07: Web Dev Studio

Review

Semantic HTML

CSS Selectors and Styling

CSS Box Model

Layouts with Flexbox and Grids

Working with External Libraries

External CSS Libraries

- **What are CSS libraries?**
  - Pre-written collections of styles, effects, and animations.
- **Benefits of CSS libraries**
  - Speed up development.
  - Ensure consistency across designs.
  - Offer responsive, cross-browser-compatible styles.
- **Popular libraries we'll cover**: Bootstrap, Tailwind CSS, Animate.css, and Hover.css.

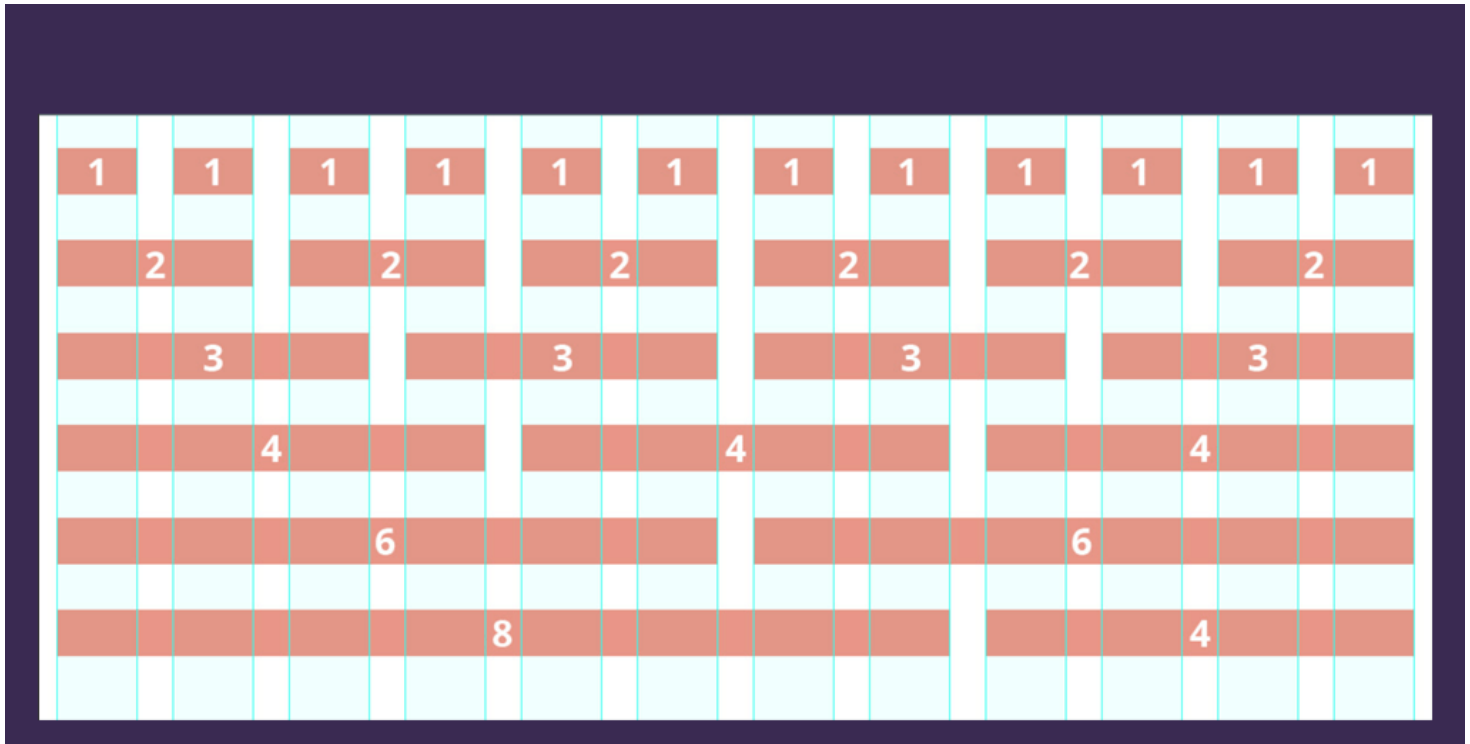
Including External CSS

- External CSS can be linked with the <link> tag just like our local CSS files
- Instead, most commonly we point the source to a CDN that's hosting the file

```
<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css">
```

Bootrstrap

- Bootstrap is one of the most popular CSS libraries for creating consistent components and grid-based layouts
- It uses a 12-column grid system to create layouts



Bootstrap Components

- Bootstrap also offers a pre-defined set of styles and components with its library, along with variants of each component

