Document Object:
The Document object represents the web page loaded in the browser window and provides an interface to manipulate its content. It acts as a container for all the elements on a web page, such as HTML tags, CSS styles, and JavaScript code. Through the Document object, you can access and modify various aspects of the web page, including its structure, elements, attributes, and text content.

Key characteristics of the Document object include:

Document Structure: The Document object provides methods to access and manipulate the structure of the web page, allowing you to create, modify, or delete HTML elements dynamically.

DOM Manipulation: The Document Object Model (DOM) represents the web page as a tree-like structure, where each element becomes a node in the tree. With the Document object, you can traverse and manipulate this tree structure, enabling powerful interactions with the web page.

Content Manipulation: The Document object allows you to modify the content of elements, such as changing text, attributes, or even adding event handlers dynamically. This capability is essential for creating dynamic and interactive web pages.

Window Object:
The Window object represents the browser window or tab that contains the web page. It serves as the global object in the browser environment and provides access to various properties and methods related to the window itself, as well as the browsing context.

Here are some important aspects of the Window object:

Window Manipulation: The Window object enables you to control aspects of the browser window, such as resizing, moving, or closing it. You can also open new windows or tabs using the methods provided by the Window object.

Browsing Context: The Window object holds information about the current browsing context, including the URL of the loaded web page, the history of visited pages, and the location object to navigate within the browsing context.

Global Scope: All global JavaScript variables and functions are attached to the Window object. This means that variables declared in the global scope are accessible as properties of the Window object.

Key Differences:
While the Document and Window objects share some similarities, there are crucial differences between them:

Scope: The Document object represents the content of a specific web page, providing methods to manipulate its elements and structure. On the other hand, the Window object represents the browser window or tab and acts as the global object for the JavaScript code running within that window.

Hierarchy: The Document object is part of the Window object. It exists within the context of the Window object and provides access to the content of the web page loaded within the window.

Functionality: The Document object is primarily concerned with manipulating the structure and content of the web page. It provides methods to interact with HTML elements and modify their properties. The Window object, however, focuses on the window itself, allowing you to manipulate the window’s properties, control its behavior, and manage multiple browsing contexts.