Software Engineering Internship

July 2024

Titanium Forest

HTML / CSS

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- **HTML (HyperText Markup Language)**
  - Provides the structure and content of a web page
  - Defines the elements that make up the content
    - i. headings, paragraphs, links, images
  - Static
- **CSS (Cascading Style Sheets)**
  - Controls the presentation and styling of HTML elements
  - Defines how HTML elements are displayed
    - i. layout, colors, fonts, and animations
  - Enhances the visual appeal and user experience of web pages.

Okay, but what is Javascript then?

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- A programming language used primarily for adding interactivity and dynamic behavior to web pages
- Allows for manipulation of HTML and CSS after the page has loaded
- Enables responses to user inputs

Let's poke around!

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- Go to jsfiddle
  https://jsfiddle.net/bethanyv21/9ebdz3t8/8/

Basic syntax and variables

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- **Syntax**
  - Statements
  - Case sensitivity
- **Variables**
  - var
  - let
  - const

Data types and operators

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- **Data Types**
  - Primitive data types
    - numbers, strings, booleans, arrays, objects, null, and undefined
- **Operators**
  - Arithmetic (+, -, *, /, %)
  - Comparison (==, ===, !=, !==, <, >, <=, >=)
  - Logical operators (&&, ||, !)

Control Flow and Functions

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Conditionals

- `if`, `else`, and `else if` statements

Loops

- `for` loops and `while` loops

Functions

- Function declaration, parameters, and return statements

DOM Manipulation and Event Handling

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Introduction to the DOM

- Document Object Model: a programming interface for web documents that provides a structured representation of the document as a tree of objects

Manipulating DOM Elements

- Select and modify HTML elements using JavaScript
- Changing styles, content, and attributes dynamically

Event Handling

- Event listeners (addEventListener) to respond to user actions (clicks, input changes, etc.)

React!!

What is React?

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- A JavaScript library designed for building user interfaces (UIs) for web applications.
- Component-based architecture
  - UIs are broken down into reusable pieces of code
- Allows developers to efficiently update and render components when data changes
  - virtual DOM (Document Object Model)
    - A lightweight copy of the real DOM
    - Keeps track of changes in data and updates the actual DOM efficiently only when necessary
      - Minimizes the number of updates to the real DOM, resulting in faster and smoother UI updates for users.

Let's practice more!

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- Go to jsfiddle
  https://jsfiddle.net/bethanyv21/1j9fpc7x/33/