TailwindCSS

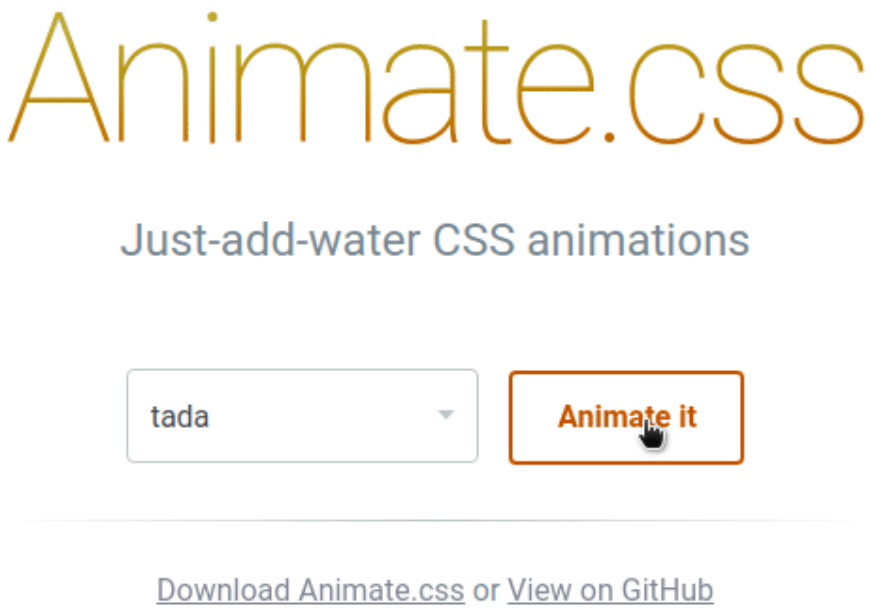
- Tailwind is a utility-based approach to defining styles
- It offers a short-hand way to write regular CSS properties within the HTML
- These classes are then compiled to output vanilla CSS
- Documentation: https://tailwindcss.com/

TailwindCSS

```
<button class="bg-blue-500 hover:bg-blue-700 text-white font-bold py-2 px-4 rounded">
Button
</button>
```

Animate.CSS

- Easy to use pre-defined animations
- Documentation: https://animate.style/

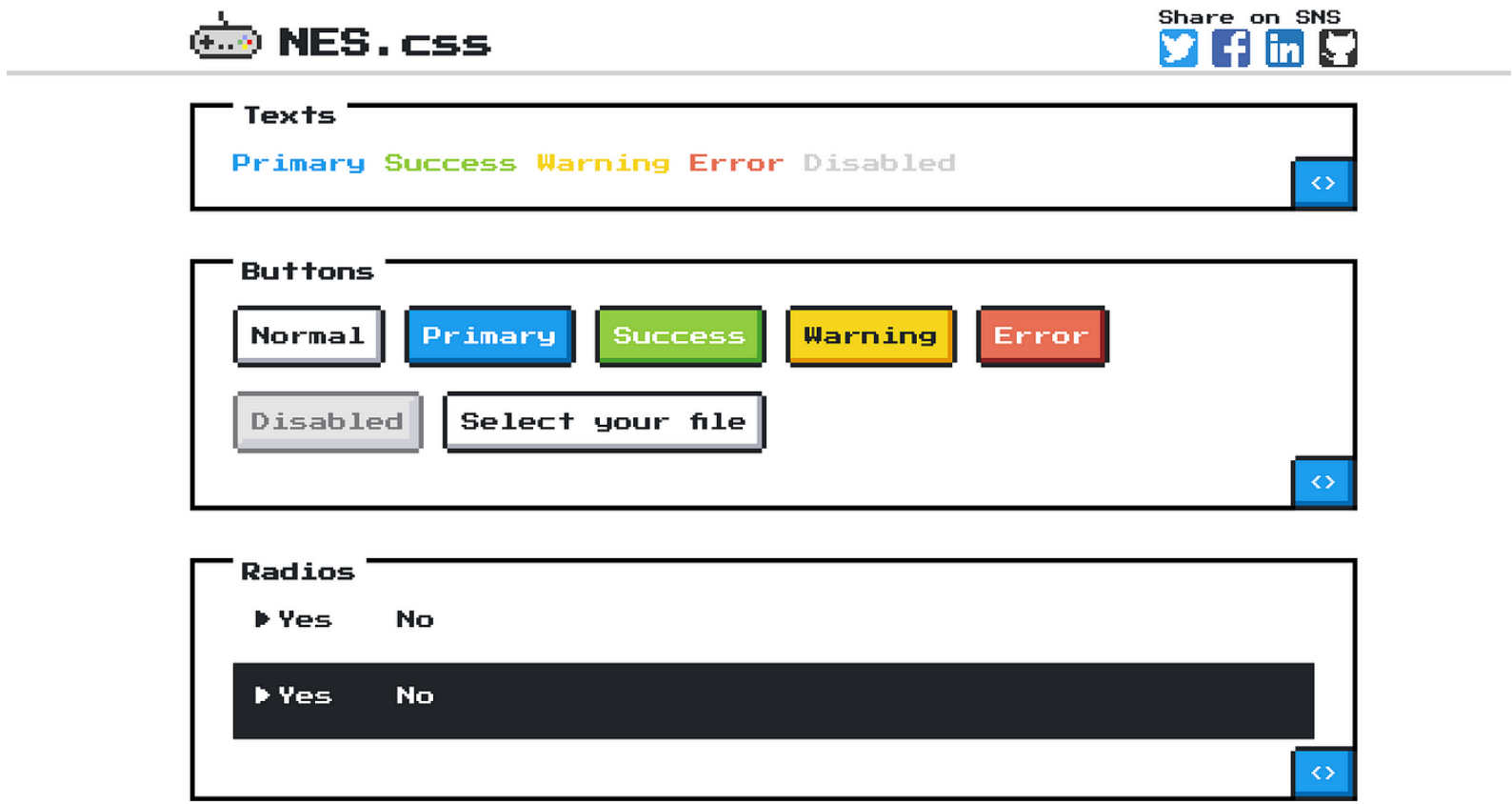


Hover.css

- Hover effects and transitions
- Documentation: https://ianlunn.github.io/Hover/

