

Web Development Basics Cheatsheet

HTML Basics

Basic Structure

Element	Description
<code><!DOCTYPE html></code>	Declares the document type
<code><html></code>	Root element of the HTML page
<code><head></code>	Contains meta-information about the document
<code><body></code>	Contains the visible content of the page

Common HTML Tags

Headings

```
<h1>Heading 1</h1>
<h2>Heading 2</h2>
<h3>Heading 3</h3>
<h4>Heading 4</h4>
<h5>Heading 5</h5>
<h6>Heading 6</h6>
```

Paragraphs

```
<p>This is a paragraph.</p>
```

Links

```
<a href="https://www.example.com">This is a link</a>
```

Images

```

```

Lists

Ordered List (numbered)

```
<ol>
  <li>First item</li>
  <li>Second item</li>
  <li>Third item</li>
</ol>
```

Unordered List (bulleted)

```
<ul>
  <li>First item</li>
  <li>Second item</li>
  <li>Third item</li>
</ul>
```

Semantic Elements

```
<header>Site or section header</header>
<nav>Navigation links</nav>
<main>Main content of the page</main>
<section>A section of content</section>
<article>An independent article</article>
<footer>Site or section footer</footer>
```

CSS Basics

Types of CSS

Type	Description	Example
Inline CSS	Styles applied directly to HTML elements	<h3 style="color: blue;">Blue heading</h3>
Internal CSS	Styles defined in <head> section	<head><style>h3 {color: green;}</style></head>
External CSS	Styles in separate .css file	<head><link rel="stylesheet" href="styles.css"></head>

Basic CSS Properties

Text and Color

```
/* Text color */
p {
  color: #333;
}

/* Background color */
body {
  background-color: #f0f8ff;
}

/* Font styling */
h1 {
  font-size: 2.5em;
  font-weight: bold;
  font-family: "Arial", sans-serif;
}
```

Box Model

```
div {
  /* Spacing */
  margin: 10px; /* Space outside the element */
  padding: 15px; /* Space inside the element */

  /* Borders */
  border: 1px solid black;
  border-radius: 5px; /* Rounded corners */

  /* Size */
  width: 300px;
  height: 200px;
}
```

Flexbox (Layout)

```
.container {
  display: flex;
  justify-content: center; /* Horizontal alignment */
  align-items: center; /* Vertical alignment */
  flex-direction: row; /* or column */
}
```

Media Queries

```
/* Responsive design for screens smaller than 600px */
@media (max-width: 600px) {
  .container {
    flex-direction: column;
  }
}
```

JavaScript Basics

Variables and Data Types

Declaring Variables

```
// Modern way to declare variables
let name = "John"; // Can be reassigned
const age = 25; // Cannot be reassigned
```

Common Data Types

Type	Example
String	let text = "Hello World";
Number	let count = 42; let price = 19.99;
Boolean	let isActive = true;
Array	let colors = ["red", "green", "blue"];
Object	let person = {name: "John", age: 30};
Undefined	let result;
Null	let empty = null;

Basic Operators

Operator	Description	Example
+	Addition	let sum = 5 + 3;
-	Subtraction	let difference = 10 - 5;
*	Multiplication	let product = 4 * 2;
/	Division	let quotient = 20 / 4;
%	Modulus (remainder)	let remainder = 10 % 3;
++	Increment	count++;

Operator	Description	Example
<code>--</code>	Decrement	<code>count--;</code>

Control Structures

Conditionals

```
// If statement
if (age >= 18) {
  console.log("You are an adult");
} else if (age >= 13) {
  console.log("You are a teenager");
} else {
  console.log("You are a child");
}
```

Loops

```
// For loop
for (let i = 0; i < 5; i++) {
  console.log(i);
}

// While loop
let i = 0;
while (i < 5) {
  console.log(i);
  i++;
}
```

Functions

```
// Function declaration
function greet(name) {
  return "Hello, " + name + "!";
}

// Function call
let message = greet("Alice");
console.log(message); // Outputs: Hello, Alice!

// Arrow function (modern syntax)
const multiply = (a, b) => a * b;
console.log(multiply(2, 3)); // Outputs: 6
```

DOM Manipulation

```
// Selecting elements
const heading = document.getElementById("title");
const paragraphs = document.getElementsByTagName("p");
const buttons = document.querySelectorAll(".btn");

// Changing content
heading.textContent = "New Title";
heading.innerHTML = "<span>New Title</span>";

// Changing styles
heading.style.color = "blue";
heading.style.fontSize = "24px";

// Adding event listeners
const button = document.getElementById("myButton");
button.addEventListener("click", function () {
  alert("Button was clicked!");
});
```

Putting It All Together

Basic HTML Template

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>My Web Page</title>
    <link rel="stylesheet" href="styles.css" />
  </head>
  <body>
    <header>
      <h1>Welcome to My Site</h1>
    </header>
    <main>
      <p>This is my first web page!</p>
      <button id="colorButton">Change Color</button>
    </main>
    <footer>
      <p>&copy; 2023 My Website</p>
    </footer>

    <script src="script.js"></script>
  </body>
</html>
```

CSS File (styles.css)

```
body {
  font-family: Arial, sans-serif;
  line-height: 1.6;
  margin: 0;
  padding: 20px;
  background-color: #f4f4f4;
}

header,
footer {
  background-color: #333;
  color: white;
  padding: 10px;
  text-align: center;
}

main {
  margin: 20px 0;
}

button {
  background-color: #4caf50;
  color: white;
  border: none;
  padding: 10px 15px;
  cursor: pointer;
  border-radius: 4px;
}
```

JavaScript File (script.js)

```
// Wait for the document to be fully loaded
document.addEventListener("DOMContentLoaded", function () {
  // Get the button element
  const colorButton = document.getElementById("colorButton");

  // Add click event listener
  colorButton.addEventListener("click", function () {
    // Generate a random color
    const randomColor = "#" + Math.floor(Math.random() *
16777215).toString(16);

    // Change the background color
    document.body.style.backgroundColor = randomColor;
  });
});
```