CS 6630 - 001

Awwwards.com Investigator Tool:

Visualizing Submission Data to find Web Trends

https://github.com/brendanle65/dataviscourse-awwwards-viz

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Initial Project Proposal

Website design and development is a popular topic within computer science. But what makes a website good? Is it the way it looks, the information it conveys, or perhaps its ease of use. This information has not been consolidated in a meaningful way—which makes answering this question difficult. How should someone make a good website? This project hopes to tackle this challenge and enhance the decision making processes of website developers through a deeper understanding of popular design trends.

Finding quality websites to process is not easy. How do we know which websites are well designed? Thankfully, the Awwwards organization consistently showcases well designed websites that have been vetted by a panel of qualified jurors. The panel analyzes every aspect of the websites they review and scores them accordingly. As we found this to be the most efficient way to collect data of well designed websites, the project will be using data scraped from their archives.

We believe that it would be interesting to be able to visualize the relationships between a website's characteristics and the scores they receive. Our objective as a project is to showcase the trends regarding different website designs, while also displaying the technical components that successful websites often utilize. We are aiming to allow the project's users to dive deeper into the work that goes into website design and understand

what makes a website stand out to critics.The visualizations will allow various filters that display a trend in website design via different categories. As a team, our objectives are to create meaningful and significant visualizations that effectively display the trends of successful websites. By completing this project, we'll prove that we have learned how to create purposeful visualizations for an important topic.

As previously mentioned, the Awwwards archives contains relevant information to the project. This data will be harvested via a custom made data scraper, fetching relevant data about websites, such as country of origin, back-end libraries, type of website, date of submission, color metadata, and submission information. The scraper and data source can be found in Appendix I.

Further, because the data is being collected from a single source via a custom scraping tool, the data fetched is already tailor made and fairly clean. This results in minimal data processing, aside from edge cases such as duplicate authors who submit multiple websites. We find this approach ideal as it reduces the overall project complexity. As the archives contain the information for several thousand websites, we are inferring that scraping approximately 10,000 websites should suffice to show relevant data trends. We do not anticipate large variance in data range, however, should this be an issue we will likely trim any edge cases' data that are not beneficial to the visualization. This trimming logic will be implemented via the project code, and will not be done via the data scraper.

Creatively developing meaningful and effective visualizations that encompass multivariable datasets is an interesting challenge. In which ways should data be displayed to convey its meaning? The group has developed several prototypes shown in the following sections of this proposal. In general, they consist of several dynamic visualizations that are

supported by useful filters, such as the ability to sort via country of origin, and relevant characteristics such as frontend libraries used. This is implemented with a map, and a line chart. The map is filterable and searchable. The accompanying line chart shows filtered trends of websites over a span of time. This chart is hoverable and displays the metainformation regarding websites that fall into the selected area. The data can be accessed by the visualization to see examples of websites that implemented the selected filters. The final sketch has an additional line chart which accompanies the first line chart—the first chart displays the aggregate data of various tags, while the second line chart displays specific country-level data of a given tag. The given tag is selected by hovering over the area in the first line chart. The map was chosen because it is the most efficient way to filter by countries as it relies on spatial cognition. Further, the map also implements a search engine as it is occasionally easier to select a country by its name rather than locating it on the map. The map will also group filters into categories for easier search. Line charts are used to represent the data because they express trends over time adequately. To reduce the amount of data on screen, hovering is used as it is intuitive and visually decluttering.

While some of the project's visualizations rely on aspirational features, this project would be a failure should the group fail to implement the basic map and line visualization, as well as the ability to filter data based on their tag. We consider the search engine feature of the map visualization to be a stretch goal, and therefore optional. Should the group fail to implement this feature, the visualizations will still be meaningful, albeit less user friendly.

The expected weekly project schedule is shown in Fig 1., individual responsibilities will be recorded in this process book as the project progresses. The group communicates over

a shared private online server, and meets weekly to discuss progress regarding the project.