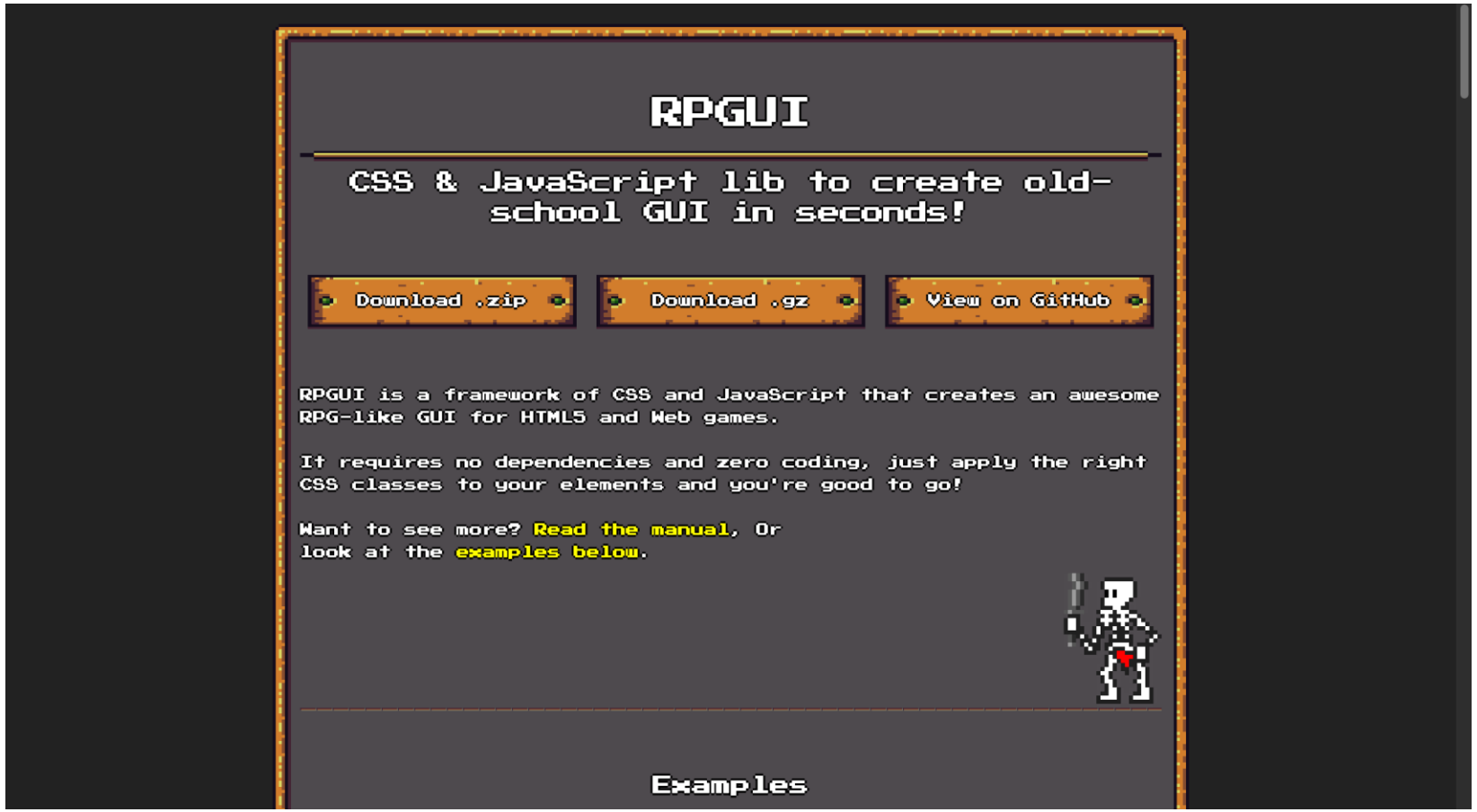
Specialized CSS Libraries

- NES.css - https://nostalgic-css.github.io/NES.css/



Specialized CSS Libraries

- RPGUI - https://ronenness.github.io/RPGUI/



Specialized CSS Libraries

- 98.css - https://jdan.github.io/98.css/

