

## Basic Syntax and Structure in CSS3

CSS3 (Cascading Style Sheets Level 3) is used to style and layout web pages. Understanding its basic syntax and structure is essential for effectively designing web content. Here's an overview:

### Basic Syntax

#### Selectors

Selectors are used to target HTML elements to apply styles. Common selectors include:

- **Type Selector**: Targets HTML elements by name (e.g., `p`, `h1`).
- **Class Selector**: Targets elements with a specific class (e.g., `.className`).
- **ID Selector**: Targets elements with a specific ID (e.g., `#idName`).
- **Attribute Selector**: Targets elements with a specific attribute (e.g., `input[type="text"]`).
- **Pseudo-classes and Pseudo-elements**: Target elements based on their state or position (e.g., `:hover`, `::before`).

#### Properties and Values

CSS rules are composed of property-value pairs, enclosed in curly braces `{ }`.

Example:

```
``css
selector {
  property: value;
}

p {
  color: blue;
  font-size: 16px;
}
``
```

#### Comments

Comments in CSS are enclosed in `/* */` and are ignored by browsers.

Example:

```
``css
/* This is a comment */
``
```

## Structure of a CSS File

A CSS file consists of a series of rules. Each rule has a selector and a declaration block.

1. **\*\*Selectors\*\***: Identify which HTML elements the rule applies to.
2. **\*\*Declaration Block\*\***: Contains one or more declarations separated by semicolons `;`.

Example:

```
``css
/* Selectors */
h1 {
  color: red; /* Property: color, Value: red */
}

.className {
  font-size: 14px;
  margin: 10px;
}

#idName {
  border: 1px solid black;
}

/* Pseudo-class */
a:hover {
  text-decoration: underline;
}

/* Pseudo-element */
p::first-line {
  font-weight: bold;
}
``
```

## CSS3 Features

CSS3 introduces new features and modules, enhancing the capabilities of CSS. Some notable features include:

1. **\*\*Selectors\*\***:
  - New attribute selectors (e.g., `input[type="text"]`).
  - Structural pseudo-classes (e.g., `:nth-child`, `:nth-of-type`).

2. **Box Model**:
  - Advanced box model properties (e.g., `box-sizing`, `min-width`, `max-width`).
3. **Backgrounds and Borders**:
  - Multiple backgrounds (e.g., `background-image` can accept multiple values).
  - Border images (e.g., `border-image`).
4. **Text Effects**:
  - Text shadows (e.g., `text-shadow`).
  - Word wrapping (e.g., `word-wrap`).
5. **2D/3D Transformations**:
  - Transformations (e.g., `transform`, `rotate`, `scale`).
  - Transitions (e.g., `transition` properties for smooth animations).
6. **Flexbox**:
  - Flexible box layout (e.g., `display: flex`).
7. **Grid Layout**:
  - Two-dimensional grid-based layout (e.g., `display: grid`).
8. **Media Queries**:
  - Responsive design (e.g., `@media` rules).

Example of some CSS3 features:

```
``css
/* Flexbox */
.container {
    display: flex;
    justify-content: space-between;
}

/* Grid Layout */
.grid-container {
    display: grid;
    grid-template-columns: 1fr 2fr;
}

/* Transitions */
.button {
    background-color: blue;
    transition: background-color 0.3s ease;
}

.button:hover {
```

```
background-color: green;  
}
```

```
/* Media Queries */  
@media (max-width: 600px) {  
  .responsive-text {  
    font-size: 12px;  
  }  
}  
...
```