1. Explain the difference between inline, internal, and external CSS.

|  |  |  |
| --- | --- | --- |
| inline | Enternal | External |
| Directly within an HTML element using the style attribute. | Inside a <style> tag within the <head> of an HTML document. | In a separate .css file, linked via the <link> tag in the <head>. |
| Quick to apply. | Styles are centralized in one place within the document. | Best for maintainability and performance. |
| Bad for performance and clean code practices. | Useful for single-page styling. | Reusable across multiple HTML files. |
| Hard to maintain. | Not reusable across multiple HTML pages. | Keeps HTML clean. |
| Cannot be reused. | Increases HTML file size. | Requires an additional HTTP request. |
| Bad for performance and clean code practices. | Not great for performance if used excessively. | Styles won’t work if the CSS file is missing or the link is broken. |

2. Describe CSS selectors and list the types of selectors (e.g., element, class, id).

**CSS selectors** are patterns used to select and style specific HTML elements on a web page. They tell the browser **which elements** the styles should apply to.

1.element selectors : Targets all <p> (paragraph) tags.

2.class selectors : Targets all elements with class="box".

3.Id selectors : Targets the element with id="header".

3. Discuss the CSS box model and its components.

The **CSS box model** is a fundamental concept that describes how elements are **structured and spaced** on a web page. Every HTML element is considered a rectangular **box**, and the box model defines how **content**, **padding**, **border**, and **margin** interact around that element.

The components of the CSS Box Model, from the innermost to the outermost, are:

* **Content Area:**

This is the innermost part of the box and contains the actual content of the element, such as text, images, or other media. Its dimensions are controlled by the width and height properties.

* **Padding Area:**

The padding area surrounds the content area and creates space between the content and the element's border. It is controlled by the padding property and its individual sides (padding-top, padding-right, padding-bottom, padding-left). Padding is transparent and takes on the background of the element.

* **Border Area:**

The border area encloses the padding and content areas, providing a visual border around the element. Its appearance (width, style, and color) is defined by the border property and its related sub-properties (border-width, border-style, border-color).

* **Margin Area:**

The margin area is the outermost layer and creates space outside the element's border, separating it from other elements on the page. It is controlled by the margin property and its individual sides (margin-top, margin-right, margin-bottom, margin-left). Margins are transparent and do not take on the element's background.