

# FULL STACK DEVELOPMENT

### W E B D E V E L O P M E N T F U N D A M E N T A L S

- Understand how websites work and how HTML, CSS and
- JavaScript Contribute.
- Understand how the internet works and how websites are
- served.
- Learn to use git, GitHub and version control.
- Learn key troubleshooting and debugging skills to apply to
- your projects.

### HTML5

- Learn the anatomy of HTML syntax to structure your
- websites.
- Understand the HTML boilerplate and HTML doctypes.
- Understand indentation and nesting in HTML code.
- Learn to use HTML tags to structure headings, paragraphs.
- How to structure HTML lists to create unordered and ordered
- lists.
- How to insert images using HTML
- How to create hyperlinks using anchor tags.
- Create multi-page websites.
- Learn HTML best practices.

#### **C S S 3**

- Understand what are cascading style sheets and how you can
- use it to style your website.
- How to use CSS selectors and properties.
- Learn about how to use inline, internal and external CSS.
- Understand CSS coding best practices.
- Learn about CSS specificity and inheritance.
- Learn and understand the CSS Box Model.



- Learn to use developer tools to inspect and diagnose CSS.
- Learn about CSS positioning and display properties.
- Learn about font styling using CSS and web safe fonts.
- Implement responsiveness using CSS media queries.
- How to use CSS float and clear properties.
- How combine CSS selectors and understand selector priority.

#### F L E X B O X

- Learn about why flexbox was introduced to CSS.
- Understand what happens when display is set as flex.
- Understand flex direction and how it affects layout.
- Learn to use align and justify for layout of child items
- Understand how child items are sized and distributed in a
- flexbox and use the flex shorthand property.

#### GRID

- Learn about how grid is different to flexbox and their
- strengths and weaknesses.
- Understand what happens when display is set as grid.
- Learn how grid sizing is done and how to create and arrange
- a grid.
- Learn to position items in a grid and how placement across
- rows and columns is done.
- Learn to use grid in combination with flexbox to create
- complex layout using native CSS.

#### BOOTSTRAP

- Understand the difference between native CSS tooling and
- external frameworks.
- Learn to install the Bootstrap framework into your website.
- Understand the Bootstrap 12 column layout system.



- Learn to use Bootstrap components such as buttons,
- carousels, cards and navigation bars.
- Accessing and incorporating designer icons from Bootstrap.
- Find and use bootstrap code snippets, examples and pre-built
- templates to quickly created beautiful mobile-first websites.

#### W E B D E S I G N

- Learn the fundamental principles of web design, UI and UX.
- Understand colour theory and how to choose and use
- modern colour palettes to make your website look
- professional.
- Understand modern typography and choose free-for-
- commercial use typefaces to make your website user friendly
- and stylish.
- Learn to manage user attention using the key principles of
- User Interface (UI) design.
- Learn to design user friendly websites by understanding
- User Experience (UX) design.

#### DOCUMENTOBJECTMODEL (DOM)

- Learn the tree structure of HTML based websites.
- Traverse through the document using object notation.
- Separation of concerns and coding best practices.
- Manipulate and change the HTML elements using your
- understanding of the DOM.



### JAVASCRIPT, ES6

- Compare programming languages like JS with scripting and
- markup/stylesheet languages.
- Overview of JavaScript and its uses.
- Understand how to work with a code editor and IDEs.
- Basic syntax and data types in JavaScript, including:
- Variables and their scope (let, const)
- Data types (string, number, boolean, null, undefined, symbol)
- Operators and expressions, including arithmetic, comparison,
- and logical operators
- Control structures like if/else statements and loops,
- including:
- The for loop and while loop
- The for...of loop to iterate over arrays
- The for...in loop to iterate over object properties
- Functions and their importance in JavaScript, including:
- Function declaration and expression
- Function scope and closures
- Arrow functions and their syntax
- Higher-order functions, including:
- Passing functions as arguments to other functions
- Returning functions from other functions
- The map, filter, and reduce methods on arrays and their use
- with higher-order functions
- Arrays and their methods, including:
- Creating and accessing arrays



- Adding and removing elements from arrays
- The slice method for slicing arrays
- The concat method for concatenating arrays
- The index Of and last Index Of methods for finding elements in
- arrays
- The map, filter, and reduce methods for manipulating arrays
- The spread syntax ... to spread the elements of an array into
- a new array or function call
- Object-oriented programming in JavaScript, including:
- Creating objects with object literals
- Creating objects with constructor functions and the new
- keyword
- Creating objects with classes and the class keyword
- Adding and accessing properties and methods on objects
- The this keyword and how it works in object methods
- The super keyword for accessing parent class methods and
- properties
- Manipulating objects and arrays using methods and iteration,
- including:
- The Object. Keys and Object. Values methods for getting the
- keys and values of an object as arrays
- The for...in loop for iterating over object properties
- The Object. Assign method for copying properties from one
- object to another

### **REACT.JS**

- Learn front-end development with React.
- Understand when and how to use React Components.
- Learn to pass Props and work with them.
- Learn to write JSX and understand JSX syntax.



