

CIS 9282. Independent Study. 3 credit hours

Summary of Work Completion

In my independent study on Web Development, I gained a comprehensive understanding of key technologies and tools necessary to create dynamic, interactive, and intelligent websites. I focused on learning HTML, CSS, JavaScript, Bootstrap, and PHP. Additionally, I explored the integration of AI tools into webpages to enhance user experiences and functionality. Finally, I implemented the knowledge I gained through the semester to create a final web application, a fitness tracker and workout planner.

Weekly Summary:

Week 1 (8/28/23)

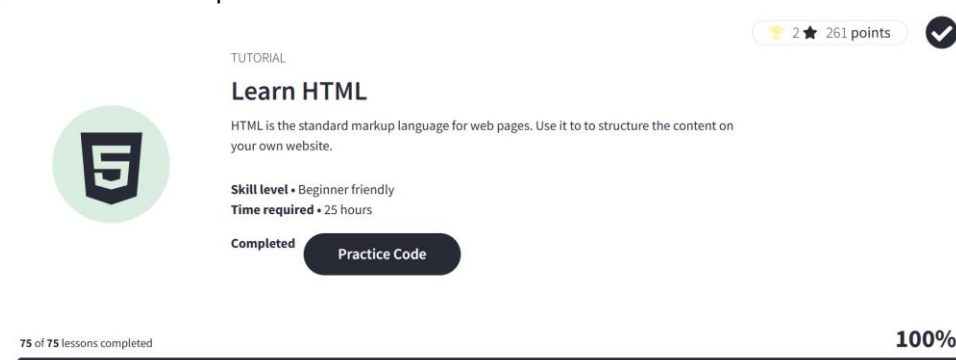
Semester Planning and Exploring the Foundations of Web Development

- Outcomes:
 - I understand the fundamental concepts of the internet, web browsers, and how webpages are delivered to users.
 - I understand the structure of URLs and how webpages and other files are organized on a web server.
 - I found resources for learning web development and created a plan of action for the semester.

Week 2 and 3 (9/4/23 and 9/11/23)

Learning HTML

- Outcomes:
 - I completed the HTML tutorial on W3Schools.



TUTORIAL

2 ★ 261 points

✓

Learn HTML

HTML is the standard markup language for web pages. Use it to structure the content on your own website.

Skill level • Beginner friendly
Time required • 25 hours

Completed [Practice Code](#)

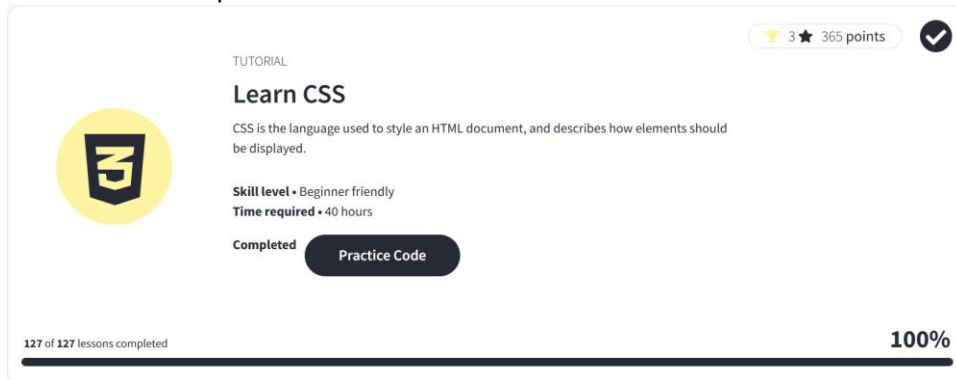
75 of 75 lessons completed **100%**

- I learned about the structure and purpose of HTML (Hypertext Markup Language) in creating the basic layout of web content.
- I learned about many different HTML elements and how they can be integrated with CSS and JS; how to display and format many different elements including text, images, video, lists, tables, audio, and forms; the important element `<div>`; and many attributes, including class and id.
- I created a webpage to show my knowledge of HTML elements.

Week 4 and 5 (9/18/23 and 9/25/23)

Learning CSS

- Outcomes:
 - I completed the CSS tutorial on W3Schools

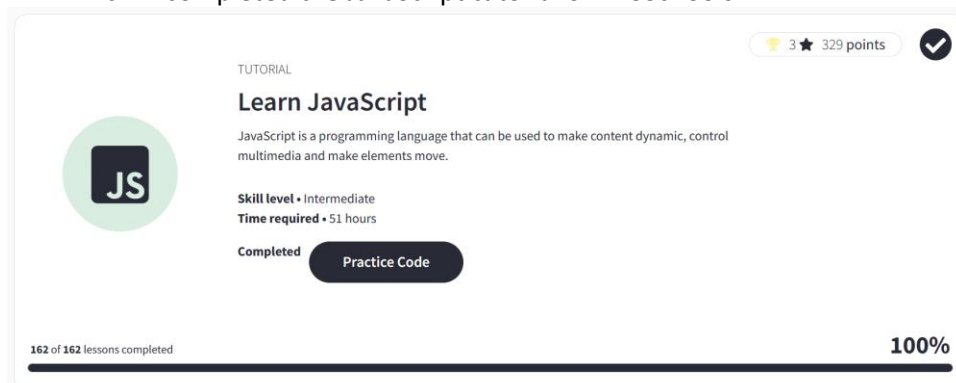


- I learned how to write CSS (Cascading Style Sheets) rules to format HTML elements, including images, links, buttons, text, lists, tables, forms; and their various properties, including color, background, border, margin, padding, fonts, size, position, opacity, etc.
- I learned how to write rules for the <div> container to create things like navigation bars, drop down menus, and image galleries.
- I learned about transforms, transitions, and animations to make HTML elements more dynamic.
- I learned how to design and style web content for mobile-first and ensure responsive webpages on various devices.
- I learned about CSS variables, counters, and math functions.
- I added a home page to my website and a page to demonstrate my knowledge of CSS styling.

