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JavaScript Intro

WEB 1.0

Agenda

- Learning Outcomes
- What is JS?
- Using JS
- Activity: Animate on Scroll JS
- **BREAK**
- Activity: Mood Shop Tutorial
- Lab Time

Learning Outcomes

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By the end of today, you should be able to...

1. Identify uses of JavaScript in a web application.
2. Add JS to an existing site to enhance its behavior on scroll.

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Code Review

Code Review (15 minutes)

Break out into pairs and choose who will be the **reviewer** and **reviewee** for your finished Single Page Site assignment.

- **Reviewee**: Share your screen and explain what your code does from top to bottom.
- **Reviewer**: Listen, ask questions, and make suggestions for improvement.

After 7 minutes, switch roles.

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What is JavaScript?

What is JS?

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JS is the most ubiquitous programming language in the world, and is the language of the Web.

> “Any application that can be written in JavaScript, will eventually be written in JavaScript.”

- **Jeff Atwood** (co-founder of Stackoverflow)

https://medium.com/@jayaprabhakar/rethinking-atwoods-law-64a894b54aa4

What is JS?

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Where is JS Used and what can you build with it?

- **Web pages** - Web sites and web applications that run in a web browser
- **Web Servers** - The applications that serve the web sites you visit
- **Mobile Applications** - Applications that run on your mobile devices
- **Embedded Applications** - Smart hardware devices like internet enabled kitchen and household appliances, wearable technologies, and more.

What is JS?

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JavaScript ≠ Java. These are two different languages that just happen to share the same first four letters.

Also called **ECMAScript**. ECMAScript is a specification meant to ensure that web browsers can all be programmed the same way.

JavaScript conforms to the ECMAScript ES6 standard.

What is JS?

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Alongside HTML and CSS JavaScript is one of the three core technologies.

JavaScript is a **scripting language**. The code is run at the moment it is loaded. It doesn't need to be compiled (processed) in advance before being run.

JavaScript is also a full-featured **Object Oriented Language.** This is similar to Python, Swift, and other languages. While the syntax maybe different, the concepts are same.

What is JS?

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JS is one of the three **separation of concerns:**

- We define the **structure** of documents with HTML
- We define the **appearance** with CSS
- We define the business **logic** with JS

What is JS?

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We can use JavaScript for:

- Handling user **interaction**
- User Interface **animation**
- Process **data** client side
- Make **Network** requests
- Dynamically generated **UI**

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Using JS

Using JS

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JavaScript can be used to almost anything in the browser.

JavaScript is often used in conjunction with CSS styles. In this introduction you'll use a library named **Animate On Scroll**, or AOS.js. It animates elements on the screen as they scroll into view.

Take a look at this page to get an idea of what AOS.js does:

https://michalsnik.github.io/aos/

Using JS

AOS has two dependencies:

- **JavaScript File** - contains the code
- **CSS File** - contains css styles the code relies

We will import these libraries from a CDN (Content Delivery Network) where the files are stored on a server.

Using JS

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Step 1: Link to the stylesheet at the top of your page in the head of the document.

```
<link href="https://unpkg.com/aos@2.3.1/dist/aos.css"
rel="stylesheet">
```

Using JS

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JavaScript is added with the script tag. It's best practice to place your script at the bottom of the body tag. This allows the document to load first before the JavaScript code is run.

```
<script
src="https://unpkg.com/aos@2.3.1/dist/aos.js">
</script>
```

Using JS

With the dependencies linked you can implement Animate on Scroll.

Add a new script tag below the previous script tag at the bottom of the body.

```
<script>
    // Initialize Animate On Scroll
    AOS.init();
</script>
```

Using JS

Take a look another look at the AOS.js home page:

https://michalsnik.github.io/aos/

AOS will animate elements when you assign them special attributes:

- data-aos="fade-up"
- data-aos="fade-down"

```
<div data-aos="fade-up">
</div>
```

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Try it out

Using JS

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Implement AOS in your single page site.

- Add the CSS in the head of your page
- Add the script to the bottom
- Add a second script tag and the AOS initialization code

Now identify some elements you'd like to animate and the data-aos attribute.

You'll need to reference the AOS docs to see what values can be used.

https://github.com/michalsnik/aos#predefined-options

Using JS

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Stretch Goals! If you implemented AOS.js in your page with the basic animations move into some of the other available options:

- https://github.com/michalsnik/aos#2-set-animation-using-data-aos-attribute
- https://github.com/michalsnik/aos#animations

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Break - 10 min

“Take a 10 minute break and wrap a tag around everything you see.”

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Mood Shop Tutorial

Mood Shop Tutorial (45 minutes)

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With a partner, complete the Mood Shop Tutorial. It has 12 parts so see how many you can get through with your partner. If you don't finish today, you'll finish it as homework.

Remember to practice pair programming!

At the end of class, be sure to share your code with your partner via GitHub.

Mood Shop Tutorial - Put a "1" before your name

Single Page Site - Put a "2" before your name

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Lab Time

Homework

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This week's assignments:

- Single Page Site - Due today
- Mood Shop Tutorial - Due Thursday

Lab Rules

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Stay in the main Zoom room if you'd like to stay for more Q&A, homework help, etc.

Go to your individual breakout room if you'd prefer to work with a partner or have quiet time!