

Coding Boot Camp

Module 03





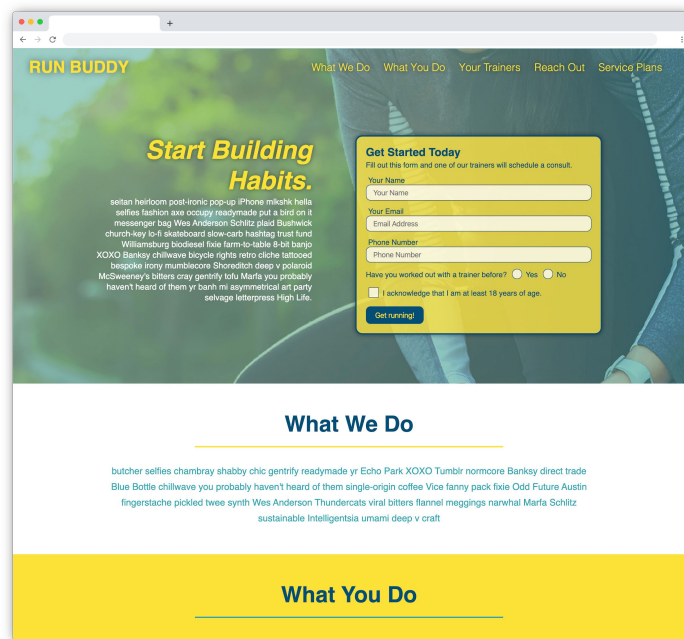
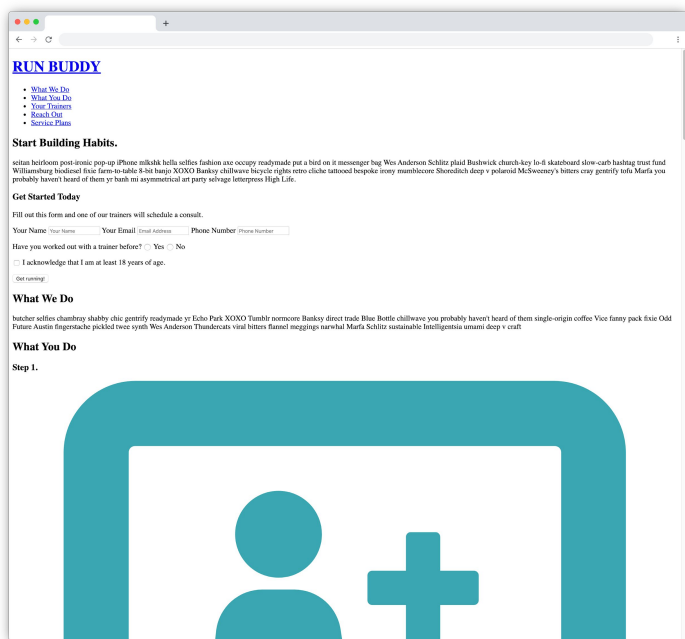
Administrative Stuff



What do we use HTML and CSS for?

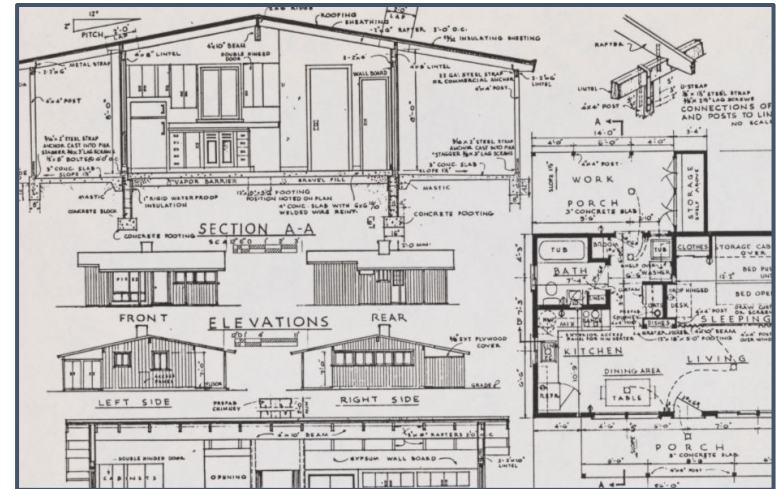
HTML & CSS: Languages of the Web

We use HTML to create and organize content on a page and CSS to apply styles, layout, and even animation to that content.



