**CSS & CSS 3**

**• What is a CSS Selector ? Provide examples of element, class and ID selectors.**

* A CSS selector targets HTML elements for styling. It is the part of a CSS rule set that selects the content you want to style.
* **Explain the concept of CSS specificity. How do conflicts between multiple styles get resolved ?**
* CSS specificity is the set of rules that determines which style is applied to an element when multiple styles conflict. The browser calculates a score for each selector and the one with the highest score wins.
* Specificity is calculated based on a hierarchy of selector types, with each type adding a value to the score.
* **What is the difference between internal, external and inline CSS ? Discuss the advantages and disadvantages of each approach.**
* Inline, Internal, and External CSS are three ways to add styles to an HTML document, differing in their scope, reusability, and maintenance.

1. Inline CSS is applied directly to a single HTML element using the style attribute.
2. Internal CSS is placed in a <style> tag within the HTML’s <head>. It styles all elements on a single page.
3. External CSS uses a separate ‘.css’ file linked to the HTML. This is the recommended method as it cleanly separates content from presentation, and is highly reusable.

* **Explain the CSS box model and its components. How does each affect the size of an element ?**
* The CSS Box Model treats every HTML element as a box with four layers: content, padding, border, and margin. These layers define an element's size and spacing.
* **Content :** The actual size of the element, set by width and height.
* **Padding :** Space between the content and the border .
* **Border :** A line surrounding the padding and content .
* **Margin :** Space outside the border, creating distance between elements .
* **What is the difference between border-box and content-box box-sizing in CSS ? Which is the default ?**
* The difference between border-box and content-box is how an element’s total size is calculated.
* **border-box :** The specified width and height include the content, padding and border. This makes the total size predictable, regardless of added padding or border .
* **content-box :** The specified width and height apply only to the content area. Any added padding or border increases the element’s total size .
* The default box-sizing is content-box.
* **What is CSS flexbox and how is it useful for layout design ? Explain the terms**

**flex-container and flex-item .**

* CSS Flexbox is a one-dimensional layout system for arranging items in a container. It's useful for creating flexible and responsive layouts along a single axis (row or column), simplifying tasks like centering items or making columns equal in height.

1. **Flex-container :** The parent element with display:flex. It controls the overall layout and alignment of its children.
2. **Flex-item :** The direct children of the flex-container. They are arranged and sized according to the properties set on their parent and their own individual properties.

* **Describe the properties justify-content, align-items and flex-direction used in flexbox .**
* **flex-direction :** Sets the main axis. Determines if terms are laid out horizontally or vertically.
* **justify-content :** Align items along the main axis. It controls spacing and alignment.
* **align-items :** Aligns items along the cross axis. It’s used for vertical alignment in a row or horizontal alignment in a column.

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* **Explain CSS grid and how it differs from flexbox. When would you use grid over flexbox?**
* CSS Grid is a two-dimensional layout system for arranging elements in both rows and columns, ideal for full-page, complex layouts. Flexbox is a one-dimensional system for arranging items in a single row or column, perfect for small-scale components like navigation bars.

**Grid :** Use it for the main structure of a webpage, like a header, main content and sidebar.

**Flexbox :** Use it for arranging elements within those grid areas, like a group of buttons or a list of items.

* **Describe the grid-template-colums, grid-template-rows, and grid-gap properties.**