

CSS Basics:**Selectors:** Target elements for styling.

```
...
element { property: value; } /* Element Selector */
.class { property: value; } /* Class Selector */
#id { property: value; } /* ID Selector */
```

Syntax:

```
...
selector {
  property: value;
}
/* comments in css */
```

Transition:

```
...
selector {
  transition: all 0.3s ease;
}
```

Animation:

```
...
@keyframes example {
  from { opacity: 0; }
  to { opacity: 1; }
}
div {
  animation: example 2s infinite;
}
```

Selectors:**Universal Selector:** *

```
...
* { margin: 0; padding: 0; }
```

Group Selector: ,

```
...
h1, h2, p { color: blue; }
```

Child Selector: >

```
...
div > p { color: red; }
```

Descendant Selector: (space)

```
...
div p { font-size: 14px; }
```

Adjacent Sibling: +

```
...
h1 + p { margin-top: 0; }
```

General Sibling: ~

```
...
h1 ~ p { color: green; }
```

Text and Fonts:

```
...
font-family: Arial, sans-serif; /* Font family */
font-size: 16px; /* Font size */
font-weight: bold; /* Font weight */
font-style: italic; /* Font style */
color: #333; /* Text color */
text-align: center; /* Text alignment */
text-transform: uppercase; /* Capitalization */
line-height: 1.5; /* Line height */
letter-spacing: 2px; /* Letter spacing */
text-decoration: underline; /* Text decoration */
```

Box Model:**Properties:**

```
...
margin: 10px; /* Outer space */
border: 1px solid black; /* Border */
padding: 10px; /* Inner space */
width: 100px; /* Content width */
height: 100px; /* Content height */
```

Shorthand:

```
...
margin: 10px 20px; /* Vertical Horizontal */
padding: 5px 10px 15px; /* Top Right/Left Bottom */
```

Positioning:**Static (default):**

```
...
position: static; /* normal flow of the page */
```

Relative:

```
...
position: relative; /* Positioned relative to its normal place */
top: 10px; /* Moves element 10px down */
left: 20px; /* Moves element 20px right */
```

Absolute:

```
...
position: absolute; /* Relative to nearest positioned ancestor */
top: 50px; /* 50px down */
left: 50px; /* 50px right */
```

Fixed:

```
...
position: fixed; /* Stays in place relative to the viewport */
top: 0; /* Sticks to the top of the viewport */
```

Sticky:

```
...
position: sticky; /* Scrolls with the page until it reaches a defined position */
top: 10px; /* Sticks 10px from the top when scrolling */
```

HTML Page Structure:

```
<html>
<head>
  <title>Page title</title>
</head>
<body>
  <h1>dis is a heading</h1>
  <p>dis is a paragraph.</p>
  <p>This is another paragraph.</p>
</body>
</html>
```

Borders:

```
...
border: 1px solid #000; /* Border shorthand */
border-radius: 10px; /* Rounded corners */
box-shadow: 2px 2px 5px rgba(0, 0, 0, 0.5); /* Shadow */
```

Backgrounds:

```
...
background-color: #f0f0f0; /* Background color */
background-image: url('image.jpg'); /* Background image */
background-repeat: no-repeat; /* Repeat settings */
background-size: cover; /* Size (cover, contain) */
background-position: center; /* Position (e.g., top, center) */
```

Flexbox:

```
...
display: flex;
justify-content: center; /* Horizontal alignment */
align-items: center; /* Vertical alignment */
flex-direction: row; /* Row or column */
gap: 10px; /* Space between items */
```

Grid:

```
...
display: grid;
grid-template-columns: 1fr 2fr; /* Two columns */
grid-template-rows: auto 100px; /* Two rows */
gap: 10px; /* Space between items */
```

Responsive Design:**Media Queries:**

```
...
@media (max-width: 768px) {
  body { font-size: 14px; }
}
```

Units:

%: Percentage of parent.
em/rem: Relative to font size.
vh/vw: Viewport height/width.

Overflow:

```
...
overflow: hidden; /* Hide content that exceeds the container */
overflow-x: scroll; /* Horizontal scroll */
overflow-y: auto; /* Vertical scroll */
```

Clip-path:

```
...
clip-path: circle(50% at 50% 50%); /* Circular clipping */
```

CSS Color and Opacity:**RGBA:**

```
...
color: rgba(255, 0, 0, 0.5); /* red, green, blue and opacity */
```

HSLA:

```
...
color: hsla(0, 100%, 50%, 0.5); /* Hue, Saturation, Lightness, and Alpha */
```

Opacity:

```
...
opacity: 0.5; /* 50% opacity (Alpha) */
```

Text Effects:**Text Shadow:**

```
...
text-shadow: 2px 2px 4px rgba(0, 0, 0, 0.3); /* Shadow on text */
```

Word Wrap:

```
...
word-wrap: break-word; /* Break long words */
```

Text Overflow:

```
...
text-overflow: ellipsis; /* Show ellipsis when text overflows */
```

White-space:

```
...
white-space: nowrap; /* Prevent text from wrapping */
```

Z-Index:

```
...
z-index: 10; /* Layer ordering */
```

Creating Stacking Context:

```
...
position: relative;
z-index: 1; /* Creates a new stacking context */
```

Column Layout:**CSS Columns:**

```
...
column-count: 3; /* Divide content into 3 columns */
column-gap: 20px; /* Space between columns */
```

Breaks Between Columns:

```
...
break-inside: avoid; /* Prevent breaking between elements in columns */
```

Visibility:

```
...
visibility: hidden; /* Hide the element but maintain layout space */
```

Display:

```
...
display: none; /* Completely hide the element */
display: inline-block; /* Inline element that behaves like a block */
display: flex; /* Flexbox layout */
display: grid; /* Grid layout */
```

CSS Variables:**Defining Variables:**

```
...
:root {
  --main-color: #3498db;
  --padding: 10px;
}
```

Using Variables:

```
...
body {
  background-color: var(--main-color); /* Use variable for background color */
  padding: var(--padding); /* Use variable for padding */
}
```

CSS Filters

```
...
img {
  filter:
    blur(5px) /* Apply a blur effect */
    brightness(0.8) /* Darken the image */
    contrast(1.5) /* Increase the contrast */
    grayscale(50%) /* Apply 50% grayscale */
    sepia(40%) /* Apply 40% sepia tone */
    saturate(2) /* Increase saturation */
    hue-rotate(90deg) /* Rotate hue by 90 degrees */
    invert(100%) /* Invert the colors */
    opacity(0.7) /* Make the image 70% opaque */
    drop-shadow(10px 10px 10px rgba(0, 0, 0, 0.5)); /* Apply shadow */
}
```

#090300

#663399

#b46a9c

#f8f8f2

#282a36

#bd93fa

#6171a3

#ffffff