Web Technologies - Analogies

- HTML
 - A lot like a blueprint
 - Describes the “what”
 - Images
 - Header text
 - Paragraph text
 - Lists
 - Etc.
 - Interpreted by the web browser
 - Is a markup language
- What is HTML not?
 - Not a programming language
 - Generally, not the design of the page
 - Generally, doesn't provide interactive functionality



Web Technologies - Analogies

- CSS
 - Cascading styling sheets
 - Styling language
 - Can add color, fonts, etc.
 - Three forms
 - Inline CSS
 - Embedded CSS
 - Externally linked CSS
- What is CSS not?
 - Not a webpage by itself
 - Not a programming language
 -



Web Technologies - Analogies

- Javascript
 - A programming language
 - Adds functionality
 - Makes things work!
 - High-level language
- What is Javascript not?
 - To be continued...



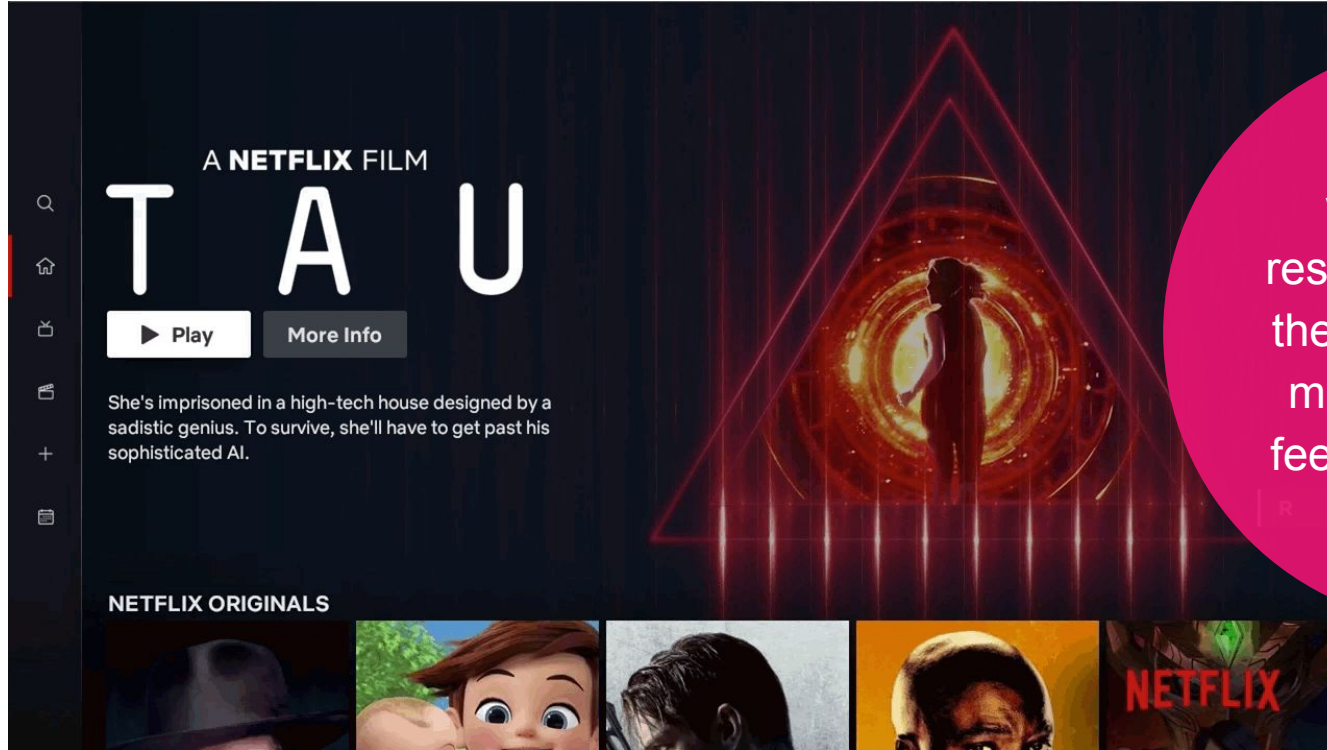
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What are some examples of how users interact with a webpage?