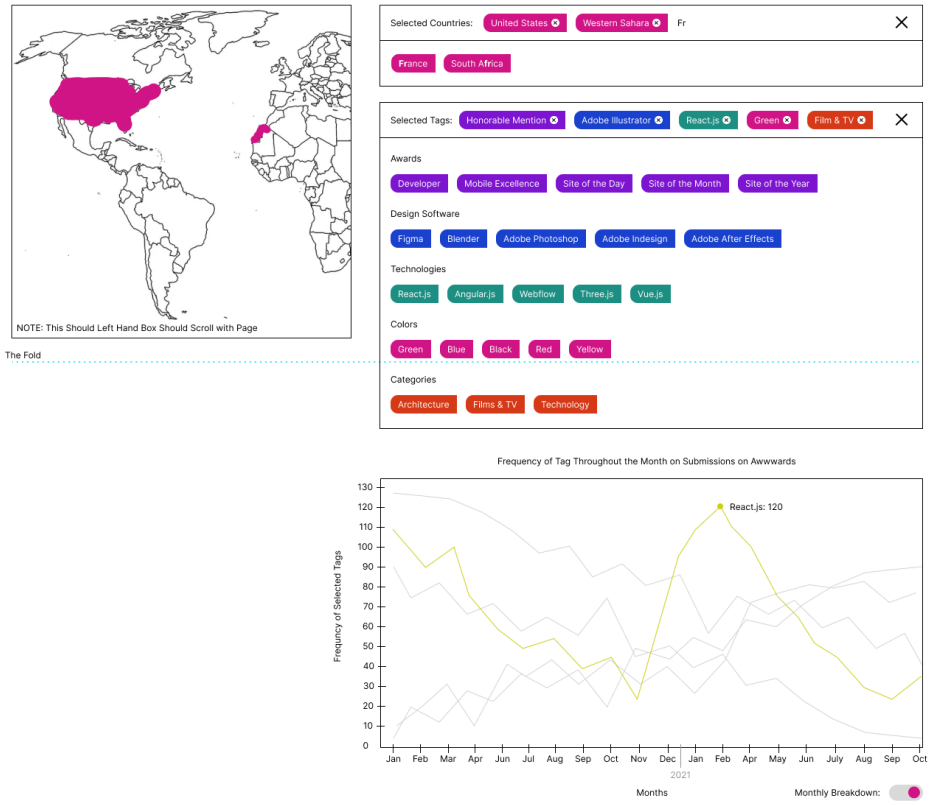
The group expects to use a scrum board to track progression of the project.

Member Names	**Brendan Le**	**Gabriel Jarrard**	**James Scholz**
Week 10	Backbone/Structure	Backbone/Structure	Backbone/Structure
Week 11	Tag Filter	Tag Filter	Tag Filter
Week 12	Geographical Line Chart/Map	Geographical Line Chart/Map	Geographical Line Chart/Map
Week 13	Tag Line Chart	Tag Line Chart	Tag Line Chart
Week 14	Search Engine	Search Engine	Search Engine
Week 15	Testing	Testing	Testing

Fig 1. Weekly Project Schedule

Sketches

Sketch 1—


NOTE: This Should Left Hand Box Should Scroll with Page
The Fold
Selected Countries:
United States
Western Sahara
Fr
France
South Africa
Selected Tags:
Honorable Mention
Adobe Illustrator
React.js
Green
Film & TV
Awards
Developer
Mobile Excellence
Site of the Day
Site of the Month
Site of the Year
Design Software
Figma
Blender
Adobe Photoshop
Adobe Indesign
Adobe After Effects
Technologies
React.js
Angular.js
Webflow
Three.js
Vue.js
Colors
Green
Blue
Black
Red
Yellow
Categories
Architecture
Films & TV
Technology
Frequency of Tag Throughout the Month on Submissions on Awwwards
Frequency of Selected Tags
React.js: 120
Jan Feb Mar Apr Jun Jul Aug Sep Oct Nov Dec Jan Feb Apr May Jun July Aug Sep Oct
2021
Months
Monthly Breakdown:

Sketch 2—

Selected Countries: United States Western Sahara Fr

France South Africa

Selected Tags: Honorable Mention Adobe Illustrator React.js Green Film & TV

Awards

Honorable Mention Developer Mobile Excellence Site of the Day Site of the Month

Site of the Year

Design Software

Figma Blender Adobe Photoshop Adobe Indesign Adobe After Effects

Technologies

React.js Angular.js Webflow Three.js Vue.js

Colors

Green Blue Black Red Yellow

Categories

Architecture Films & TV Technology

The Fold

Site of the Day - October 20th

Age of Union - Locomotive

Awards: Developer, Site of the Day

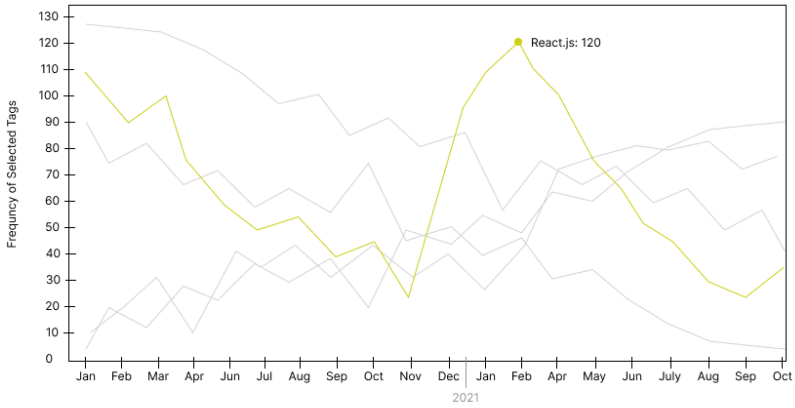
Categories: Film & TV, Architecture

Design Software: Figma, Adobe Illustrator

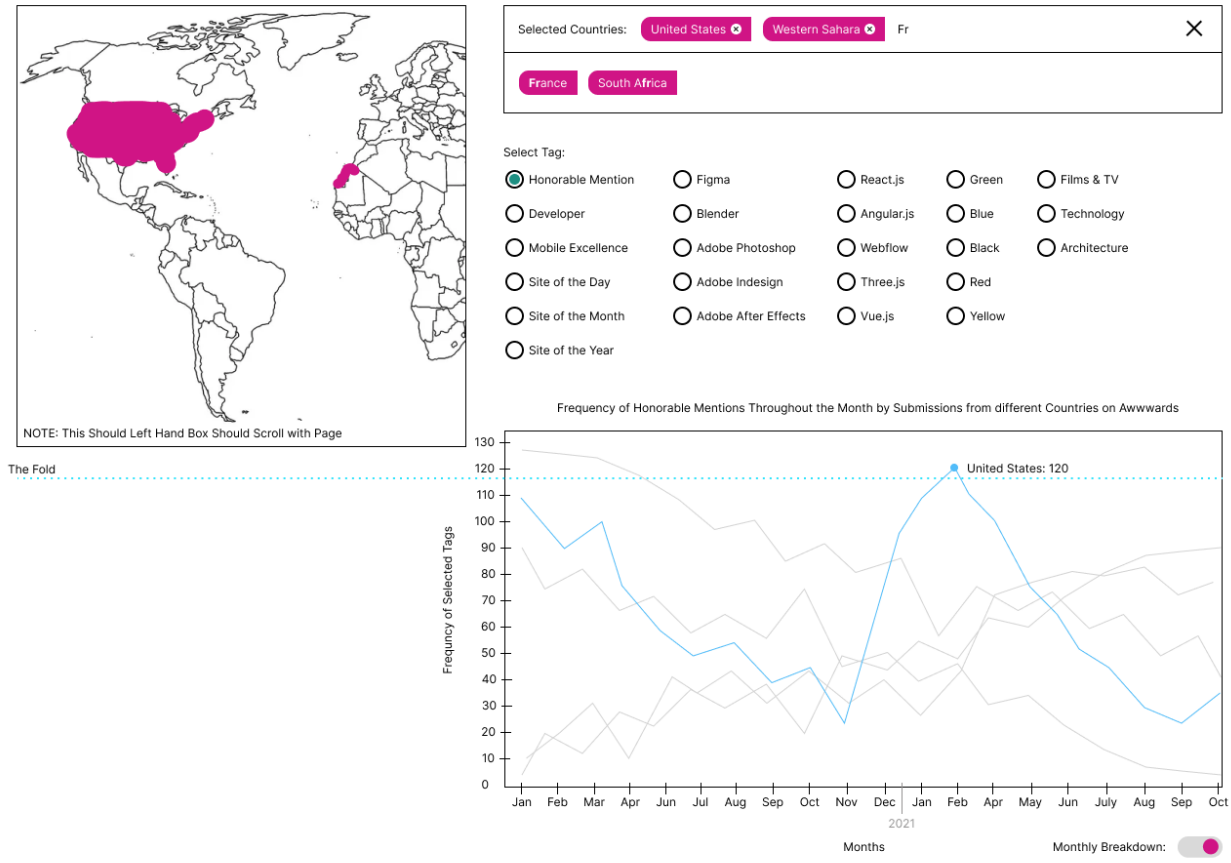
Tech Stack: Three.js, React.js

Previous Next

Frequency of Tag Throughout the Month on Submissions on Awwwards



Sketch 3—


NOTE: This Should Left Hand Box Should Scroll with Page
Selected Countries:
United States
Western Sahara
Fr
France
South Africa
Select Tag:
Honorable Mention
Figma
React.js
Green
Films & TV
Developer
Blender
Angular.js
Blue
Technology
Mobile Excellence
Adobe Photoshop
Webflow
Black
Architecture
Site of the Day
Adobe Indesign
Three.js
Red
Site of the Month
Adobe After Effects
Vue.js
Yellow
Site of the Year
Frequency of Honorable Mentions Throughout the Month by Submissions from different Countries on Awwwards
The Fold
United States: 120
Frequncy of Selected Tags
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Jan
Feb
Mar
Apr
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Apr
May
Jun
July
Aug
Sep
Oct
2021
Months
Monthly Breakdown:

Sketch 4—

Selected Countries: United States, Western Sahara, Fr, France, South Africa

Selected Tags: Honorable Mention, Adobe Illustrator, React.js, Green, Film & TV

Awards: Honorable Mention, Developer, Mobile Excellence, Site of the Day, Site of the Month, Site of the Year

Design Software: Figma, Blender, Adobe Photoshop, Adobe Indesign, Adobe After Effects