Week 6, 7 and 8 (10/2/23, 10/9/23, and 10/16/23)

Learning JavaScript

- Outcomes:
 - I completed the JavaScript tutorial on W3Schools



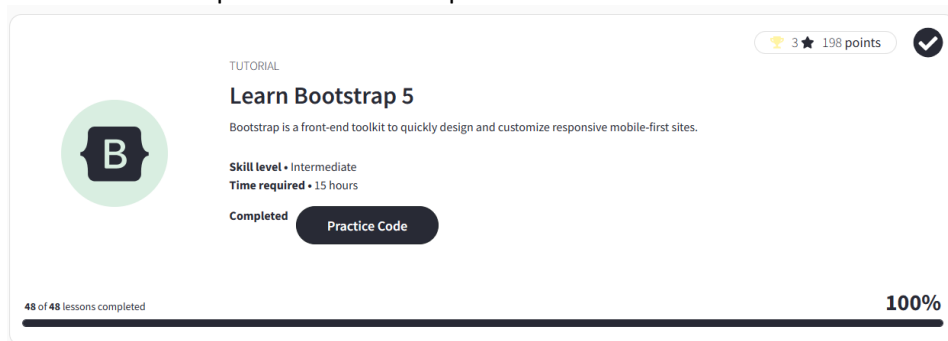
- I learned the JavaScript programming language syntax.
- I learned about the uses of JavaScript in interacting with HTML and CSS to make interactive and dynamic webpages using the DOM.

- I learned about the BOM and how to use it to set browser cookies, use the browser's navigation history, and set up timers to call functions at certain times.
- I learned about how to use JavaScript to access other Web APIs.
- I learned how to make requests and get responses using AJAX.
- I learned how to use JSON to send and receive data to and from a web server.
- I added a page to my website which uses HTML, CSS and JS to recreate the classic game battleship.

Week 9 (10/23/23)

Learning Bootstrap

- Outcomes:
 - I completed the Bootstrap 5 tutorial on W3Schools

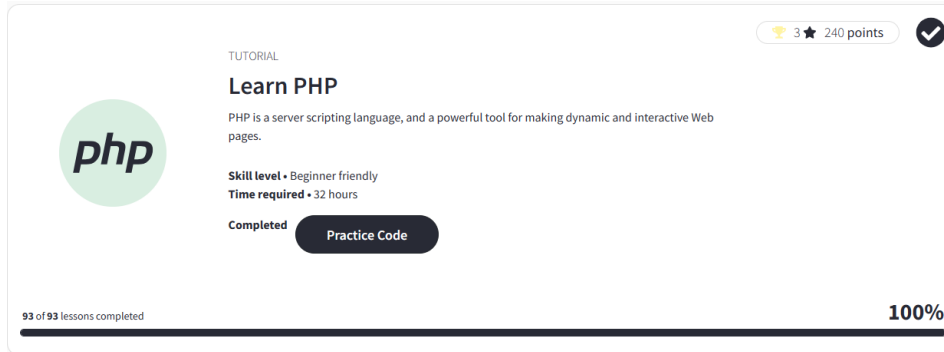


- I learned about the Bootstrap 5 framework and how to implement it into existing HTML pages to easily style HTML elements with predefined CSS.
- I learned how to layout elements into a flexible, responsive grid. I learned how to add padding margin, and borders to all elements using different bootstrap utilities.
- I learned how to color backgrounds and text of elements.
- I learned how to format HTML tables, images, alerts, buttons, progress indicators, lists, navigation bars, drop-down menus, tooltips, forms, and form elements.
- I learned how to create collapsing content, modal and side menu elements, and display content in a carousel view.
- I restyled my battleship game using Bootstrap styles.

Week 10 and 11 (10/30/23 and 11/6/23)

Learning PHP

- Outcomes:
 - I completed the PHP tutorial on W3Schools:



- I learned how to set up my computer as a web server that could run PHP scripts and use MySQL databases.
- I learned the syntax of PHP variables, data types, operators, the output keyword 'echo', conditionals, loops, functions, and classes.
- I learned the syntax for OOP using PHP, including abstract classes and interfaces.
- I learned how to use PHP to read and write to files, create and edit cookies, and save and get data using XML and MySQLi.
- I created a simple register/login page that saves user registration data in a MySQL database. This made use of php scripts, AJAX requests, SQL queries, and cookies.

Week 12 (11/13/23)

AI Integration

- Outcomes:
 - I researched how to integrate an AI chat assistant into my web page. I used a lot of the previous knowledge gained around PHP and AJAX to make API calls to OpenAI's API.
 - I learned how to use install existing php packages on my web server using composer.

Week 13 off for Thanksgiving (11/20/23)

Week 14, 15, 16, and 17 (11/27/23, 12/4/23, 12/11/23, and 12/18/23)

Building a fitness tracker and workout planner web platform.

- Outcomes:
 - The final web application is a fitness tracker and workout planner platform. The fitness tracker allows the user to log a workout that they did, view and edit previous workouts and get suggestions for new workouts. The user can also track daily fitness/health information about themselves, including their weight, caloric intake, and amount of water consumed, and set goals for themselves to reach.