Interaction on Websites

We interact with websites in many ways on a daily basis.



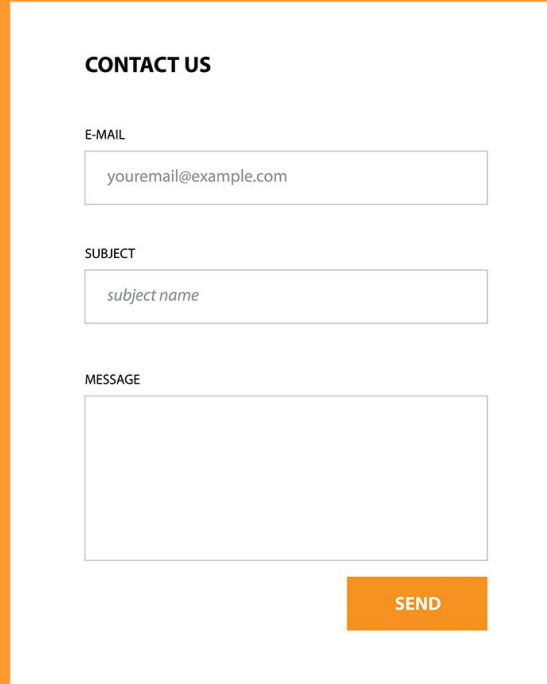
Typically the webpage will respond or react to these interactions, making the page feel more dynamic and alive.



Interaction Examples

Interaction Examples

Submitting an HTML form to comment on an article.