Technologies: React.js, Angular.js, Webflow, Three.js, Vue.js

Colors: Green, Blue, Black, Red, Yellow

Categories: Architecture, Films & TV, Technology

The Fold

Site of the Day - October 20th

Age of Union - Locomotive

Awards: Developer, Site of the Day

Categories: Film & TV, Architecture

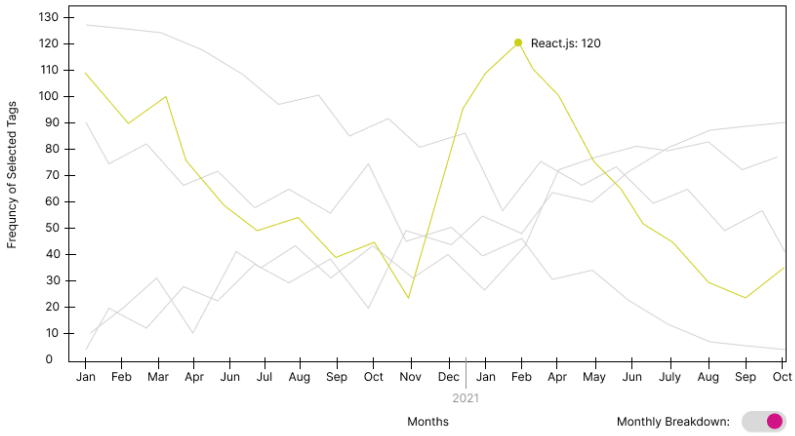
Design Software: Figma, Adobe Illustrator

Tech Stack: Three.js, React.js

Honorable Mention - Sep 29, 2022

BRYANTCODES.ART

Frequency of Tag Throughout the Month on Submissions on Awwwards



Note: Whichever line is selected will be the tag selected below to allow comparing trends among selected countries