Specialized CSS Libraries

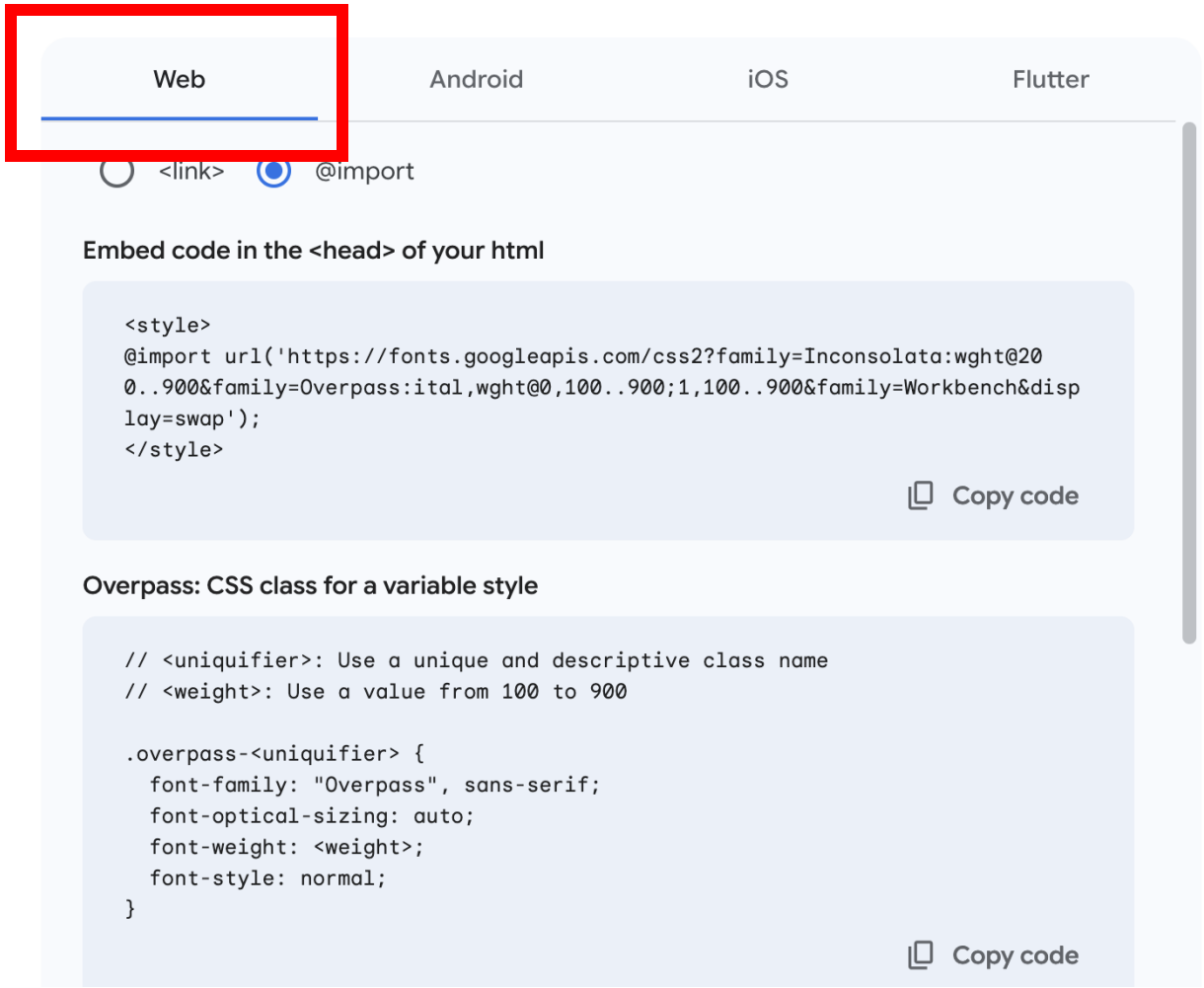
- XP.css - https://botoxparty.github.io/XP.css/

Using External Webfonts Fonts

- Collections
  - Google Fonts (free)
  - Adobe Fonts (paid)
  - Fontshare (free)

