

Difference between the Window and Document Object

Window Object

1. **Global Scope:**
 - The window object represents the browser's window or the frame where the document is displayed. It is the global object in a web browser, meaning all global variables and functions become properties and methods of the window object.
2. **Browser API:**
 - It provides methods to control the browser window, such as opening and closing windows (`window.open`, `window.close`), and interacting with the browser history (`window.history`), location (`window.location`), and timers (`window.setTimeout`, `window.setInterval`).
3. **Properties and Methods:**
 - Contains properties like `window.innerHeight`, `window.innerWidth` (dimensions of the window's content area).
 - Methods for displaying alert boxes (`window.alert`), confirming actions (`window.confirm`), and prompting for user input (`window.prompt`).
4. **Event Handling:**
 - Handles events related to the browser window, such as `load`, `resize`, and `scroll`.
5. **Global Object:**
 - As the global object, any global variables or functions defined in JavaScript are actually properties of the window object. For example, `var x = 10` is equivalent to `window.x = 10`.

Document Object

1. HTML Document:

- The document object represents the HTML or XML document loaded in the browser window. It is a property of the window object (`window.document`).

2. DOM Tree:

- It provides methods and properties to access and manipulate the content and structure of the document, such as finding elements (`document.getElementById`, `document.querySelector`), creating new elements (`document.createElement`), and modifying elements (`document.appendChild`, `document.removeChild`).

3. Content Manipulation:

- Allows dynamic changes to the content of the web page, including changing the text (`document.createTextNode`), attributes (`element.setAttribute`), and styles (`element.style`).

4. Event Handling:

- Handles events that occur within the document, such as clicks, form submissions, and keyboard input. You can attach event listeners to document elements (`document.addEventListener`).

5. Accessing Elements:

- Provides methods to access various parts of the document, including the head (`document.head`), body (`document.body`), and other elements by tag name (`document.getElementsByTagName`), class name (`document.getElementsByClassName`), etc.

Key Differences

1. Scope:

- window is the global object and represents the entire browser window.
- document is a property of window and represents the loaded web page.

2. Purpose:

- window is used for controlling the browser window and its features.
- document is used for interacting with and manipulating the content of the web page.

3. Event Handling:

- window handles events related to the browser window (e.g., resize, scroll).
- document handles events related to the document content (e.g., clicks, form submissions).

4. Content Access:

- window provides access to browser-specific features and APIs.

- document provides access to the HTML document and allows manipulation of its structure and content.