Sketch 4– Continued

Awards: Honorable Mention

Categories: Experimental, Portfolio

Design Software: Figma, Adobe Illustrator

Tech Stack: TailwindCSS, Typescript

Honorable Mention - Sep 27, 2022

Mr.Pops

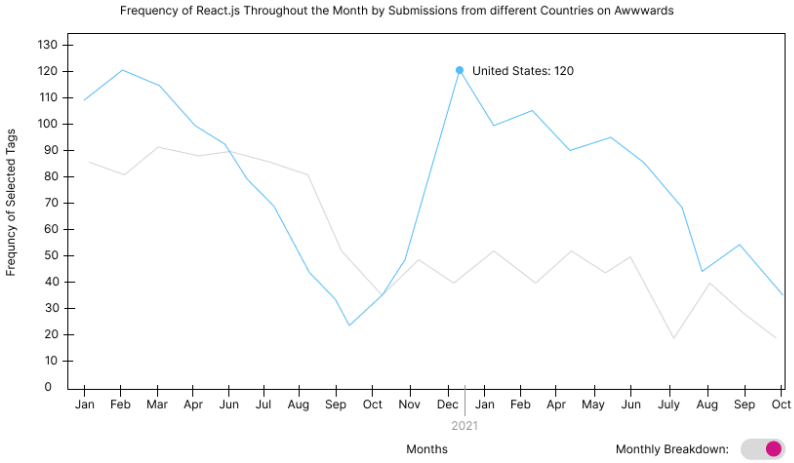
Awards: Developer, Honorable Mention

Categories: E-Commerce

Design Software: Figma, Adobe Illustrator

Tech Stack: Three.js, React.js

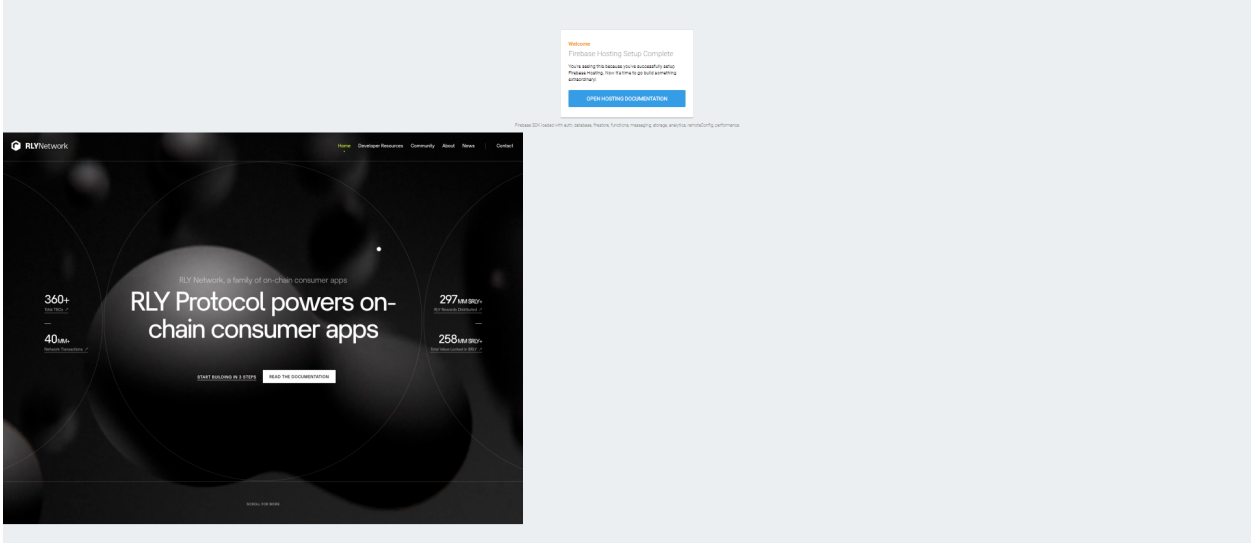
1 2 3 4 **NEXT**



Potential Image Rendering Issues

[entry by Brendan Le, 10/27]

After meeting with Dylan Hansen, Ervin Chhour, Khris Thammavong for our peer review session, a couple of important points came up that we didn't think about. The first is we didn't think about the feasibility of rendering our images. Scraping the thumbnail links off the webpage is easy enough. We can just put an html image tag with the href as the link. However, I remembered about Cross-Origin-Resource-Sharing (CORS) which is a defense mechanism of the browser to prevent cross-site scripting attacks. I may be able to render the page on my web server because localhost is a whitelisted exception but when we have to host the site on github pages it may break. So I created a webpage to test this which is hosted on google Firebase at https://cors-test-4445d.web.app/ and there seems to be no issue with that.

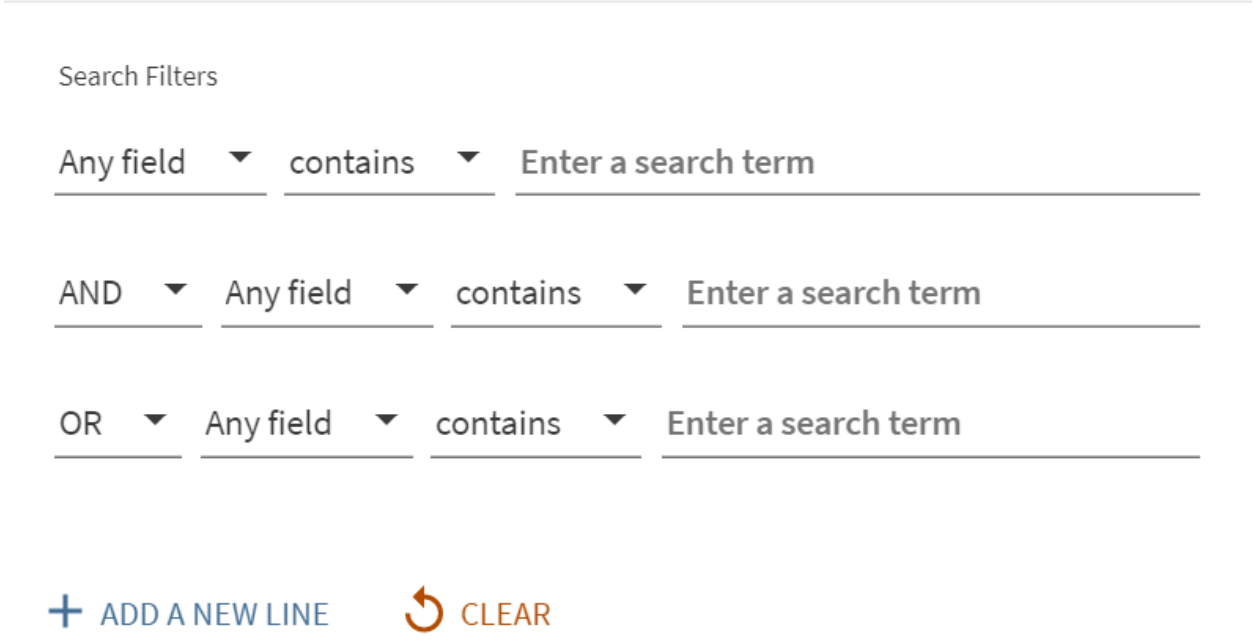


The image on the bottom left is clearly rendering which is good.