- Independent Font Foundries

Using External Webfonts Fonts

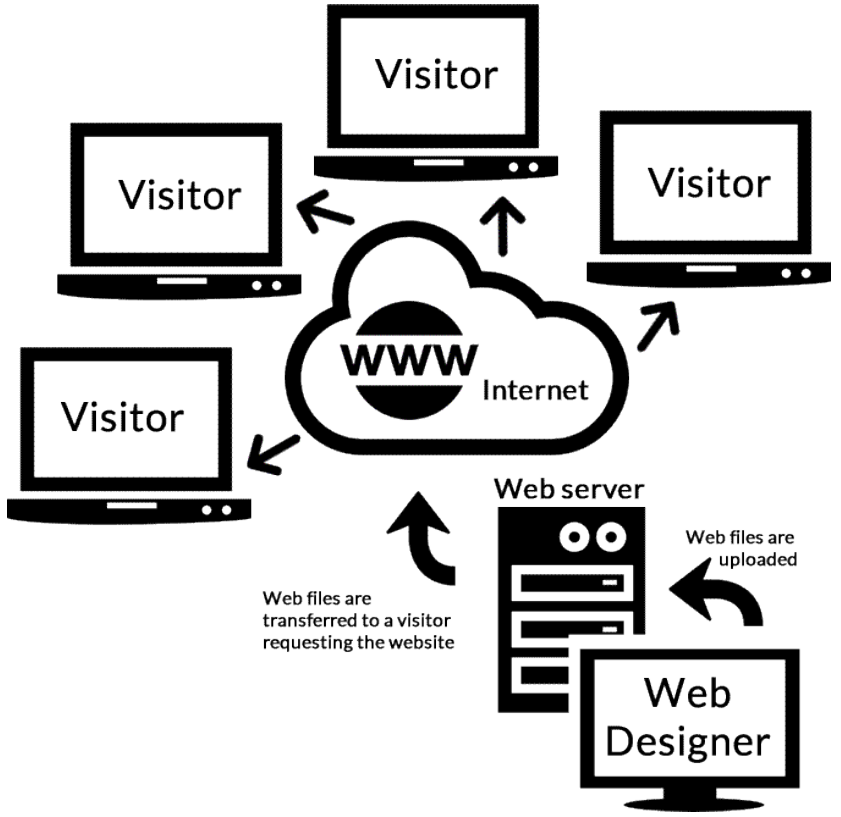


JavaScript & Document Object Model

How does a website work?

- What happens when I visit a website?

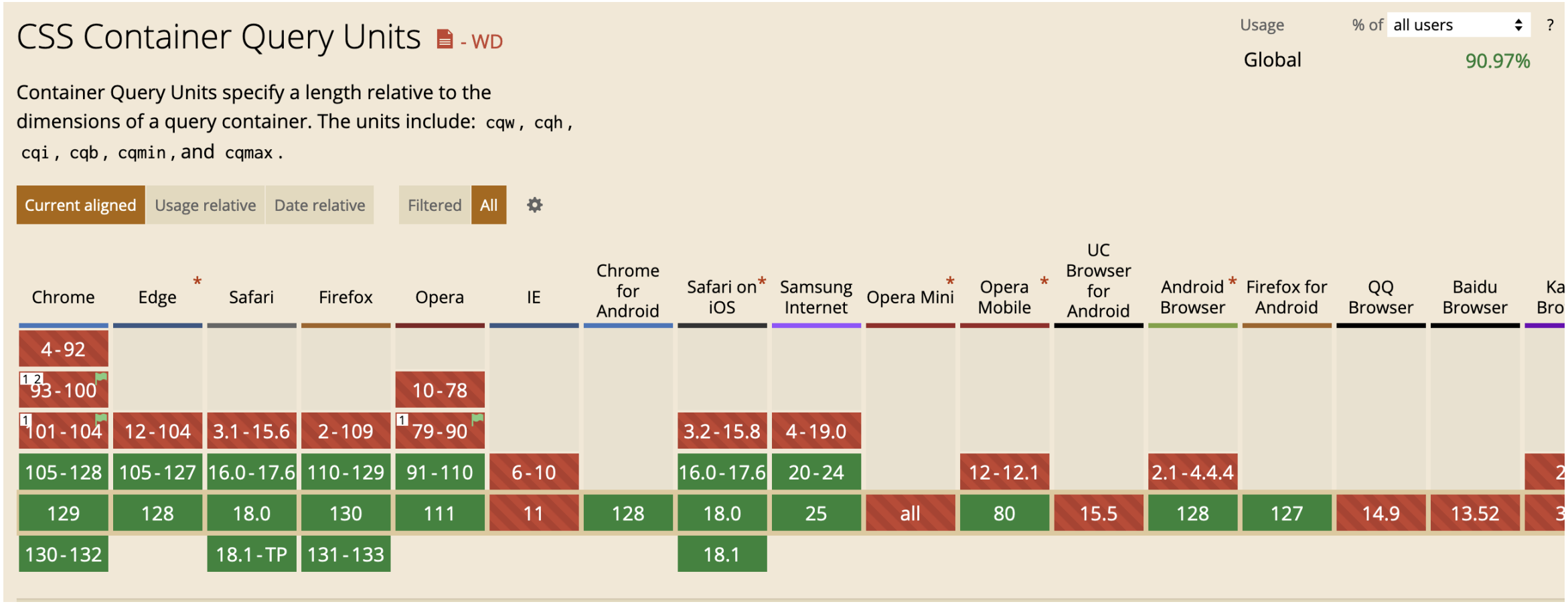
- What is ‘client’?
- What is ‘server’?



Browsers' Role

- Browsers are responsible to render our code as websites to users
- Different browsers use different browser 'engines'
- Engines are an implementation of standard conventions

Why should I care? Compatibility!



CSS Container Query Units - WD

Usage: % of all users — Global: 90.97%

Container Query Units specify a length relative to the dimensions of a query container. The units include: `cqw`, `cqh`, `cqi`, `cqb`, `cqmin`, and `cqmax`.

