works well
- Test-driven Development
- Data and Security
- Performance
- Modularity
- Testability
- Critical Analysis
- OOP
- Git

## Committing It To Memory

### **Code Challenges**

At the end of each week, you'll complete coding challenges designed to bring together some of the concepts you've learned. These challenges will help you master key concepts before moving on to the next skill.

### **Reflections**

The software industry is constantly evolving, and developers need the ability to step back, research, and evaluate new technologies, products, and architectural styles. We help you build this skill through short weekly reflections and peer review sessions. By the time you graduate, these reflections will form a technical portfolio you can use to prove to employers you know a lot more than just how to write code.

### **Tech Interviews & Katas**

Prepare for the computer science component of technical interviews by completing weekly kata training challenges, and a series of mock interviews with mentors.

# We're In This Together

No great software is built in isolation, so we've designed our Bootcamp to be a truly collaborative learning environment. Throughout the Bootcamp you'll work in tandem with other students to mimic a software development team.

## Pair Programming

Pair programming is an agile software development technique in which two programmers work together at one workstation. In the early weeks, you'll partner up with a classmate to pair program your way through the day's material.

## Group Projects

The midterm and final projects are your opportunities to team up with your peers to build an application from the ground up. Your team will use a Git workflow to write collaborative code, and employ Agile practices to turn your user stories into production-ready software.

# Building Your Portfolio

## Core Curriculum Projects

Your ability to code and get the work done is an important factor in your value as a developer. That's why you'll dedicate more than seventy-five per cent of your time in the program to building software. By the time you graduate, you'll have a complete portfolio of real apps to show potential employers.

## Midterm & Final Projects

In Week 6 you'll team up with your peers for your first major project - the Midterm. You and your team will have the opportunity to get creative and put your skills to work as you replicate web applications with real-world uses.

In the last two weeks of Bootcamp, it's your time to shine! The final project allows your team to use your collective creativity and coding acumen to build a web application from the ground up. From video games, to communication software for nurses, to Raspberry Pi-based security cameras, pretty much anything goes.

# Our Skills Stack

We cover a myriad of industry-relevant technologies vetted by our community of employers, mentors, alumni, and members of the broader tech community. Given the importance of a lifelong learning mindset, learning more than one language allows you to be employable immediately while equipping you to continue learning throughout your career.



## 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.



## HTML, CSS, and More

HTML and CSS are the building blocks of the modern web. You'll learn to create gorgeous responsive UIs for web apps, not only with HTML5 and CSS3 but also modern front-end tools like Babel and Webpack.



## Automated Testing

Testing code manually can be tedious. Capable developers are expected to include automated tests along with the code that they write. We'll teach you methodologies and best practices such as Test Driven Development along with tools such as Mocha, Chai, Selenium and RSpec.



## React JS

In a short span of time, React JS has become one of the most used 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.



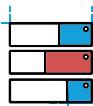
## Ruby on Rails

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



## 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 modeling to abstraction and well-encapsulated code, as well as modular design.



## Databases and Data Modeling

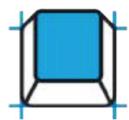
Relational and document databases are two of the prevailing paradigms used today. We'll teach you to be comfortable with SQL, object-stores, and how to leverage ORMs like ActiveRecord for data persistence.



## Computer Science Fundamentals

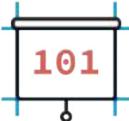
Computer science concepts like data transformation and algorithms help developers understand the theory of how computers and programs work. You'll establish a solid foundation, giving you a stronger advantage in your technical interviews and career growth.

# Curriculum Breakdown



## Prep Work

- The Command Line
- Version Control
- Environment setup
- Introductory JavaScript
- HTML



## Fundamentals

- JavaScript fundamentals
- Debugging
- Unit Testing
- Asynchronous Code
- Promises
- NPM & Package Management
- Test-driven development

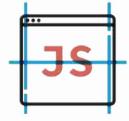


## HTTP

- Node.js
- Express
- HTTP
- JSON
- Git & Git workflow

### Projects

TinyApp: a bit.ly-like URL shortener



## Front-End Fundamentals

- HTML5
- CSS3
- jQuery
- AJAX
- Client-side JS
- Responsive design

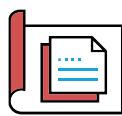
### Projects

Tweeter: a single-page mini Twitter clone



## Databases

- Relational Databases (using PostgreSQL)
- Completing complex database queries
- Document Databases (using MongoDB)
- Database Design
- Database Performance
- Using Databases in Web Applications

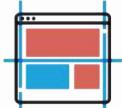


## Midterm Project

- Git workflow
- Teamwork
- Project management

### Projects

Midterm Project: you will form groups to ideate and build your first full-stack web app from scratch



## React

- Component Based Design
- React
- Webpack
- Babel
- Component Testing in React
- End-to-end testing

### Projects

Scheduler



## Ruby/Rails + OOP

- Object Oriented Programming
- Ruby
- Active Record
- Rails
- MVC

### Projects

Jungle: you will inherit a pre-existing Ruby on Rails e-commerce application and enhance it



## Advanced Topics

- Continuous Integration
- Continuous Delivery
- Code Coverage
- Web Infrastructure & DevOps Introduction
- 12-Factor Applications
- Prototypical Inheritance in JavaScript
- OWASP (Web Application Security)

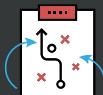


## Final Project

A fully-functional web app built from scratch, using a tech-stack & team of your choosing!

# Launch Your Career

Our Career Services team is here to help you jump from the classroom into the real world as smoothly as possible.



## Career Coaching

Plan your career strategy with our full-time tech recruitment experts

## Resume Reviews

Detailed, personalized feedback and tips to elevate your resume and portfolio

## Interview Training

Interview workshops and mock technical interviews

## Employer Events

Demo Days and Employer Speed Interviewing events help employers get to know you as you showcase your skills

We believe 80% of your learning will be done on the job, and your first year working as a software developer can be seen as paid high-intensity training. Our Career Services team maintains relationships with an ever-growing network of industry contacts, keeping their finger on the pulse of what employers are looking for in this fast-paced industry.

We hustle from day one, and we expect you to do the same. Finding a job is no easy task, but we'll be there to support you every step of the way as you secure your first job. Our support doesn't end at graduation - it's yours for life.

# Life After Bootcamp



## Community

As alumni, you remain an active part of our community. We host Demo Days, meetups, learn-to-code initiatives, hackathons, guest speakers, and alumni events on the regular.

You also gain access to our alumni Slack group, where you can organize educational and social events, and hear about recurring alumni events.

## Continuous Learning

As a Lighthouse Labs alum, you will always have access to our curriculum and its future iterations - yes, until the end of time.

Your access to our learning platform never expires, and you'll benefit from ongoing lecture notes and learning resources as we continue to iterate our world-class curriculum.

# Ready to code?

Apply Now



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