



Web Development Bootcamp.

TDCX

TAUGHT BY
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COURSE LENGTH
12 Weeks

COURSE FEE
40,000 PKR

SYLLABUS

THE COMPLETE WEB DEVELOPMENT BOOTCAMP



WEB DEVELOPMENT FUNDAMENTALS

- 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.

HTML 5

- 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.

CSS 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.

FLEXBOX

- 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.

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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.
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- 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.

WEB DESIGN

- 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.

DOCUMENT OBJECT MODEL (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.

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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 indexOf and lastIndexOf 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

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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
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- Native Node drivers

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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

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POSTGRES DATABASES

- PostgreSQL queries
- Create-Read-Update-Destroy (CRUD)
- Postgres Best Practices
- Installing Postgres
- Relational Databases
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- 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.

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WEB3 BASICS AND BLOCKCHAIN DEVELOPMENT

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

DEPLOY YOUR CV WEBSITE ONTO A BLOCKCHAIN

- 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 A REACT FRONTEND 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
- Learn to use the Candid interface to test the app

CREATE YOUR OWN CRYPTO TOKEN

- 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.

CREATE AN NFT AND MARKETPLACE

- Create a non-fungible token modelled on ERC-721 and deploy it to the Internet Computer
- Build a marketplace website like OpenSea 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

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TDGX



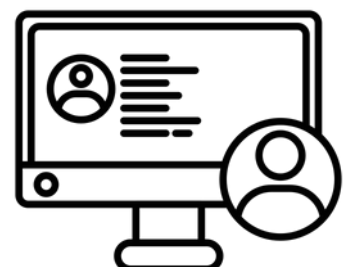
Bootstrap



jQuery



Mongo db



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PHP With My SQL COMPLETE MVC

Introduction

Data Types & Logic Essentials - Craft Conditional Responses with if/else

Arrays & the foreach Loop - Store, Manipulate and Use Data Sets Efficiently

Associative Arrays - Manage Key-Value-Pairs for Advanced Data Handling

Advanced Concepts - Variable Types, Including Files and String Functions

Nested Arrays - Simplify Complex Data Handling

Database Interactivity - Connect to MySQL/MariaDB from PHP

Foundations of Object-Orientated Programming (OOP): Enhance your Code Structure

Cookies & Sessions: Manage and Safeguard User Data

String Encodings - Understand

Multilingual

Strings & Database Collations

Refresher: Jumpstart or Revisit HTML &

CSS

Basics (optional)

OOP (Part 2): Organize Code with Namespaces, Autoloading, Interfaces