Current aligned | Usage relative | Date relative | Filtered | All

Chrome	Edge *	Safari	Firefox	Opera	IE	Chrome for Android	Safari on iOS *	Samsung Internet	Opera Mini *	Opera Mobile *	UC Browser for Android	Android Browser *	Firefox for Android	QQ Browser	Baidu Browser	Ka Bro
4-92																
1 2 93-100				10-78												
1 101-104	12-104	3.1-15.6	2-109	1 79-90			3.2-15.8	4-19.0								
105-128	105-127	16.0-17.6	110-129	91-110	6-10		16.0-17.6	20-24		12-12.1		2.1-4.4.4				2
129	128	18.0	130	111	11	128	18.0	25	all	80	15.5	128	127	14.9	13.52	3
130-132		18.1-TP	131-133				18.1									

View Transition example

Article 1 Article 2

Article 1 content

photo credit: Michael Kirsh

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View Tr

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Provides a m
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Current aligned | Usage relative | Date relative | Filtered

Open Bug 1909173 (dt-view-transition) Opened 2 months ago Updated 2 days ago

[META] Add support for CSS View Transitions level 1 (SPA)

Categories

Product: DevTools
Component: Inspector

Type: task
Priority: Not set Severity: --

Tracking

Status: NEW

People (Reporter: nchevobbe, Unassigned)

References (Blocks 1 open bug)

Details (Keywords: meta)

Bottom ↓ | Tags | Timeline

Nicolas Chevobbe [:nchevobbe] Reporter
Description • 2 months ago

CSS view transition for single page application is going to be implemented in the coming months. Let's have this bug to cover needed in DevTools to avoid issues / developer confusion

Chrome	Edge *	Safari	Firefox	Opera	IE	Chrome for Android	Safari on iOS *	Samsung Internet	Opera Mini *	Opera Mobile *	Browser for Android	Android Browser *	Firefox for Android	QQ Browser	Baidu Browser	Ka Bro
4-110	12-110			10-96				4-22								
111-128	111-127	3.1-17.6	2-129	97-110	6-10		3.2-17.6	23-24		12-12.1		2.1-4.4.4				2
129	128	18.0	130	111	11	128	18.0	25	all	80	15.5	128	127	14.9	13.52	3
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Browser Engines

- WebKit by Apple
  - Safari
- Gecko by Mozilla Foundation
  - Firefox
- Blink by Google
  - Google Chrome
  - Microsoft Edge
  - Arc
  - Brave
  - Opera

- Each browser engine is equipped with its own JavaScript engine
- JavaScript engines run along with the rendering engines via the Document Object Model to enable dynamic interactions on the web page

JavaScript Engines

- WebKit by Apple uses JavaScript Core
  - Safari
- Gecko by Mozilla Foundation uses Spider Monkey
  - Firefox
- Blink by Google uses V8
  - Google Chrome
  - Microsoft Edge
  - Arc
  - Brave
  - Opera

V8 engine also powers the NodeJS runtime

JavaScript Intro

A variable is a named spot in code that stores a value you can use or change.

Declaring a variable:

```
let x = 100; // number

let name = "cci"; // string

let isThursday = true // boolean
```

JavaScript Intro

let vs const

```
let x = 100;
```

```
x = 200;
```

```
const x = 100;
```

```
x = 200;
```

