

codeWithAY

Learn
Software Development
with AY



Onboarding Session



Week One/ Day 1

- Why is learning how to develop software so important
- What Jobs can you do after you are done with this course
- Learning at your own pace but at a good pace
- How to set up your github account if you don't already have one
- How to submit assignments
- How to track your progress
- Documentations and finding help
- Other important details



```
<span class="text-sm">The subject you have  
</h3>  
<p class="text-sm">The subject you have  
<p class="text-sm text-align:center">  
</div>  
</div>  
!-- Message End -->
```



Week 1

Objectives

Basic Introduction to Frontend Development : At the end of the week, you would have a good understanding of HTML. You would have build a minimum of 3 projects through your assignments and you would have access to everyone's performance through a leader board

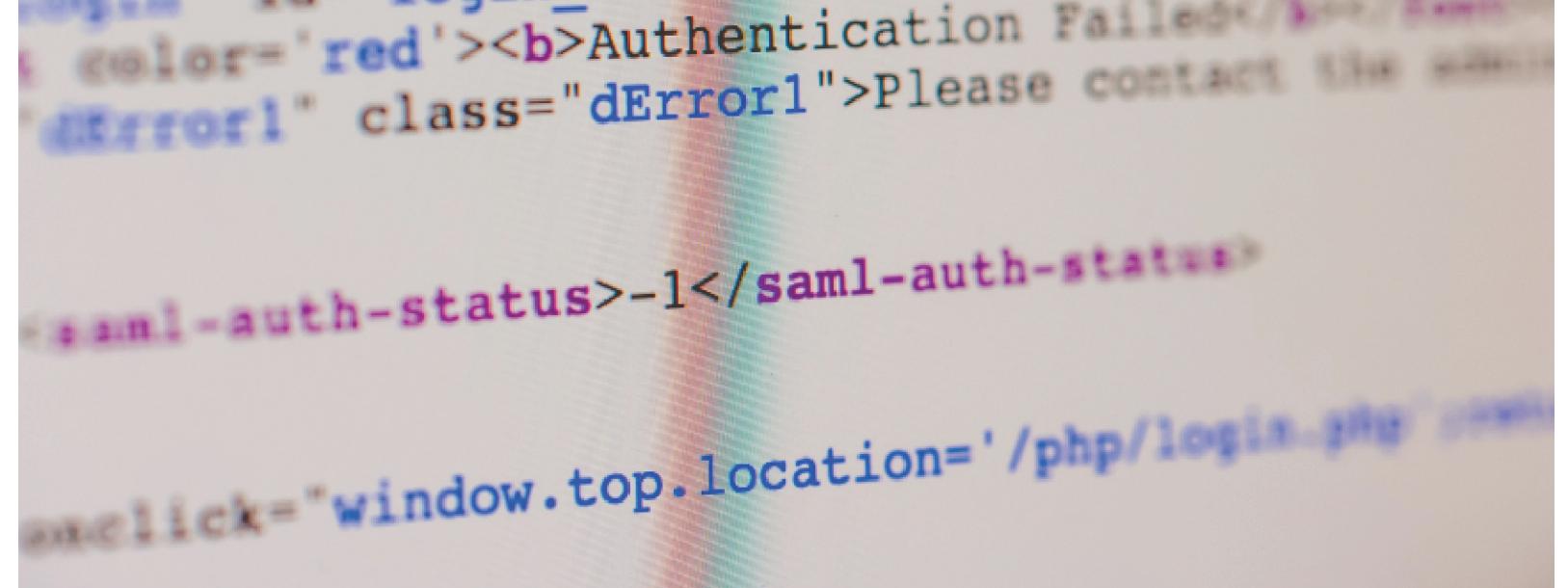
Week 1

Week 1 Outcome:

At the end of this week, you should be comfortable with the following

- What is HTML
- History of HTML
- Why HTML is the building block of the web
- The basics of HTML
- Limitations of HTML

- Definition and Terms
- Tags
 - Opening and closing Tags
 - Self Closing Tags
- Attributes
- Values
- Validation -HTML Validation
- DocTypes
- URL
- HTML Page
- WWW
- HTTP
- Image Formats
- HTML Elements
 - Headline Elements
 - Tables
 - Forms
 - Lists
 - Links - href
 - Download
 - Media: Audio and Video
 - Marquee
 - Semantic HTML



Week 2

Objectives

Basic Introduction to CSS(Cascading StyleSheet). At the end of this week, you would have a good understanding of the CSS Syntax, Selectors and the Box Model Concept.