- Learn about the React DOM.
- Learn State Management in React.
- Learn about React Hooks.
- Learn about conditional rendering in React.
- Understand the difference between class and functional
- components.

#### THE UNIX COMMAND LINE

- How to use basic bash commands in a Unix/Linux Terminal.
- How to manipulate files and folders without needing a
- graphical user interface.
- How to download and install to your computer using
- command line.

#### GIT GITHUB AND VERSION CONTROL

- Using git for version control and collaboration
- Git forking, branching and cloning
- Using GitHub as a remote repository
- Checkout and rolling back changes with git
- Using git and GitHub with Xcode

#### NODE.JS

- Explore the components of back-end development, working
- with an MVC framework
- Apply concepts like data types, objects, methods, object-
- oriented programming, and classes in the context of back-
- end development.



- Server-Side JavaScript
- Using Node on the command line
- NPM
- JavaScript Build Processes
- Event Loop and Emitters
- File System Interaction
- Modules
- Native Node drivers

#### EXPRESS.JS

- Understand how to install and use express in Node
- applications
- Creating Node and Express based servers
- RESTful Routing with Express
- Understand and use middleware for Node applications

## APPLICATION PROGRAM INTERFACES (APIS)

- Understand what APIs are and how they work.
- HTTP in Depth
- Calling APIs
- Reading API documentation
- Basic API Authentication
- Server to server communication
- JSON vs. XML, sending data over the wire.



### EJS

- Understand what EJS does and how to use it with Node and
- Express.
- Templating with EJS
- Running code in EJS templates
- Passing data from server to template and vice versa
- Creating layouts/partials with EJS

## DATABASE FUNDAMENTALS

- Data Relationships
- Designing a Data Model
- Relational Databases
- Alternative Databases
- Entity Relationship Modelling (ERM) and Object Relational
- Mapping (ORM)

### SQL DATABASES

- Working with Database Schemas
- Create-Read-Update-Destroy (CRUD)
- Database Joins
- Querying SQL databases

#### POSTGRES DATABASES

PostgreSQL queries



- Create-Read-Update-Destroy (CRUD)
- Postgres Best Practices
- Installing Postgres
- Relational Databases
- Implementing One to Many, One to One and Many to Many
- Relationships.
- Working with Postgres in Node with the pg Package.

#### **DEPLOYMENT**

- Understand hosting and deployment.
- Hosting static websites with GitHub Pages.
- Deploying server-based applications with Heroku.
- Deploying Databases with Mongo Atlas.

### BUILDING RESTful APIs

- Understand REST and guiding principles behind API design.
- Learn to work with a MongoDB GUI Robo 3T
- Implementing GET, POST, PUT, PATCH and DELETE by creating a
- public API from scratch.
- Understand and use chained route handlers from Express.

### AUTHENTICATION and SECURITY

- Understand the need for authentication and keeping user
- details secure.
- Learn about Encryption and use encryption to keep your
- database secure.



- Learn and implement Hashing and Salting with bcrypt
- Using Sessions and Cookies to persist user log in sessions.
- Setting up local authentication from scratch.
- Implementing Passport to authenticate users quickly and
- effectively.
- Understand and use environment variables to keep secret keys
- secure.
- Understand and use OAuth 2.0 to log in users using Google and
- Facebook.

#### WEB3 BASICS AND BLOCK CHAIN DEVELOPMENT

- Understand Web3 and blockchain development.
- Understand a Canister
- Understand a Motoko actor

#### DEPLOY YOUR CV WEBSITE ON TO ABLOCK CHAIN

- Set up a cycles wallet
- Obtain free cycles from Dfinity
- Understand how to manage the cycles balance of a canister
- Build and deploy a static, personal CV website to the Internet
- Computer
- Check how many cycles were used

### WORK WITH ARE ACT FRONT END AND BLOCKCHAIN BACKEND

- Use a React frontend in combination with the Internet
- Computer
- Allow users to create their own notes and persist these in a
- canister
- Learn to use CRUD style operations on a canister from the
- front end

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# LEARINGO SOFTWARE & EDUCATION PVT LTD (NASHIK)

• Learn to use the Candid interface to test the app

### CREATE YOUR OWN CRYPTOTOKEN

- Understand the role of tokens in dapps and open internet
- services
- Create a token modelled on Ethereum's ERC-20 and deploy it
- on the Internet Computer
- Create a faucet contract that dispenses small amounts of the
- token.
- Understand and work with principal IDs to identify users and
- smart contracts
- Use the Plug wallet to track token balances
- Learn how to transfer the token between user accounts.

### CREATEANN FTANDMARKET PLACE

- Create a non-fungible token modelled on ERC-721 and deploy
- it to the Internet Computer
- Build a marketplace website like Open Sea to allow users to
- mint, buy and sell NFTs.
- The owner of the NFT can interact with the canister to transfer
- the ownership of the .jpeg to another account

#### I don't have any prior experience or a technical background, can I join this Training?

- The course is designed for students of all levels. The youngest
- person we've had on the course is 11, the oldest 86. The most
- inexperienced student didn't know what a website is, the most
- experienced works for Twitter as a developer. The most important
- thing is perseverance and willingness to learn. If you have that
- then you'll do great!