JavaScript Intro

Functions

```
function sayHello() {
  alert("Hello!");
}
```

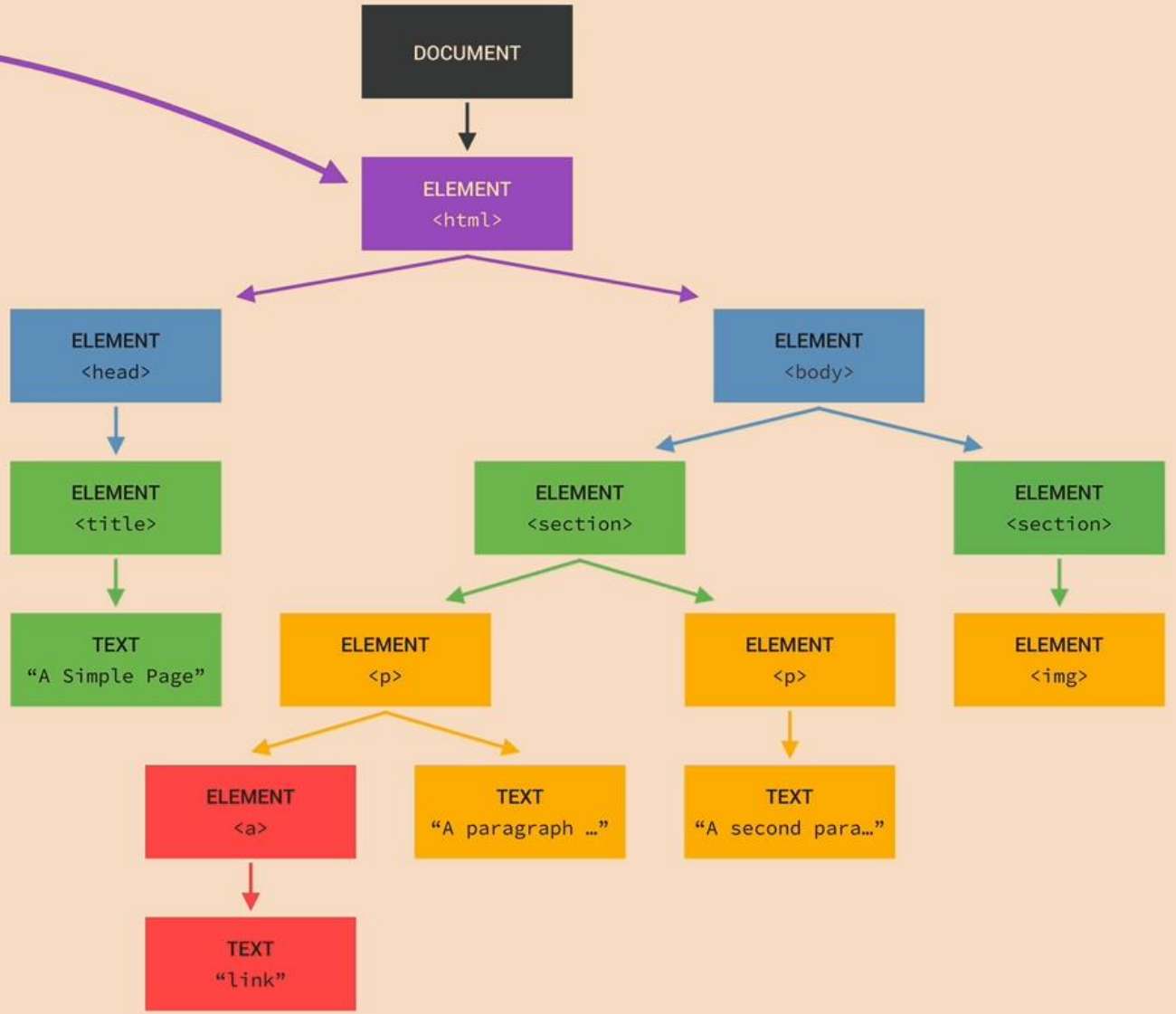
```
sayHello();
```

Running the function (function execution)

Document Object Model

- The **Document Object Model (DOM)** represents an HTML page as a structured tree of nodes.
- JavaScript uses the DOM to access and modify page elements, making web pages interactive.

```
<html>
  <head>
    <title>A Simple Page</title>
  </head>
  <body>
    <section>
      <p>A paragraph with a <a>link</a></p>
      <p>A second paragraph</p>
    </section>
    <section>
      <img src="dom.png" alt="The DOM" />
    </section>
  </body>
</html>
```



