

Module 3 – Frontend – CSS and CSS3

CSS Selectors & Styling

Theory Assignment

- **Question 1:** What is a CSS selector? Provide examples of element, class, and ID selectors.
- **Question 2:** Explain the concept of CSS specificity. How do conflicts between multiple styles get resolved?
- **Question 3:** What is the difference between internal, external, and inline CSS? Discuss the advantages and disadvantages of each approach.

Lab Assignment

Task:

Style the contact form (created in the HTML Forms lab) using external CSS. The following should be implemented:

- ⇒ Change the background color of the form.
- ⇒ Add padding and margins to form fields.
- ⇒ Style the submit button with a hover effect.
- ⇒ Use class selectors for styling common elements and ID selectors for unique elements.

CSS Box Model

Theory Assignment

- **Question 1:** Explain the CSS box model and its components (content, padding, border, margin). How does each affect the size of an element?
- **Question 2:** What is the difference between `border-box` and `content-box` box-sizing in CSS? Which is the default?

Lab Assignment

Task

Create a profile card layout using the box model. The profile card should include:

- ⇒ A profile picture.
- ⇒ The user's name and bio.
- ⇒ A button to "Follow" the user.

Additional Requirements:

- ⇒ Add padding and borders to the elements.
- ⇒ Ensure the layout is clean and centered on the page using CSS margins.
- ⇒ Use the `box-sizing` property to demonstrate both `content-box` and `border-box` on different elements.

CSS Flexbox

Theory Assignment

- **Question 1:** What is CSS Flexbox, and how is it useful for layout design? Explain the terms `flex-container` and `flex-item`.
- **Question 2:** Describe the properties `justify-content`, `align-items`, and `flex-direction` used in Flexbox.

Lab Assignment

Task

Create a simple webpage layout using Flexbox. The layout should include:

- ⇒ A header.
- ⇒ A sidebar on the left.
- ⇒ A main content area in the center.
- ⇒ A footer.

Additional Requirements:

- ⇒ Use Flexbox to position and align the elements.
- ⇒ Apply different `justify-content` and `align-items` properties to observe their effects.
- ⇒ Ensure the layout is responsive, adjusting for smaller screens.

CSS Grid

Theory Assignment

- **Question 1:** Explain CSS Grid and how it differs from Flexbox. When would you use Grid over Flexbox?
- **Question 2:** Describe the `grid-template-columns`, `grid-template-rows`, and `grid-gap` properties. Provide examples of how to use them.

Lab Assignment

Task

Create a 3x3 grid of product cards using CSS Grid. Each card should contain:

- ⇒ A product image.
- ⇒ A product title.
- ⇒ A price.

Additional Requirements:

- ⇒ Use `grid-template-columns` to create the grid layout.
- ⇒ Use `grid-gap` to add spacing between the grid items.
- ⇒ Apply hover effects to each card for better interactivity.

Responsive Web Design with Media Queries

Theory Assignment

- **Question 1:** What are media queries in CSS, and why are they important for responsive design?
- **Question 2:** Write a basic media query that adjusts the font size of a webpage for screens smaller than 600px

Lab Assignment(Task)

Build a responsive webpage that includes:

- ⇒ A navigation bar.
- ⇒ A content section with two columns.
- ⇒ A footer.

Additional Requirements:

- ⇒ Use media queries to make the webpage responsive for mobile devices.
- ⇒ On smaller screens (below 768px), stack the columns vertically.
- ⇒ Adjust the font sizes and padding to improve readability on mobile.

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?
- **Question 2:** What is the `font-family` property in CSS? How do you apply a custom GoogleFont to a webpage?

Lab Assignment

Task

Create a blog post layout with the following:

- ⇒ A title, subtitle, and body content.
- ⇒ Use at least two different fonts (one for headings, one for body content).
- ⇒ Style the text to be responsive and easy to read.

Additional Requirements:

- ⇒ Use a custom font from Google Fonts.
- ⇒ Adjust line-height, font-size, and spacing for improved readability.