CONTACT US

E-MAIL

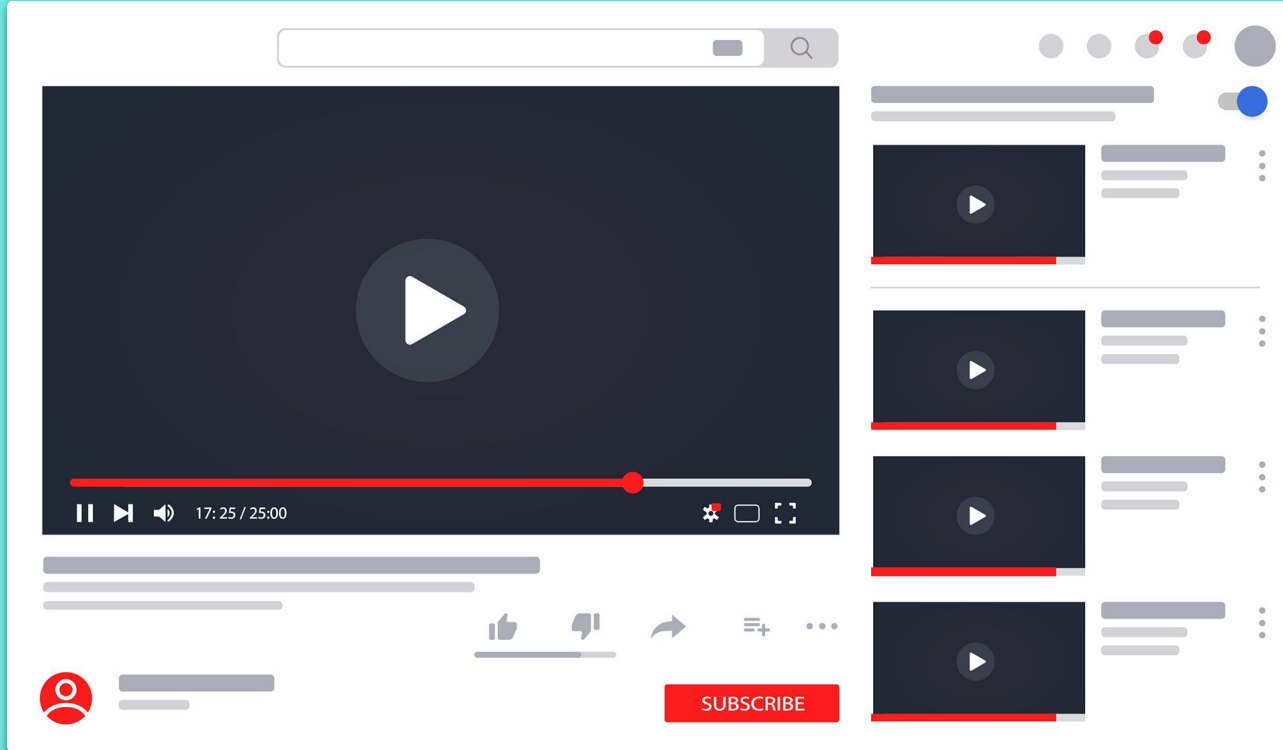
SUBJECT

MESSAGE

SEND

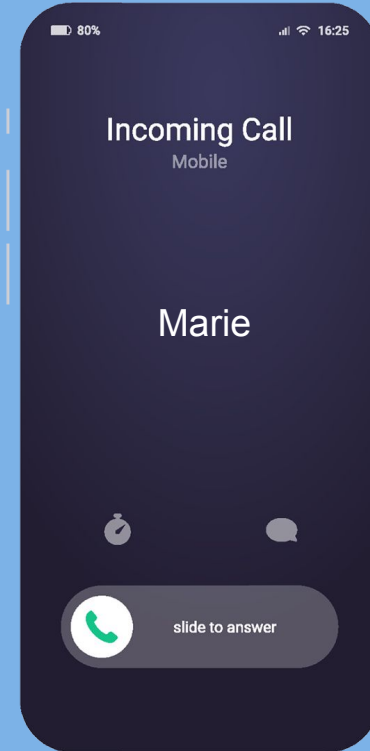
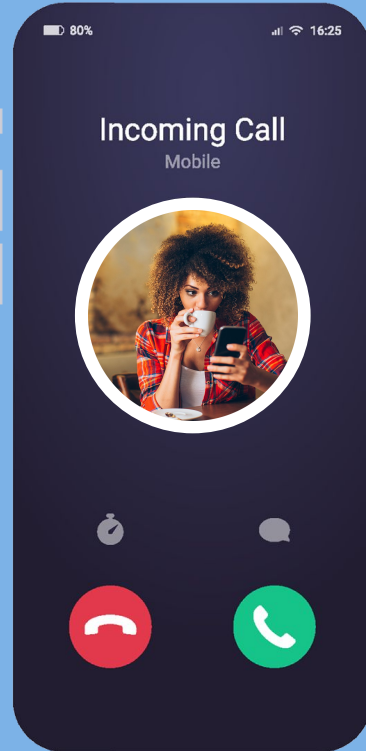
Interaction Examples

Playing audio or video at the press of a button on the page.



Interaction Examples

Using the device's camera or microphone to enable a conversation.



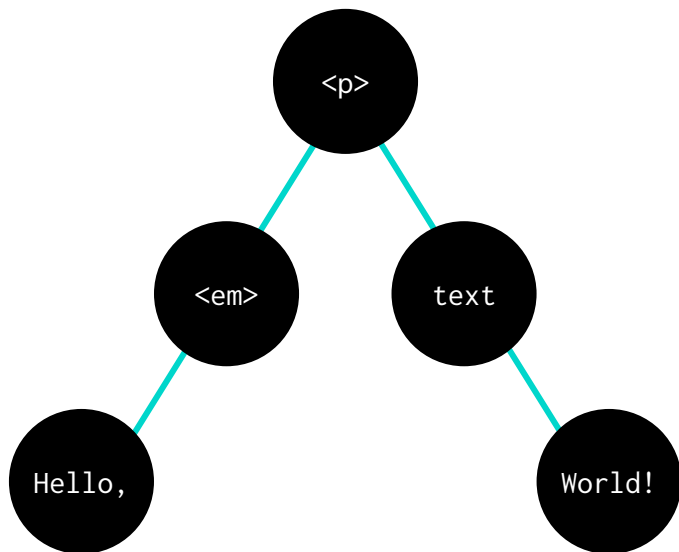


**Can we achieve these types
of interactions using only
HTML and CSS?**

HTML & CSS ≠ Functional

While HTML and CSS offer some great built-in features that give users a sense of interaction or functionality on a site, they cannot handle the complex tasks that occur in response to these interactions.

