**What is Sass?**

**Sass** (Syntactically Awesome Stylesheets) is a **CSS preprocessor** that extends the capabilities of regular CSS by introducing features such as variables, nesting, mixins, inheritance, and more. These features allow developers to write more efficient and maintainable stylesheets.

**How Does Sass Differ from Regular CSS?**

* **Variables**: Sass allows the use of variables, whereas regular CSS does not. Variables in Sass store values like colors, fonts, and sizes.
* **Nesting**: Sass allows you to nest selectors inside one another, mimicking the structure of your HTML, whereas regular CSS requires selectors to be written flat.
* **Partials and Imports**: Sass supports splitting CSS into multiple files (partials) and combining them into one using the @import rule, which is not possible in regular CSS.
* **Mixins**: Sass allows you to reuse blocks of code, which regular CSS lacks.

**Simple Sass File Demonstrating Nesting, Partials, and Imports**

**File 1: \_variables.scss (Partial)**

scss

Copy code

// Variables

$primary-color: #3498db;

$font-size: 16px;

**File 2: \_buttons.scss (Partial)**

scss

Copy code

// Button styles using variables and mixins

@mixin button-style($bg-color) {

background-color: $bg-color;

padding: 10px 20px;

border-radius: 5px;

color: white;

}

.button {

@include button-style($primary-color);

font-size: $font-size;

&:hover {

background-color: darken($primary-color, 10%);

}

}

**File 3: styles.scss (Main File)**

scss

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// Import partials

@import 'variables';

@import 'buttons';

// Additional styles

body {

font-family: Arial, sans-serif;

}

**Compiled CSS Output**

css

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/\* From \_variables.scss \*/

/\* Variables are compiled to their values in CSS \*/

.button {

background-color: #3498db;

padding: 10px 20px;

border-radius: 5px;

color: white;

font-size: 16px;

}

.button:hover {

background-color: #2a7fb7;

}

body {

font-family: Arial, sans-serif;

}

**Key Differences from Standard CSS:**

1. **Nesting**: In the Sass file, nested selectors (.button:hover) mirror the HTML structure, whereas in the compiled CSS, these selectors are flattened.

**Sass Nesting:**

scss

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.button {

&:hover {

background-color: darken($primary-color, 10%);

}

}

**Compiled CSS:**

css

Copy code

.button:hover {

background-color: #2a7fb7;

}

1. **Partials and Imports**: In Sass, styles are split into multiple partials (\_variables.scss and \_buttons.scss) and imported using @import, allowing for better organization. Regular CSS does not have this capability; it would require all styles to be in a single file.
2. **Variables and Mixins**: Sass allows you to use variables like $primary-color and mixins like @mixin button-style, which are replaced with their actual values during compilation. Regular CSS has no concept of variables or reusable blocks of code (mixins).