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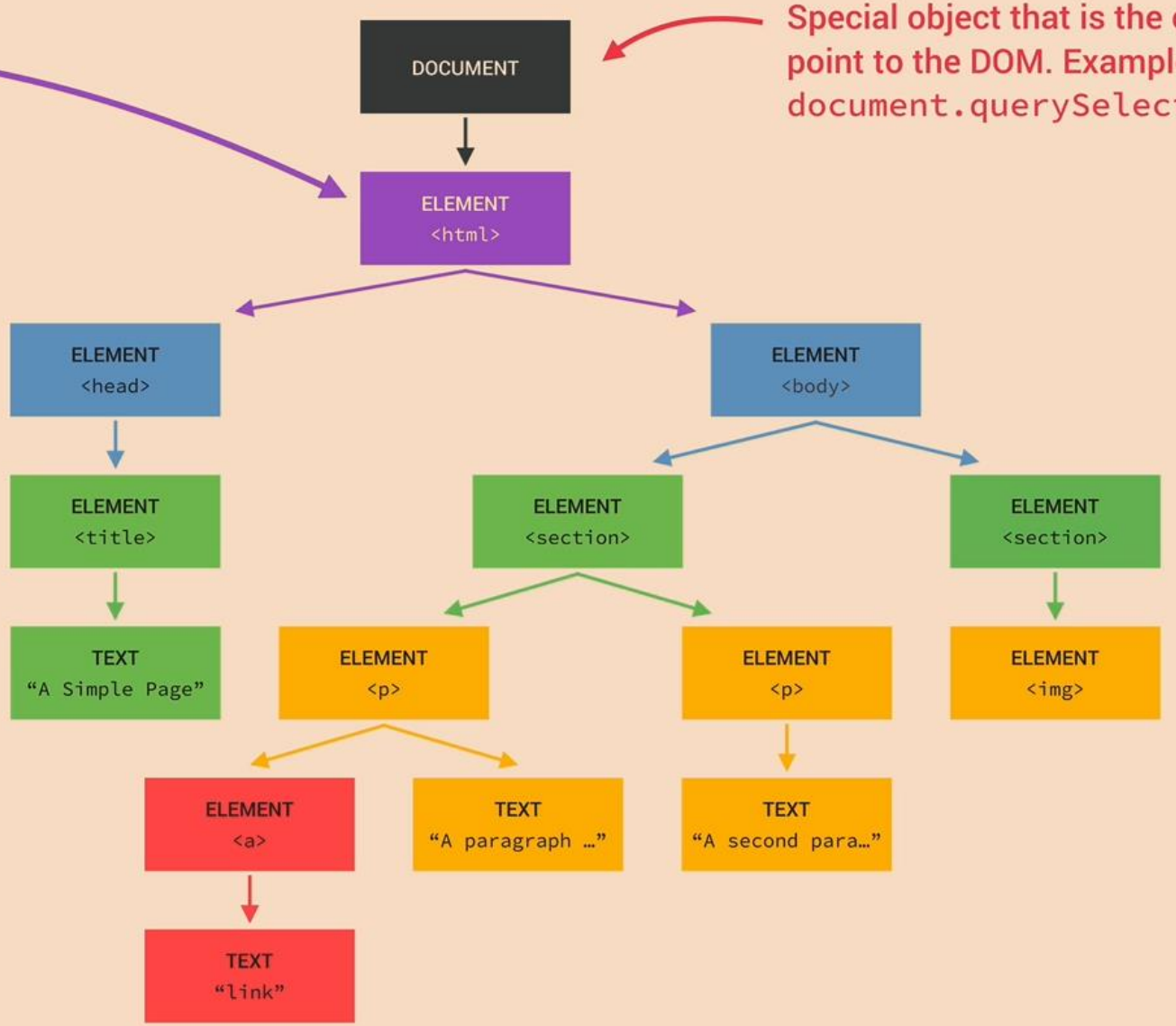
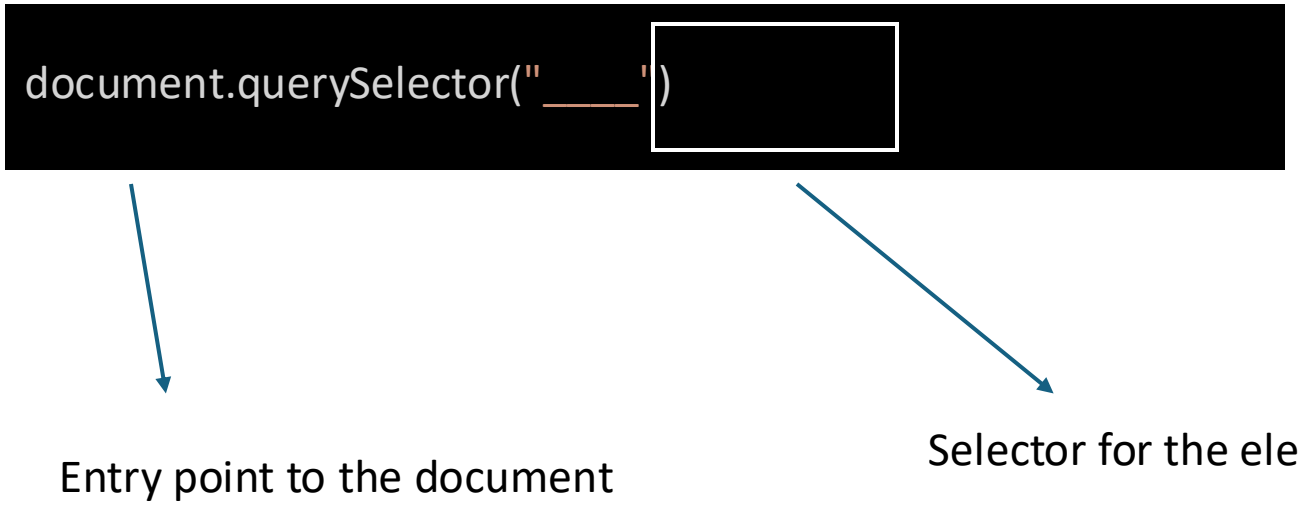


Manipulating Documents



Manipulating Documents

querySelector method takes CSS-like selectors to access an element

for ID

. for classes

Manipulating Documents

querySelector method takes CSS-like selectors to access an element

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HTML

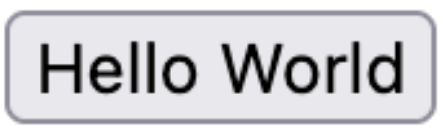
```
<button id="submit-btn">Clickclick</button>
```

JavaScript

```
document.querySelector("#submit-btn")
```

```
const myButton = document.querySelector("#submit-btn");

myButton.textContent = "Hello World";
```



Working with CSS Classes

```
myButton.classList.add('highlight')

myButton.classList.remove('highlight’)
```

Creating New Elements

```
const myNewButton = document.createElement("button")


myNewButton.textContent = "Hello again"


document.body.append(myNewButton)
```

Creating New Elements

```
const myNewButton = document.createElement("button")


myNewButton.textContent = "Hello again"


document.body.append(myNewButton)
```

Adds the element at the end of body

```
<div id="about-section"></div>
```

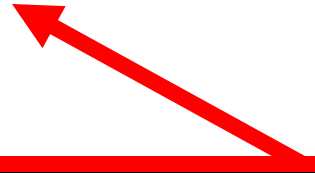
```
const sectionContainer = document.querySelector("#about-section")

const aboutHeading = document.createElement('h2')

aboutHeading.textContent = "About Me"

sectionContainer.append(aboutHeading)
```

```
<div id="about-section"></div>
```



```
const sectionContainer = document.querySelector("#about-section")

const aboutHeading = document.createElement('h2')

aboutHeading.textContent = "About Me"

sectionContainer.append(aboutHeading)
```

Adds the h2 tag at the end of

Walk-through