HTML (Structure)



CSS (Presentation)

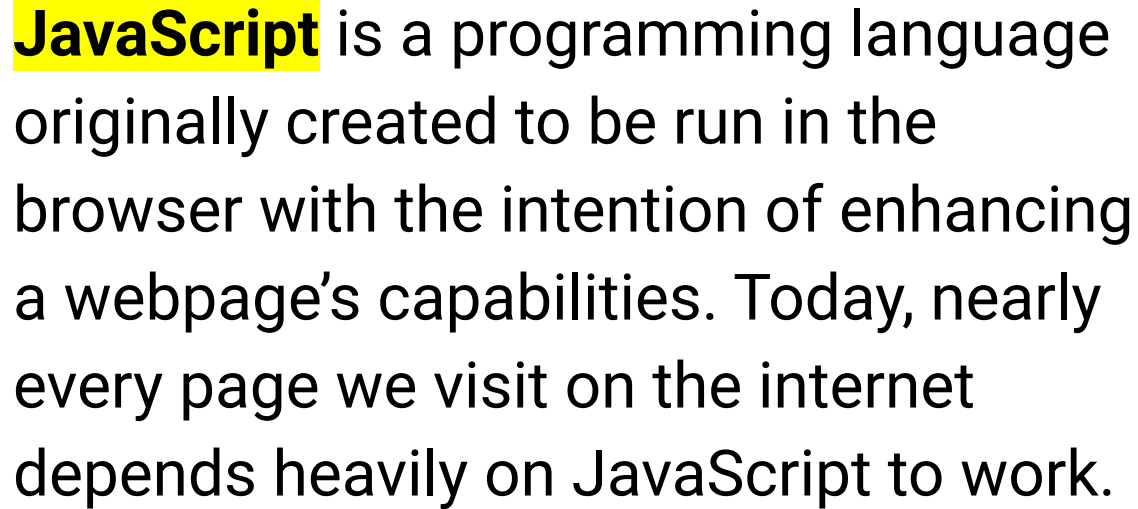
Hello, World!

Hello, World!

Hello, World!





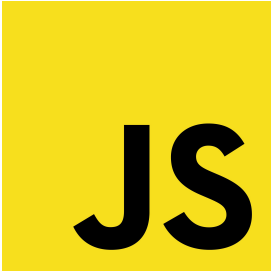
For that reason, web developers utilize a programming language specifically designed for these tasks.



JavaScript is a programming language originally created to be run in the browser with the intention of enhancing a webpage's capabilities. Today, nearly every page we visit on the internet depends heavily on JavaScript to work.

JavaScript

While HTML and CSS handle content and design, JavaScript handles the overall functionality of the application to make it feel more alive and dynamic.

HTML	CSS	JavaScript
Used to write content.	Used to format content.	Used to create dynamic web applications that take in user inputs, change what's displayed to users, animate elements, and much more.
		



In what ways do we use JavaScript?