Redesign Ideas

[entry by Brendan Le, 10/27]

From the feedback we got from the peer review and having more time to look at our design I realized that we ought to redesign it. First, it's missing an introduction. It's not readily obvious what the data set is or what the data visualization is trying to do unless you are a digital creative already familiar with the space. Secondly, the tag system is quite restricted. It only allows for one category to be compared to another. What if I want a combination of categories to compare to another? For example, what is the trend line of websites that won Site of the Day Award that use Photoshop compared to the websites that won only the Developer Award. It's not possible. So I got the idea for a new filter/tag system when I was searching for a book on the Marriott Library:

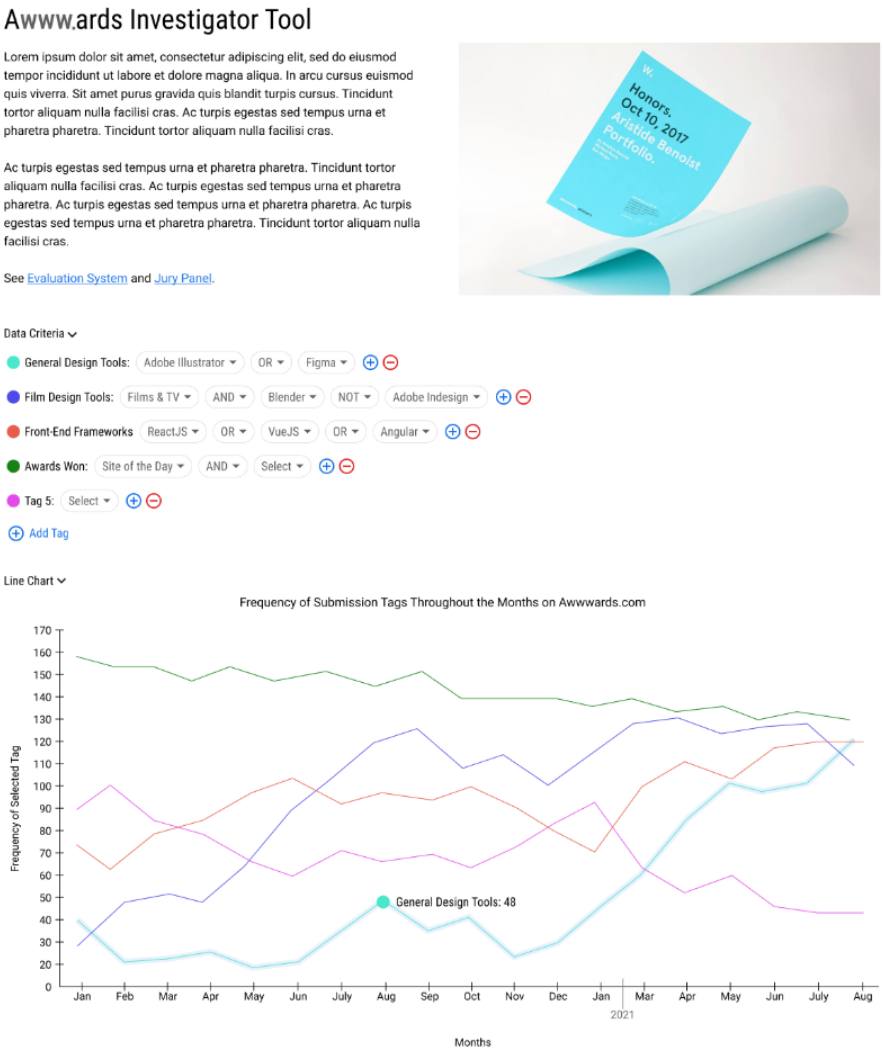


Instead of selecting one category, you can select multiple categories using an AND/OR system. If I want to select all the website submissions that use Photoshop and After Effects it would be something like [PH, &&, AE] as an example representation.

Another issue that came up when going over our initial sketch is the real estate on the page. Although it would be nice to have a map side by side with the line chart, we may not be able to fit it all without a) squishing everything or b) overloading the user with too much on the screen. Instead, we will just stack them vertically on top of each other and have a drop down to collapse any section we don't need.

