**🔵 3. SCSS Syntax (Basics)**

**✅ Variables**

scss

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$primary-color: #3498db;

$padding: 16px;

body {

background-color: $primary-color;

padding: $padding;

}

**💡 Note:** $ se variable declare karte hain.

**✅ Nesting**

scss

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nav {

ul {

li {

a {

color: white;

text-decoration: none;

}

}

}

}

**💡 Note:** HTML jaisi hierarchy mein likhne se code readable ban jaata hai.

**✅ Partials & Import**

* \_buttons.scss, \_variables.scss → Partials (underscore lagta hai filename ke aage)

scss

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@import 'buttons';

@import 'variables';

**🟠 4. Reusability in Sass**

**✅ Mixin**

scss

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@mixin card($bg) {

background: $bg;

padding: 10px;

border-radius: 10px;

}

.box {

@include card(#f1f1f1);

}

**✅ Extend / Placeholder**

scss

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%button-base {

padding: 8px 12px;

border-radius: 5px;

}

.btn {

@extend %button-base;

background: blue;

}

**🟡 5. Logic & Loops**

**✅ @if, @else**

scss

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$theme: light;

body {

@if $theme == light {

background: #fff;

} @else {

background: #000;

}

}

**✅ @for**

scss

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@for $i from 1 through 4 {

.col-#{$i} {

width: 25% \* $i;

}

}

**✅ @each (for maps/lists)**

scss

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$colors: (primary: blue, danger: red);

@each $name, $color in $colors {

.text-#{$name} {

color: $color;

}

}

**🟣 6. Built-in Sass Functions (Most Useful)**

**✅ Color Functions**

scss

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lighten(#3498db, 20%) // Lightens a color

darken(#e74c3c, 15%) // Darkens a color

saturate(#ccc, 20%) // Increases color intensity

desaturate(#ccc, 10%) // Decreases intensity

adjust-hue(#f00, 45deg) // Changes hue

invert(#fff) // Inverts the color

**✅ String Functions**

scss

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str-length("hello") // 5

to-upper-case("nav") // "NAV"

to-lower-case("TEXT") // "text"

str-index("world", "r") // 3

**✅ List Functions**

scss

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$my-list: 10px, 20px, 30px;

length($my-list) // 3

nth($my-list, 2) // 20px

join($my-list, 40px) // 10px, 20px, 30px, 40px

**✅ Map Functions**

scss

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$colors: (primary: #00f, danger: #f00);

map-get($colors, primary) // #00f

map-has-key($colors, info) // false

map-keys($colors) // (primary, danger)

**✅ Math Functions**

scss

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ceil(4.2) // 5

floor(4.9) // 4

round(4.6) // 5

abs(-20) // 20

min(10px, 5px) // 5px

max(10px, 5px) // 10px