**CSCI 331 Project - Hyperscript**

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**Introduction**

Our group decided to discuss about Hyperscript. Hyperscript is a scripting language that does the front end of web development. It utilizes interactive HTML to handle events in a user-friendly way. You can also use it for asynchronous code, to enhance your existing code, or to even debug. Because we can directly manipulate code embedded directly on elements, we can add events directly to said HTML elements instead of using JavaScript or another file.

**Features of Hyperscript:**

**1. Filter**

This filter feature lets you look or search for things you want from a list. It uses "show" and "when" to filter the things we want, which only takes up 2 lines of code. After the code is written, we can start by typing one letter in the search bar. This will show the only the things that match in the list.

Example code:

<input \_="on keyup show <li/> in #color-list

when it's innerHTML contains my value">

**2. Intersection**

The intersection feature brings animation to your design. When at least half of the image comes into view, it will become visible. This can be done with the intersecting property and the threshold amount. For example, if it has a threshold of 0.5, its opacity will transition to 1 (visible) when 50% of it is in view. If less than 50% of the image is in view, it does not meet the 0.5 threshold, and its opacity will be 0 (invisible).

Example code:

<img \_="on intersection(intersecting) having threshold 0.5

if intersecting transition opacity to 1

else transition opacity to 0 " src="styles/fox.jpg" alt="fox">

**3. "Go" Command**

This allows you to navigate the browser to a new location like locally or to new URLs, depending on how it is used. The "Go" command can be used in many settings that help you move things.

Example code:

<button \_="on click

go to the top of the body smoothly

wait 2s

go to the bottom of me smoothly">

Take A Trip

</button>

**4. Increment Button**

The code for this increment button allows us to add if statements and increment variables. In the example, we are incrementing x. Once x is greater than 10, we are setting it back to 0. In either case, we will display x in the output below with "put".

Example code:

<button \_="on click increment :x

if :x > 10

set :x to 0

put :x into the next <output/>

else

put :x into the next <output/>

end">

Click Me

</button>

**5. Countdown and Waiting**

This allows you to add time to events and control what happens when. In this simple countdown demo I have made, it utilizes waiting as well as functions such as repeat, hide, and show.

Example code:

<button \_="on click put 'Started...' into the next <output/>

hide me

repeat for x in [3, 2, 1]

put x into the next <output/>

wait 1s

end

put '' into the next <output/>

show me

">

Start

</button>

**6. Color Changing**

For the first example, we can change the color of a button on click, without the use of an event handler. As long as we have the id ".red" defined in CSS, we can toggle it on and off.

Example Code:

<button script="on click toggle .red on me">

Click Me

</button>

We can also change the color of the entire div. All we're doing here is adding a few lines of Hyperscript to the div that all the text is in, and it changes the background color of everything inside the div. Also note how we can replace "script" with "\_".

Example code:

<div \_="on pointerdown

repeat until event pointerup

set rand to Math.random() \* 360

transition

\*background-color

to `hsl($rand 100% 90%)`

over 50ms

end">

**URL Link to school server:**

Felicia Jayasaputra: <https://csci331.cs.montana.edu/~b81p263/project/hsdemo.html>

Mico Monks: <https://csci331.cs.montana.edu/~t37k234/CSCI331Final/hsdemo.html>

**Link to Repo(s):**

Felicia Jayasaputra: <https://github.com/feliciajayasaputra/csci331-hyperscript.git>

Mico Monks: <https://github.com/maicomarx/CSCI331FinalProject.git>

**Link to Group Presentation Slideshow (in our GitHub repo):**

Felicia Jayasaputra: <https://github.com/feliciajayasaputra/csci331-hyperscript.git>

Mico Monks: <https://github.com/maicomarx/CSCI331FinalProject.git>

**Creative Objective Section**

The goal of our project is to get a better understanding of how hyperscript works and give people some knowledge about hyperscript. This includes the pro and cons it has as a scripting language, the features it has and how to write them. We also did a comparison of hyperscript and other scripting language and how hyperscript can make some tasks easier. Moreover, we did a code demo and get to learn how to use and write hyperscript with implementing some cool feature that hyperscript offer. The mission for us is to get adequate knowledge of how hyperscript works and give people a good understanding about hyperscript. We completed this mission by presenting the introduction about hyperscript, teaching the class about the interesting features they offer and showing them the demo of our code.

**Tech Summary Section**

Hyperscript works with the DOM itself to manipulate code within each element directly. It requires no JavaScript and handles events within the HTML. More in-depth feature functionality is described above, within our "features" section. Example code is also provided. The only thing needed to be added to existing code to make Hyperscript work was: <script src="[https://unpkg.com/hyperscript.org@0.9.12"></script>](https://unpkg.com/hyperscript.org@0.9.12%22%3E%3C/script%3E).

**Individual Member Notes**

Felicia Jayasaputra - In this project, we were both introduced to hyperscript together. After having a good introduction to what hyperscript is, I implemented three of the features of hyperscript into our presentation which were the filter, the increment and the "Go" features. I created the slideshow for those three features and also the code demo for each of the features. In the presentation, we switched off talking about each of the features that we each learned about and presented each of our demonstration code that we made. For the documentation, we each came up with our own ideas and combined them together, so we wrote this documentation together.

Mico Monks – For this project, I had looked up the original documentation for hyperscript to find what features would be good to implement in our project. Both Felicia and I chose the features that we thought were interesting or important, and implemented them into our project. The features I learned about and chose were the increment button (to compare to our Next.js assignment), the countdown button (to showcase waiting in hyperscript), and the color changing events (for fun). I then put all of the features on their own html webpages, as well as Felicia’s features, and linked them together with anchor tags. They are also all tied to a home page (which is the index.html in this case) that contains links to all of the feature pages. I added a few minor CSS changes to format the webpages, as well as some descriptions on each page so anyone visiting can follow along with the presentation (or learn about it themselves). Both Felicia and I had split up the work for this documentation based on the features that we chose.

**Conclusion**

In conclusion, Hyperscript is a very useful tool for web development that can be used in tandem with other resources like HTMX or Django. We learned that by using Hyperscript, we can shorten code to be much more efficient in certain scenarios than if we just used JavaScript. What works with Hyperscript is enhancing existing code for efficiency and making things easier to accomplish in the DOM itself. What doesn't work with Hyperscript is having it do everything for you. As I mentioned above, Hyperscript is best used in tandem with other resources, so I would recommend using it in that manner. If we could do anything differently, we would have probably used another resource such as HTMX to create a fully functional experience in web development.

**References**

We only used the documentation of hyperscript as the reference:

<https://hyperscript.org/>

APA: *///\_hyperscript*. (n.d.). https://hyperscript.org/