Xtreme Talent Accelerator Program (XTAP)

Back-end Development with Node.js

PROGRAM OVERVIEW

+1w

10-12 Weeks

20+ Hours/Week

Back-End Developer Certificate

Node.js is an open-source, cross-platform, back-end environment that runs on Chrome's V8 JavaScript engine and executes code used by websites and other services. This course is for you if you are looking to build faster and more scalable network applications using Node.js. Through this part-time virtual course, you will differentiate yourself by adding Node.js to your toolbox.

WHO IS THIS FOR?

You are a developer looking to acquire additional skills needed to further advance your career in your current organization.

This workshop may be right for you if:

- You're a front-end developer seeking to learn back-end skills to become a full-stack developer, or
- You're seeking to upgrade your back-end skills with a specialization in Node.js.

ELIGIBILITY

We invite you to apply if:

☑ You're a resident of Ontario, and

☑ You're 18 years or older, and

☑ You're a Canadian Citizen, Permanent Resident or Protected Person

☑ If you work in a full-time position, your employer is in Ontario and is willing to endorse your participation, including approving the time you will need to participate in the program. (For further details, see our Information for Employers fact sheet). If you are unemployed or working on a part-time basis, this eligibility requirement is not applicable to you.

This program requires a commitment of 20+ hours per week. That time consists of up to four hours per week during business hours to attend two live lectures (one to two hours in duration, depending on the topic). Additional daytime support from instructors will be available to participants as needed. The remaining hours include group projects, reading assignments and other self-paced work that you can complete during evenings and weekends.

WHAT YOU WILL LEARN

Designed and delivered by Lighthouse Labs, the program includes Web Development Fundamentals and Back-End Development with Node.js, as well as an opportunity to take an additional two-week session to learn Full-Stack C#.

Along with the technical subjects, you will have access to personal career services and workshops in communication, networking and personal branding, offered by XTAP, to help you improve your soft skills and feel more equipped to advance within your current organization.

Web Development Fundamentals

Your learning in this workshop will prepare you to:

- ☑ Write well-structured, easily maintained, accessible CSS and HTML code to present web pages in various ways.

- ☑ Manipulate the layout of HTML elements using margins, padding and floats.

- ☑ Create, modify and read HTML data attributes using JavaScript and jQuery.

- ☑ Apply techniques of responsive web design, including media queries.

- ☑ Apply the basic features of SASS.

- ☑ Create Git repositories, add and commit code, and push to GitHub.

- ☑ Explain and use first principles for writing maintainable and testable code.

- ☑ Debug code by reading error messages.

- ☑ Use FOCAL (any combination of functions, objects, callbacks, arrays and loops) within JavaScript and Node to form a valid solution to a challenge.

- ☑ Implement stylistic and organizational improvements to simple JavaScript/Node scripts.

Web Development Fundamentals (cont'd)

☑ Explain dependency management and use a package manager to import third-party JavaScript (JS) libraries such as Mocha and Chai.

☑ Write basic client-side JS to add dynamic content to pages.

☑ Use jQuery to bind event handlers and generate DOM elements.

☑ Use jQuery to manipulate CSS.

☑ Use AJAX to send and fetch information from a server and display it on a web page.

☑ Use JavaScript to validate form data.

☑ Analyze and compare complexity and performance of algorithms using Big O notation.

Back-End Development with Node.js

This workshop will prepare you to:

☑ Identify and use strategies for simultaneously learning a new programming language, ecosystem, framework, and codebase, while remaining productive.

☑ Use SELECT statements to solve common data query questions involving GROUP BY, WHERE, LIMIT and ORDER.

☑ Explain the importance and application of SQL/relational databases for web applications.

☑ Describe the key components of a relational database.

☑ Correctly use primary and foreign keys when designing database tables.

☑ Determine if a data model should use one-to-many or many-to-many relationships when designing relational databases.

☑ Use asynchronous (promise-based) Postgres JS libraries to query data from Node applications.

☑ Use the Postgres CLI to interact with and explore a database.

☑ Research database queries through documentation and other references.

☑ Use any combination of loops, functions, complex data structures, classes and OOP within Node to form a valid solution to a challenge.

☑ Implement crud-like, multi-page web applications using Node, Express and MongoDB/Flask, based on requirements.

Back-End Development with Node.js (cont'd)

- ☑ Explain the statelessness of HTTP and the primary means by which it can be overcome (URLs and cookies).
- ☑ Use cookies to persist state between requests.
- ☑ Implement user authentication using best practices, including encrypted cookies and hashed passwords.
- ☑ Explain the middleware pattern used by web servers such as Express.
- ☑ Create RESTful web server endpoints.

Full-Stack C#

Completing this optional session will enable you to:

- ☑ Navigate an existing codebase (C#) and use an existing code style and approach to implement new features for a web application.
- ☑ Apply previous learning tactics to research and become familiar with a new paradigm, language and framework.
- ☑ Implement listed feature and bug-fix requests.
- ☑ Identify and use strategies for simultaneously learning a new programming language, ecosystem, framework and codebase, while remaining productive.
- ☑ Use the fundamental elements of C# syntax (types, strings, numbers and If statements).
- ☑ Use OOP elements including classes and objects, method, properties and fields, for loops, arrays, exceptions, polymorphism, abstraction, interfaces, System.Object and Static classes.
- ☑ Use various collection types provided by the .NET framework to organize data.
- ☑ Use the ASP.NET MVC web framework, C# programming language and.NET framework to update and manage existing code for a web application.

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

These additional career services provided by XTAP cover:

☑ Tech, EQ and You: Exploring and Understanding Emotional Intelligence in Tech

☑ Designing Your Professional Digital Presence

☑ Personality Assessments

☑ Time Management

☑ Virtual Interviewing Skills for Incumbents

☑ Employee Rights in the Workplace

CAREER OUTLOOK

By the end of this program, you will have the upgraded skills that give you an opportunity to advance within your current organization. That can include:

- Access to new or more challenging — and rewarding — projects
- Increased responsibility for existing assignments
- Bringing new technical skills to your team
- Better compensation or a promotion

DATES AND APPLICATION DEADLINES

November 8, 2021 – January 28, 2022
Application deadline: October 3, 2021

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 it later.

Apply Now

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