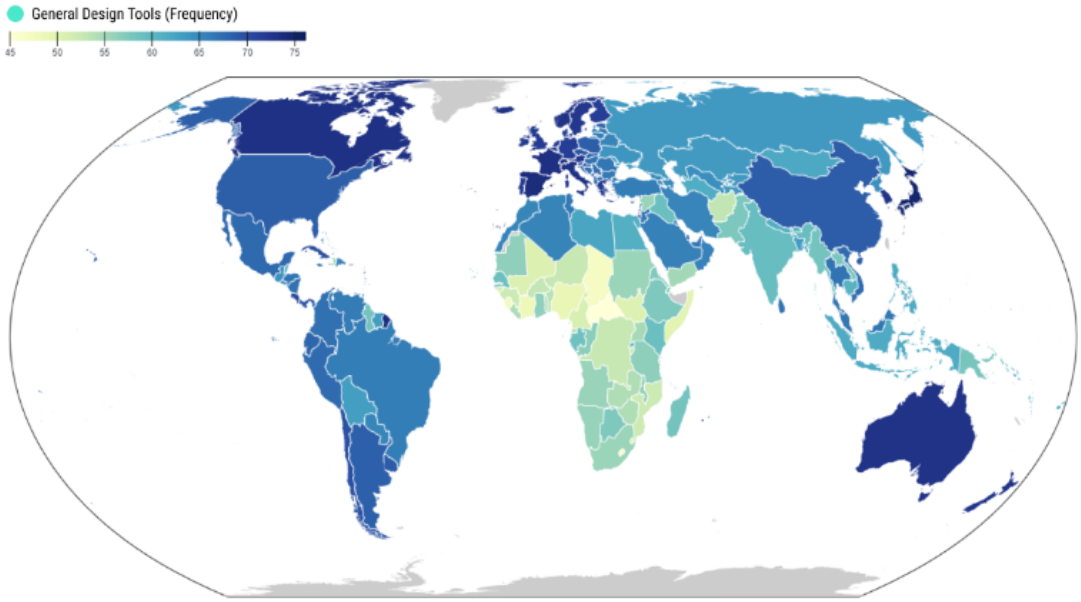
Redesign Sketch

[entry by Brendan Le, 10/28]



World Choropleth

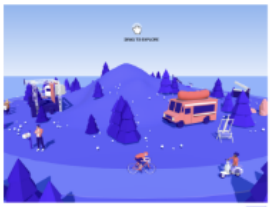
Time-Series World Choropleth of Frequency of Selected Tag