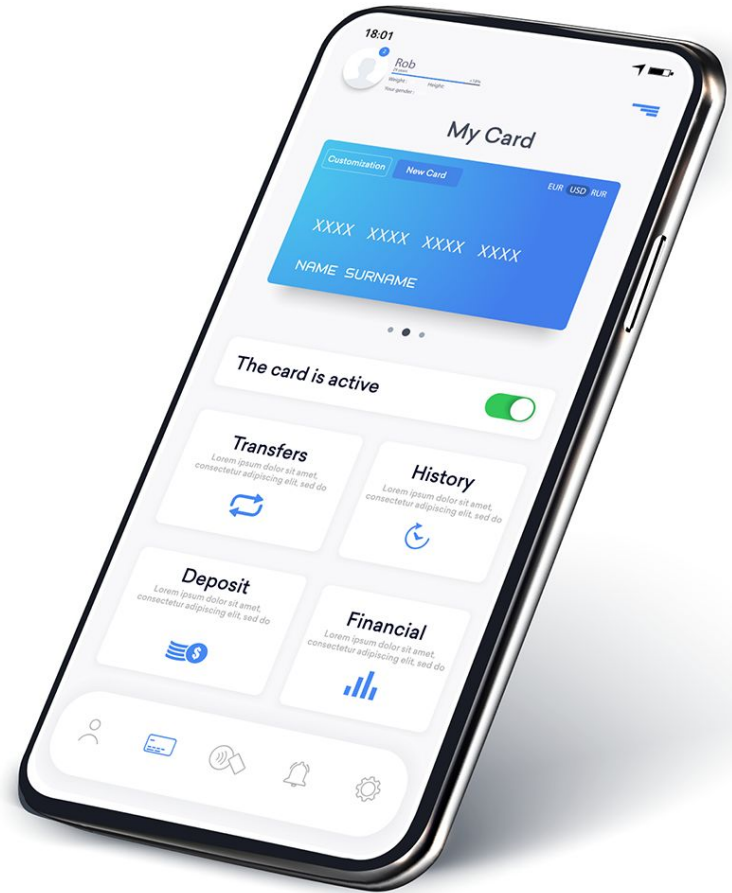


Front-end developers use JavaScript primarily to dynamically affect a webpage to enhance the user's experience. No other programming language can run in the browser, so JavaScript is a must-have skill for web developers.

JavaScript Examples

JavaScript Examples

Showing a user personal data only after they log into the application.



JavaScript Examples

Fetching weather data to display and update on the page.

The screenshot displays the Weather Underground website interface. At the top, there's a navigation bar with links for Sensor Network, Maps & Radar, Severe Weather, News & Blogs, Mobile Apps, and More. A search bar for locations is also present. Below the navigation bar, a row of popular cities is shown with their current weather and temperatures: San Francisco, CA (59°F), Manhattan, NY (55°F), Schiller Park, IL (71°F), Boston, MA (56°F), Houston, TX (77°F), and St James's, England, United Kingdom (62°F). A blue banner below this row states: "Webcam hosting service will be discontinued on October 21, 2021. Read more about our decision here."

The main content area features the weather for Upper Darby Township, PA. It includes a large weather icon (cloud with rain), the current temperature (55°F), and the "Feels like" temperature (53°F). Below this, there's a section for humidity (2%) and precipitation (0.00 in). A horizontal timeline shows the hourly forecast for October 18th and 19th, with temperatures ranging from 47°F to 60°F. A "Full Forecast" button is located at the bottom of this section.

On the right side, there's an "Ads by Google" section with a "Stop seeing this ad" button and a "Why this ad?" link.

JavaScript Examples

Informing users that they are missing information on a form.

Password strength: Too Short



Use at least 8 characters. Don't use a password from another site, or something too obvious like your pet's name. [Why?](#)

Choose your username

@gmail.com

[I prefer to use my current email address](#)

