

Introduction to Web Design

JavaScript





HTML

CSS

JavaScript

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You can think of a web page as consisting of three layers: structure, presentation, and behavior.

- HTML is the structure layer.
- CSS is the presentation layer.
- JavaScript is the behavior layer.

JavaScript is a programming language for creating interactivity and functionality in web browsers.

hello_world!

Increment Red Green

```
<body>  
<p id="myP">hello_world!</p>  
  
<button type="button" id="increment">Increment</button>  
<button type="button" id="red">Red</button>  
<button type="button" id="green">Green</button>  
  
<div id="output"></div>
```

```
<style type="text/css">  
  #myP{  
    color: orange;  
    font-size: 150px;  
  }  
  
  #myP:hover{  
    color: pink;  
    font-size: 50px;  
  }  
</style>
```

```
<script>  
  
let a;  
a = 75;  
let r;  
r = 0;  
let b;  
b = 0;  
  
let increment = document.getElementById("increment");  
let red = document.getElementById("red");  
let green = document.getElementById("green");  
  
increment.addEventListener("click", function(){  
  
  a = a +1;  
  document.getElementById("myP").style.fontSize = a+"px";  
  console.log(a);  
  document.getElementById("output").innerHTML = a;  
  
});  
  
red.addEventListener("click", function(){  
  
  r = r+10;  
  document.getElementById("myP").style.color = "rgb"+("("+r+",0,0)");  
});
```

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Background

JavaScript

JavaScript was invented by Brendan Eich and introduced by Netscape in 1995.

At that time, the Java language was ascendant and the name "JavaScript" was an attempt to ride this popularity.

Eventually, browsers other than Netscape began to support JavaScript functionality, calling it "ECMAScript."

Today, JavaScript is not only a lingua franca of the web but a basis for many other computational media projects.



ES6 is the latest version of JavaScript (ECMA 2015)

ECMAScript 2015 was the second major revision to JavaScript.

ECMAScript 2015 is also known as ES6 and ECMAScript 6.

Some of the major updates included:

- [The let keyword](#)
- [The const keyword](#)
- [Arrow Functions](#)
- [Promises](#)

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Front-End Language

JavaScript

Like HTML and CSS, JavaScript is usually rendered in the web browser.

Because it's rendered in the browser rather than on a server, JavaScript is considered a "front-end" language.

A browser's "JavaScript engine" interprets and executes JavaScript code in the browser.

There are different JavaScript engines for different browsers.

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Capability

JavaScript

Computationally speaking, there isn't much JavaScript can't do; it's a robust programming language.

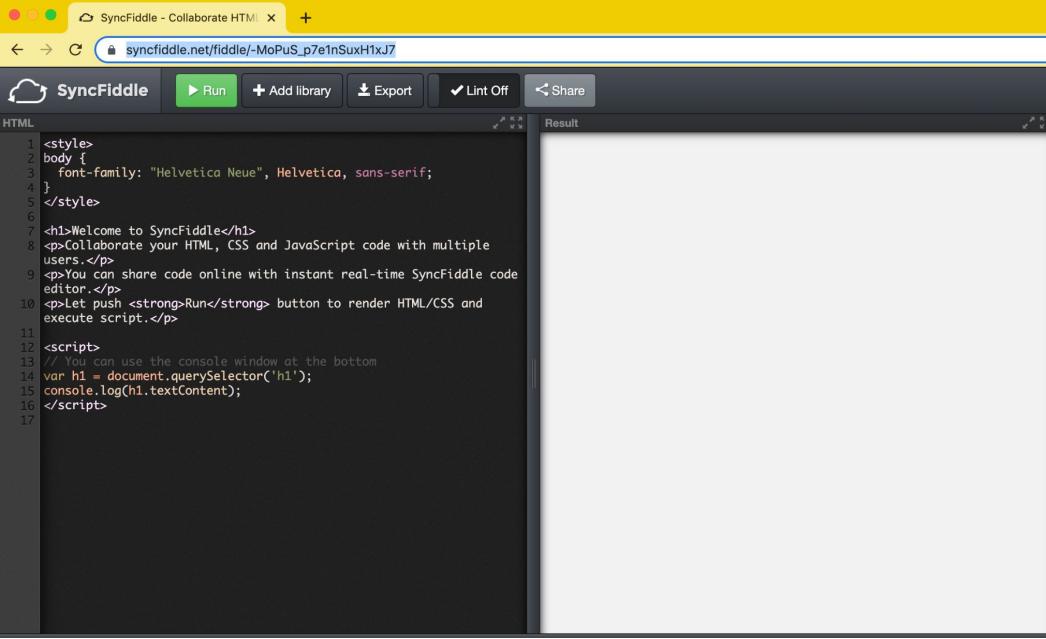
Core functionality includes modifying HTML and CSS, communicating with the server, and storing data.

We will use JavaScript to modify page content and style.

As with any technology, it's good to consider when to use it and when it's unnecessary.

Let's say "Hello World" with JS together!
Using (console.log, alert, + .innerHTML methods) and then style our innerHTML output!

https://syncfiddle.net/fiddle/-MoPuS_p7e1nSuxH1xJ7



The screenshot shows the SyncFiddle web application interface. At the top, there is a yellow header bar with three dots, a title 'SyncFiddle - Collaborate HTML...', and a '+' button. Below the header is a toolbar with a cloud icon, the 'SyncFiddle' logo, a 'Run' button, an 'Add library' button, an 'Export' button, a 'Lint Off' button, and a 'Share' button. The main area is divided into two panes: 'HTML' on the left and 'Result' on the right. The 'HTML' pane contains the following code:

```
1 <style>
2 body {
3   font-family: "Helvetica Neue", Helvetica, sans-serif;
4 }
5 </style>
6
7 <h1>Welcome to SyncFiddle</h1>
8 <p>Collaborate your HTML, CSS and JavaScript code with multiple
users.</p>
9 <p>You can share code online with instant real-time SyncFiddle code
editor.</p>
10 <p>Let push <strong>Run</strong> button to render HTML/CSS and
execute script.</p>
11
12 <script>
13 // You can use the console window at the bottom
14 var h1 = document.querySelector('h1');
15 console.log(h1.textContent);
16 </script>
17
```

The 'Result' pane is currently empty, showing a plain white space.

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Application

JavaScript

As with CSS, JavaScript targets HTML elements to do something with them.

There are three ways you can apply JavaScript to HTML.

- Inline JavaScript
- Embedded JavaScript
- External JavaScript

External and embedded JavaScript are preferable for their separation of content and behavior.