CSS Selector & Styling

Theory Assignment

Question 1: What is a CSS selector? Provide examples of element, class, and ID selectors.
Answer:
A CSS selector is a pattern used to select HTML elements to style.

- Element selector: Targets all elements of a specific type.
  Example:
  ```
  p { color: blue; }
  ```
- Class selector: Targets elements with a specific class.
  Example:
  ```
  .btn { background-color: green; }
  ```
- ID selector: Targets a unique element with a specific ID.
  Example:
  ```
  #header { font-size: 24px; }
  ```

Question 2: Explain the concept of CSS specificity. How do conflicts between multiple styles get resolved?
Answer:
CSS specificity determines which rule is applied when multiple rules target the same element.

- ID selectors have the highest specificity.
- Class selectors have medium specificity.
- Element selectors have the lowest specificity.
  If there's a conflict, the rule with higher specificity wins. If specificity is equal, the last rule in the CSS is applied.

Question 3: What is the difference between internal, external, and inline CSS?
Answer:

Type	Advantages	Disadvantages
Inline	Quick and easy for small changes	Not reusable, hard to maintain
Internal	Good for single-page styling	Not reusable across multiple pages
External	Reusable, cleaner, and efficient	Requires an extra HTTP request

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CSS Box Model

Theory Assigment

Question 1: Explain the CSS box model and its components (content, padding, border, margin).
Answer:
The CSS box model defines the structure of every HTML element.

- Content: The actual text or media inside the element.
- Padding: Space between the content and the border.
- Border: A line surrounding the padding and content.
- Margin: Space outside the border, separating elements.

Total size = Content + Padding + Border + Margin

Question 2: What is the difference between border-box and content-box in box-sizing? Which is the default?
Answer:

- content-box (default): Width and height apply only to the content. Padding and border are added outside.
- border-box: Width and height include content, padding, and border. Makes layout easier to manage.

CSS Flexbox

Theory Assignment

Question 1: What is CSS Flexbox, and how is it useful for layout design?
Answer:
Flexbox is a one-dimensional layout model used for arranging items in a row or column.

- Flex-container: The parent element with `display: flex`.
- Flex-item: Child elements inside the flex container.
  Flexbox helps create flexible, responsive layouts across different screen sizes.

Question 2: Describe the properties justify-content, align-items, and flex-direction used in Flexbox.
Answer:

- justify-content: Aligns items horizontally (main axis). Values: center, flex-start, space-between
- align-items: Aligns items vertically (cross axis). Values: center, stretch, flex-end
- flex-direction: Defines the direction of the main axis. Values: row, column, row-reverse

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CSS Grid

Theory Assignment

Question 1: Explain CSS Grid and how it differs from Flexbox. When would you use Grid over Flexbox?
Answer:
CSS Grid is a two-dimensional layout system for designing in rows and columns.

- Use Grid when layout control is needed in both directions.
- Use Flexbox for simpler, one-direction layouts (row or column).

Question 2: Describe the grid-template-columns, grid-template-rows, and grid-gap properties.
Answer:

- grid-template-columns: Defines column sizes.
  Example: `grid-template-columns: 200px 1fr;`
- grid-template-rows: Defines row sizes.
  Example: `grid-template-rows: 100px 2fr;`
- grid-gap (or gap): Adds space between rows and columns.
  Example: `gap: 20px;`

Example:

```css
CopyEdit
.container {
  display: grid;
  grid-template-columns: 1fr 1fr;
  grid-template-rows: 100px 100px;
  gap: 10px;
}
```

Responsive Web Design with Media Queries

Theory Assignment

Question 1: What are media queries in CSS, and why are they important for responsive design?
Answer:
Media queries are used to apply CSS rules based on screen size, resolution, or device type. They help create responsive designs that adapt to all devices.

Question 2: Write a basic media query that adjusts the font size for screens smaller than 600px.
Answer:

```css
CopyEdit
@media (max-width: 600px) {
  body {
    font-size: 14px;
  }
}
```

Typography and Web Fonts

Theory Assignment

Question 1: Explain the difference between web-safe fonts and custom web fonts. Why might you use a web-safe font over a custom font?
Answer:

- Web-safe fonts are installed on most devices (e.g., Arial, Times New Roman).
- Custom fonts (e.g., Google Fonts) are downloaded when the page loads.

Web-safe fonts offer better compatibility and faster loading. Custom fonts allow for unique styling and branding.

Question 2: What is the font-family property in CSS? How do you apply a custom Google Font to a webpage?
Answer:
The font-family property specifies the font for text.

Example:

```css
```

```
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body {
  font-family: 'Arial', sans-serif;
}
```

To apply a Google Font:

1. Add in the head section:

```bash
CopyEdit
<link href="https://fonts.googleapis.com/css2?family=Roboto&display=swap"
rel="stylesheet">
```

2. Use in CSS:

```css
CopyEdit
body {
  font-family: 'Roboto', sans-serif;
}
```