Create password

Confirm your password

Birthday

Month

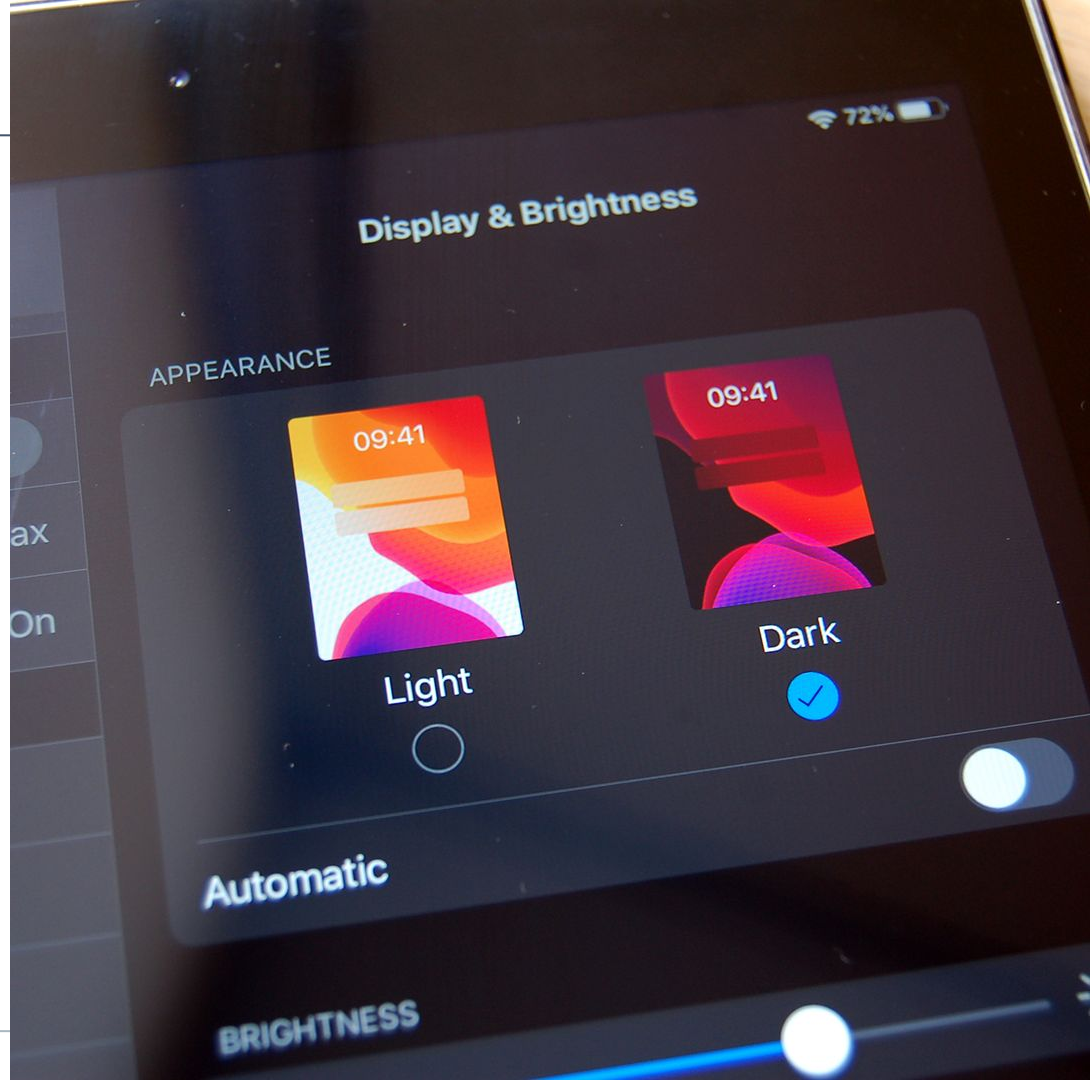


Day

Year

JavaScript Examples

Remembering a user's preference between light and dark mode themes.