Week 2

Week 2 Outcome:

At the end of this week, you should be comfortable with the following

- Introduction to CSS
 - What is CSS
 - Evolution of CSS
 - Adding CSS to a page
 - Adding CSS to a page

- Selectors

- Type Selectors

- Classes and ID Selectors

- Grouping and Modifying Selectors

- Usingg Combinators in Selectors

- Basic Attribute Selectors

- Link and User Action Pseudo-Classes

- Basic Structural Pseudo-Classes

- Advanced Selectors

- Substring Matching Attribute Selectors

- PseudoClasses -nth-child

- PseudoClasses -nth of type and only of type

- Additional Pseudo-Classes

- UI Element States Pseudo-Classes

- Pseudo Elements - first-line and first letter

- Pseudo Elements - before and after

- Values and Units

- Absolute length Units

- Relative Length Units

- Numeric and Textual Data Types

- Color Values

- Text, Fonts, and Lists

- Font Properties

- Text Properties

- More Text Properties

- List Styles

- The Box Model

- The CSS Box Model Concept

- Width, Height and Overflow Properties

- FLOATS

- Positioning Properties



Week 3

Objectives

Introduction to Advanced CSS(Cascading Style Sheet). At the end of this week, you would have a good understanding of the Flexbox, Backgrounds, linear gradients, grid, animations, transition and transforms,

Week 3

Week 3 Outcome:

At the end of this week, you should be comfortable with the following

- Background and Borders

- Background Properties

- Border Radius

- Box Shadows

- Advanced Background

- CSS Gradients

- Linear Gradients

- Linear Gradients -Unprefixed State

- Radial Gradients

- Radial Gradients - Unprefixed Syntax

- Transparent Gradients

- Repeating Gradients

- Flexbox and Multicolumn Layout

- Flecxbox Part 1

- Flexbox Part 2

- Multicolumn Layout

- Transition and Transforms

- Transition Part 1

- Transition Part 2

- 2D transforms

- 3D transforms

- CSS Animations



Week 4

Objectives

Introduction to Media Query and Boostrap. At the end of this week, you would have a good understanding of media query and the CSS library called Bootsrap,

- Media Queries

- Media Features and Media Types

- Adaptive Layouts with Media Queries

- Device Specific Media Queries

- Introduction to Bootstrap

- What is Bootstrap

- The Bootstap Navigation Bar

- The Bootstrap grid layout

- The Bootstrap containers

- The Bootstrap button and Font awesome

- Advanced Bootstrap
 - The Bootstrap Carousel
 - The Bootstrap Cards
- Putting it all together by building real products

Week 5

Objectives

Basic Introduction to Javascript. At the end of this week you would have a good understanding of the Basic Javascript

- Introduction to Javascript ES6
 - Introduction to Javascript
 - Javascript Alerts
 - Data types
 - Javascript Variables
 - Naming conventions for Javascript variables
 - String concatenation
 - String Methods and properties
 - Basic Arithmetic Operators and the Modulus Operator
 - Increment and Decrement Expressions

- Functions
 - Function Declaration
 - Function Expressions
 - Parameters and Arguments
 - Function Outputs; the return Statement
 - Basics of Scope



Week 6

- Methods and Properties
 - Math Methods
 - Array Properties and Methods
 - Date Methods
- Decision Statements
 - If-Else Statement
 - Switch-Case Statement
 - Ternary Operators
 - Comparators and Equality
- Iteration Statements
 - For Loop
 - While Loop
 - For In Loop
 - For Each Loop
- The Document Object Model
 - Introduction to the Document Object Model
 - Selecting HTML elements with Javascript
 - Manipulating Styles of HTML elements
 - Text Manipulation and Text Content Property
 - Manipulating HTML Elements Attributes

- The Document Object Model
 - Using Keyboard Event Listeners to check for key presses
 - Understanding callbacks and how to respond
 - Adding animation to websites

