

INTRODUCTION TO CSS BOX MODEL, BORDERS, AND VARIABLES

FULL STACK SKILLS BOOTCAMP

INTRODUCTION TO CSS BOX MODEL, BORDERS, AND VARIABLES

- **Lesson Overview:**
- In this lesson, we will be introduced to CSS Box Model, CSS Borders, border-radius, Box-shadow, CSS Variables and Examples and Real-World Use Cases

```
/* Box Model Demonstration */  
.box-model-demo {  
  width: 80%;  
  padding: 20px;  
  border: 5px solid #007acc;  
  margin: 20px auto;  
  background-color: #ffffff;  
  box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);  
}
```

INTRODUCTION TO CSS BOX MODEL

- Definition: **The CSS Box Model** is a fundamental concept for understanding how elements are structured and rendered in the browser..
- It consists of:
 - **Content:** The actual content (text, images, etc.)
 - **Padding:** Space between the content and the border
 - **Border:** The line surrounding the padding (optional)
 - **Margin:** Space outside the border that separates elements from others

CSS BOX MODEL EXAMPLE

- **Content:** 200px width
- **Padding:** 20px
- **Border:** 5px solid
- **Margin:** 10px
- **Total width:** width + padding + border + margin =
200 + 20 + 5 + 10 = 235px

```
.box {  
  width: 200px;  
  padding: 20px;  
  border: 5px solid black;  
  margin: 10px;  
}
```

CSS BORDERS: BASIC PROPERTIES

- Borders define the edges of an element.
- **Properties:**
 - `border-width`: Specifies the thickness (e.g., 2px)
 - `border-style`: Defines the style (e.g., solid, dashed, dotted)
 - `border-color`: Sets the color (e.g., red, #333)
- Borders can be applied to each side (`border-top`, `border-right`, etc.) or as shorthand.

CSS SELECTORS: UNIVERSAL, ELEMENT, CLASS, AND ID

```
.box {  
  border: 3px solid blue;  
}
```

- **Result:** A blue solid border with 3px thickness.

Demo ...

CSS BORDER-RADIUS

- **Border-radius** rounds the corners of an element.
- Can be applied to individual corners (border-top-left-radius, etc.) or all corners.
- Syntax:

```
.box {  
  border-radius: 10px;  
}
```

- **Result:** Rounded corners with a radius of 10px.

CSS BORDER-RADIUS EXAMPLES

```
.box {  
  border: 2px solid red;  
  border-radius: 50%;  
}
```

- **Result:** A perfect circle if applied to a square element.
- Also possible to specify different radii for each corner (e.g., `border-radius: 10px 20px 30px 40px;`).

CSS BOX-SHADOW

- Adds a shadow to an element, creating a 3D effect.

```
.box {  
  box-shadow: 5px 5px 15px rgba(0, 0, 0, 0.3);  
}
```

- **Parameters:** Horizontal offset (5px)
- Vertical offset (5px)
- Blur radius (15px)
- Color (RGBA for transparency)

BOX-SHADOW EXAMPLE

```
.box {  
  width: 200px;  
  height: 200px;  
  background-color: lightgrey;  
  box-shadow: 10px 10px 20px rgba(0, 0, 0, 0.5);  
}
```

- **Result:** A grey box with a shadow that offsets by 10px on both axes, with a 20px blur.

CSS VARIABLES (CUSTOM PROPERTIES)

- **CSS Variables** allow you to store values in variables for reuse throughout your stylesheet.
- **Benefits:**
- Centralized management of values (colors, spacing, etc.).
- Easier to implement changes across large stylesheets.

```
:root {  
  --primary-color: #ff6347;  
}  
.box {  
  background-color: var(--primary-color);  
}
```

USING CSS VARIABLES

- Variables are defined in the :root selector (global scope).
- Accessed using var(--variable-name).

```
:root {  
  --font-size: 16px;  
  --main-bg-color: #f0f0f0;  
}  
  
body {  
  background-color: var(--main-bg-color);  
  font-size: var(--font-size);  
}
```

EXAMPLE: DARK MODE WITH CSS VARIABLES

- Use CSS variables to easily switch themes:

```
/* Define CSS variables for light and dark mode */
:root {
  --bg-color: #ffffff;
  --text-color: #000000;
  --table-border-color: #dddddd;
  --header-bg-color: #f1f1f1;
  --header-text-color: #333333;
}

/* Dark mode variables */
.dark-mode {
  --bg-color: #2e2e2e;
  --text-color: #f1f1f1;
  --table-border-color: #555555;
  --header-bg-color: #444444;
  --header-text-color: #ffffff;
}
```

REAL WORLD USE CASES

Theming and Design Consistency:

CSS variables are ideal for defining colors, fonts, spacing, and other design properties in one place.

This ensures consistency across a website or app. For example, if you define a primary color as a variable, updating it in one location will automatically apply the change everywhere it's used.

RECAP

- **CSS Box Model**
 - The **Box Model** defines how elements are structured on a webpage. Every element is essentially a box made up of four parts:
 - **Content:** The actual content inside the element.
 - **Padding:** Space between the content and the border.
 - **Border:** The edge surrounding the padding.
 - **Margin:** Space outside the border, separating the element from others.
 - We learned how to use properties like padding, border, and margin to control the layout and spacing of elements.
- **MDN Web Docs – CSS Box Model:**
https://developer.mozilla.org/en-US/docs/Learn/CSS/Building_blocks/The_box_model
 - **CSS-Tricks – CSS Box Model:**
<https://css-tricks.com/the-css-box-model/>

RECAP

- **Border Styling**
 - We explored different ways to style borders in CSS. Key properties include:
 - `border-width`: Sets the thickness of the border.
 - `border-style`: Defines the type of border (e.g., solid, dashed, dotted).
 - `border-color`: Sets the color of the border.
- **MDN Web Docs – Border Styling:**
<https://developer.mozilla.org/en-US/docs/Web/CSS/border-style>
- **CSS-Tricks – Border Styling:**
<https://css-tricks.com/almanac/properties/b/border/>

RECAP

- **CSS Variables**
- CSS Variables, also known as custom properties, allow you to define reusable values in your stylesheets.
- This helps maintain consistency and makes future changes easier.
- **MDN Web Docs – CSS Variables:**
https://developer.mozilla.org/en-US/docs/Web/CSS/Using_CSS_custom_properties
- **CSS-Tricks – CSS Variables:**
<https://css-tricks.com/a-complete-guide-to-custom-properties/>

QUESTIONS?