Advanced JavaScript Examples

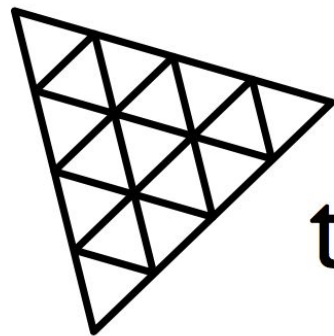
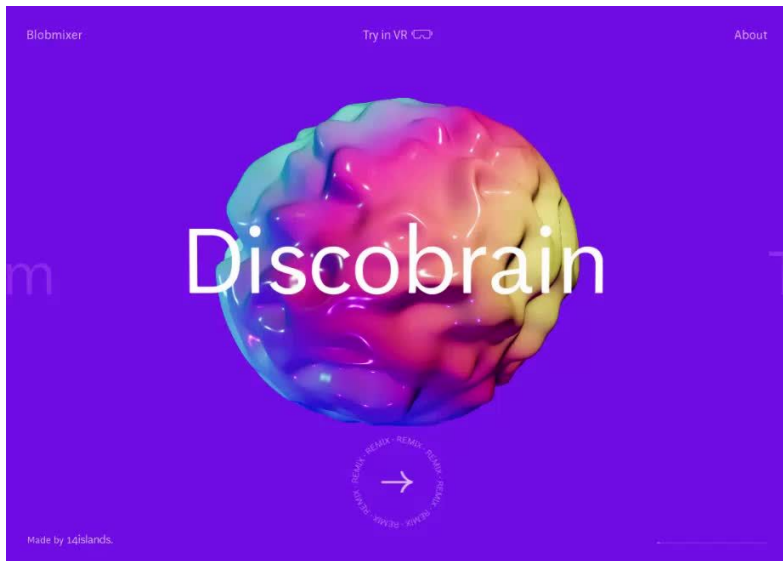
JavaScript Examples

Creating video games that run in the browser.



JavaScript Examples

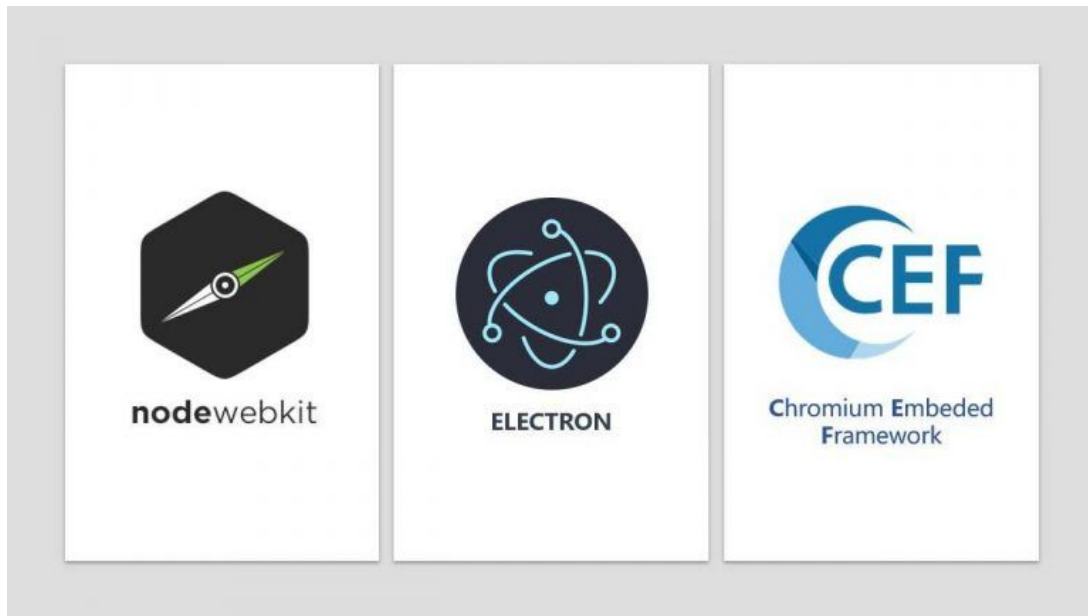
Websites with 3D backgrounds, graphics, etc.



three.js

JavaScript Examples

Desktop applications.





How can we learn to use JavaScript?

Anatomy of a JavaScript Variable Assignment

Unlike some other programming languages, JavaScript doesn't force developers to write code in a specific way. As a result, JavaScript might seem a bit complicated at first, but it can make development work feel incredibly fun and creative as you get to use it more and more.

Var keyword	Variable name	Assignment operator	Value	Termination symbol
<code>var</code>	character	<code>=</code>	<code>"Snow White"</code>	<code>;</code>

How to Learn JavaScript

Try some of the following techniques to learn JavaScript:



Read the docs and practice with the provided examples.



Reverse-engineer finished code to see how it was created.



Build something from scratch.



Debug a broken app using Chrome DevTools.



And most importantly, ask questions!



Instructor Demonstration

Mini-Project