Day 19

Introduction to the Document Object Model (DOM)

1. DOM Overview:

- **Purpose:** The DOM represents the structure of an HTML document as a tree of objects. Each element, attribute, and piece of text in the document is represented as a node in this tree.
- **Structure:** The DOM organizes HTML elements in a hierarchical manner. The document starts with a root node (document), which contains child nodes representing HTML elements such as <body>, , and <p>.
- **Interaction:** JavaScript can access and modify the DOM, allowing you to update content, change attributes, add or remove elements, and alter styles dynamically.

Selecting Elements

1. getElementById:

- **Purpose:** Retrieves a single element with a specified id attribute. This method is useful for accessing elements with unique identifiers, allowing for efficient and direct manipulation.

2. getElementsByClassName:

- **Purpose:** Returns a live HTMLCollection of elements with a specified class name. This method is useful for selecting multiple elements that share the same class, which can be manipulated collectively or individually.

3. querySelector:

- **Purpose:** Selects the first element that matches a specified CSS selector. This method is versatile and allows for complex selections, including by element type, class, id, or other attributes.

4. querySelectorAll:

- **Purpose:** Retrieves all elements that match a specified CSS selector, returning a static NodeList. This method allows for the selection of multiple elements based on more advanced CSS selectors.