Week 7

- Introduction to Jquery
 - What is Jquery
 - How to incorporate Jquery into your website
 - How Minification works to reduce file size
 - Selecting elements with jquery
 - Manipulating styles with jquery
 - Manipulating texts with jquery
 - Manipulating attributes with jquery
 - Adding event listeners with jquery
 - Adding and removing elements with jquery
 - Website Animation with jquery

Week 8

- Projects
- Projects
- Projects
- Revision

```
// calling the setTimeout(start  
var t = setTi meout(start,  
// adding the zero if needed  
unction correctTi me( )
```

Week 9

- Introduction to Backend Development
 - Definition and terms
 - What is Node JS
 - The power of command line and how to use Node
 - The Node REPL
 - How to use Native Node Modules
 - The NPM manager and installing external node modules
 - Manipulating attributes with jquery
 - Adding event listeners with jquery
 - Website Animation with jquery
 - Adding and removing elements with jquery

Week 10

- Introduction to ExpressJS
 - What is Express
 - Creating our first server with Express
 - Handling requests and responses
 - Understanding and working with routes
 - Creating our first express project

Responding to request with HTML files

Processing request with Body Parser



Week 11

- Introduction to Application Programming interfaces
API endpoints, paths and parameters

API authentication and postman

What is JSON

Making GET Requests with the Node HTTPS Module

How to Parse JSON

Using Express to Render a Website with Live API Data

Using Body Parser to Parse POST Requests to the Server

Adding Success and Failure Pages

Deploying Your Server with Heroku



Week 12

- Introduction to Version Control and Git
Version Control Using Git and the Command Line
Github and Remote Repositories
Gitignore
Cloning
Branching and Merging
Forking and Pull Requests



Week 13

Revision, Revision, Revision

Projects



▶ Week 14

- Putting it all together by building yet another major project

▶ Week 15

- Introduction to Databases : SQL vs. NOSQL
SQL Commands_ CREATE Table and INSERT Data
SQL Commands_ READ, SELECT, and WHERE
Updating Single Values and Adding Columns in SQL
SQL Commands_ DELETE
Understanding SQL Relationships, Foreign Keys and Inner Joins

▶ Week 15

- Introduction to MongoDB
Installing MongoDB
MongoDB CRUD Operations in the Shell_ Create
MongoDB CRUD Operations in the Shell_ Reading & Queries
Relationships in MongoDB
Working with The Native MongoDB Driver

Week 16

- Introduction to Mongoose
- Reading from Your Database with Mongoose
- Data Validation with Mongoose
- Updating and Deleting Data Using Mongoose
- Establishing Relationships and Embedding Documents using Mongoose

Week 17

Putting it all together by building yet another project and deploying on Heroku

Week 18

- Introduction to REST API
- Creating a Database with Robo 3T
- GET All Articles
- POST a New Article
- PUT a Specific Article
- DELETE a Specific Article



Week 19

- Introduction to Authentication

Register Users with Username and Password

Database Encryption

Using Environment Variables to Keep Secrets Safe

Hashing Passwords

What are Cookies and Sessions_

What are Cookies and Sessions_

Using Passport.js to Add Cookies and Sessions

OAuth 2.0 & How to Implement Sign In with Google



Week 20

Putting it all together by building another project

```
<Title name="our" title="prod">
<div className="row">
  <ProductConsumer>
    {(value) => {
      | | console.log(value)
    }}
  </ProductConsumer>
</div>
</div>
<React.Fragment>
```

Week 21

- What is React

Introduction to JSX and Babel

Javascript Expressions in JSX & ES6 Template Literals

Javascript Expressions in JSX & ES6 Template Literals

JSX Attributes & Styling React Elements

Inline Styling for React Elements

React Components

Import, Export and Modules

Local Environment Setup for React Development

Week 22

- React Props

React DevTools

Mapping Data to Components

Javascript ES6 Map_Filter_Reduce

Javascript ES6 Arrow functions

Conditional Rendering with the Ternary Operator & AND Operator

State in React - Declarative vs. Imperative Programming

React Hooks - useState

Javascript ES6 Object & Array Destructuring

Week 23

Event Handling in React

React Forms

Class Components vs. Functional Components

Javascript ES6 Map_Filter_Reduce

Javascript ES6 Spread Operator

Managing a Component Tree

React Dependencies & Styling the Keeper App

Week 23

How to Start Freelancing and more

How to Soak in Programming Concepts and more

How to deal with contract jobs