Selected Websites

humana DEV SOTD

SERIOUS.BUSINESS DEV SOTD



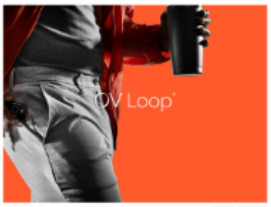
Joshua von Hofen DEV

The First the Last DEV SOTD

BORNFIGHT STUDIO DEV SOTD

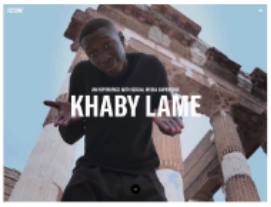
Studio Freight DEV SOTM

Vida Infra HM

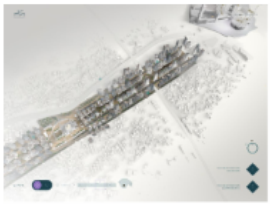


Rejouice DEV SOTD

The First the Last DEV SOTD

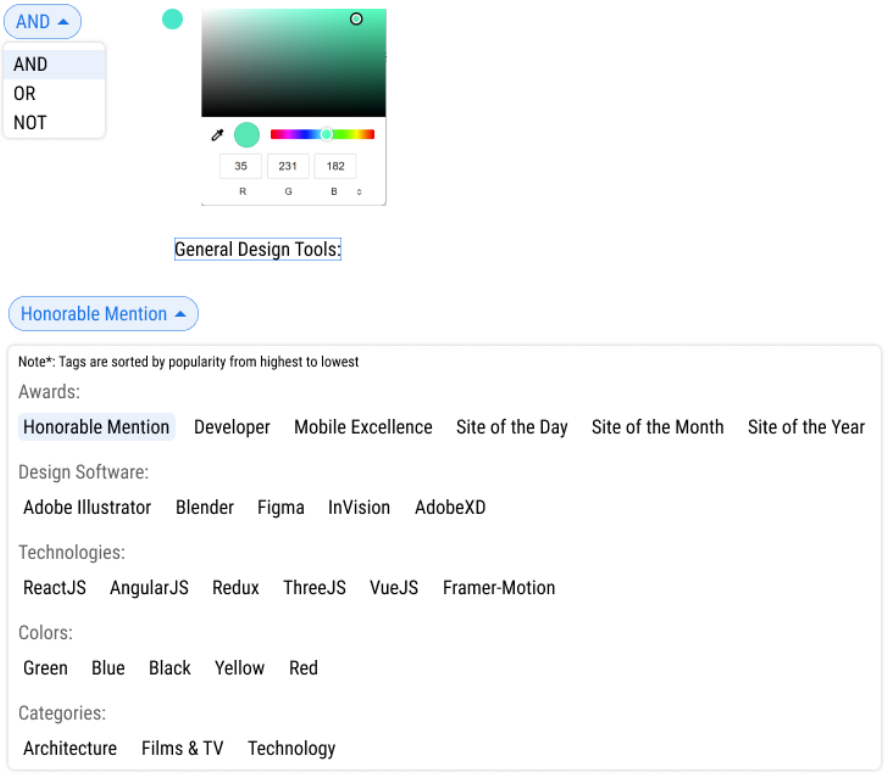


Rocani Studio

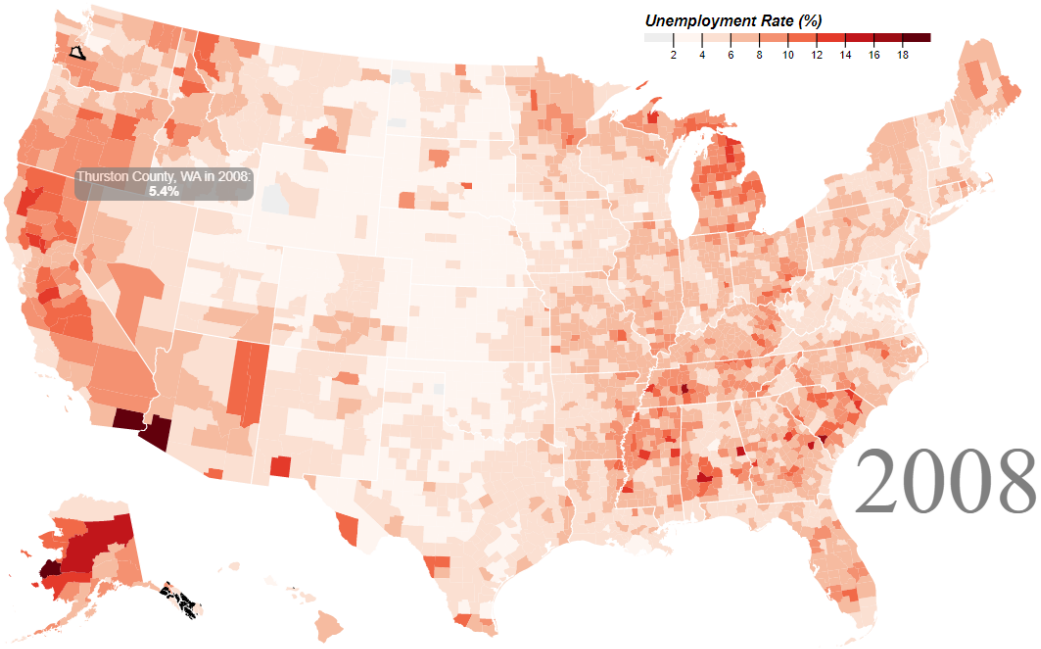


Immersive Garden DEV SOTD

advanced team DEV SOTD



After our group meeting, we discussed the feedback and came up with a new sketch in Figma. Hovering over the line highlights the data point (the number of submissions that fit your filtering criteria) and the name of the line which corresponds to the name of the filter. Also the color of the line corresponds to the color of the tag. Hovering over each data point will affect the world map below, making a choropleth for that data point in time. As you move along the line it should look like a data viz similar to one I found entitled “Experimenting with d3.js to Create an Animated Choropleth Map of U.S. Unemployment by County” at https://rahosbach.github.io/2018-10-27-d3UnemploymentChoropleth/.



Sample image of map from link.

Started Building

[entry by Brendan Le, 11/07]

I finished the basic layout of the site. All the dropdowns are working to collapse the sections. We just need to fill out all the sections. Also I need to fill in the dummy text. Before the project milestone, our new plan is to just finish the filter system and set up the views. Most if not all of the interaction will be programmed after.

Awww.ards Investigator Tool

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. In arcu cursus euismod quis viverra. Sit amet purus gravida quis blandit turpis cursus. Tincidunt tortor aliquam nulla facilisi cras. Ac turpis egestas sed tempus urna et pharetra pharetra. Tincidunt tortor aliquam nulla facilisi cras.

Ac turpis egestas sed tempus urna et pharetra pharetra. Tincidunt tortor aliquam nulla facilisi cras. Ac turpis egestas sed tempus urna et pharetra pharetra. Ac turpis egestas sed tempus urna et pharetra pharetra. Ac turpis egestas sed tempus urna et pharetra pharetra. Tincidunt tortor aliquam nulla facilisi cras.

See Evaluation System and Jury Panel for more details.

Data Criteria ⌄
Hello

Line Chart ⌄
Hello

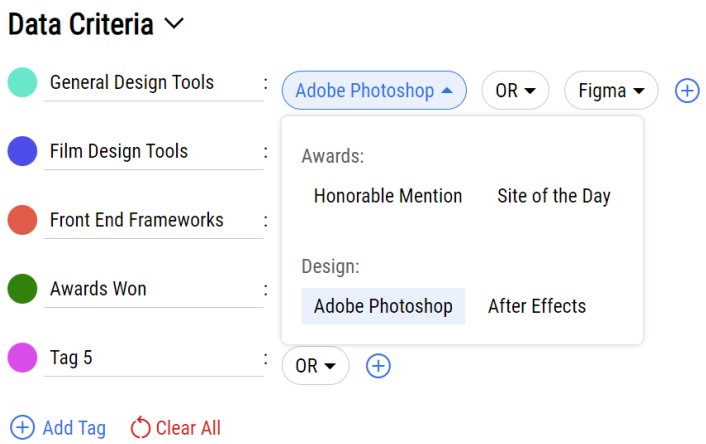
World Choropleth ⌄
Hello

Selected Websites ⌄
Hello

Created by Brendan Le, James Scholz, and Gabriel Jarrard for University of Utah College Project - Not Affiliated with Awwwards.com

Finished Most of GUI for Filter

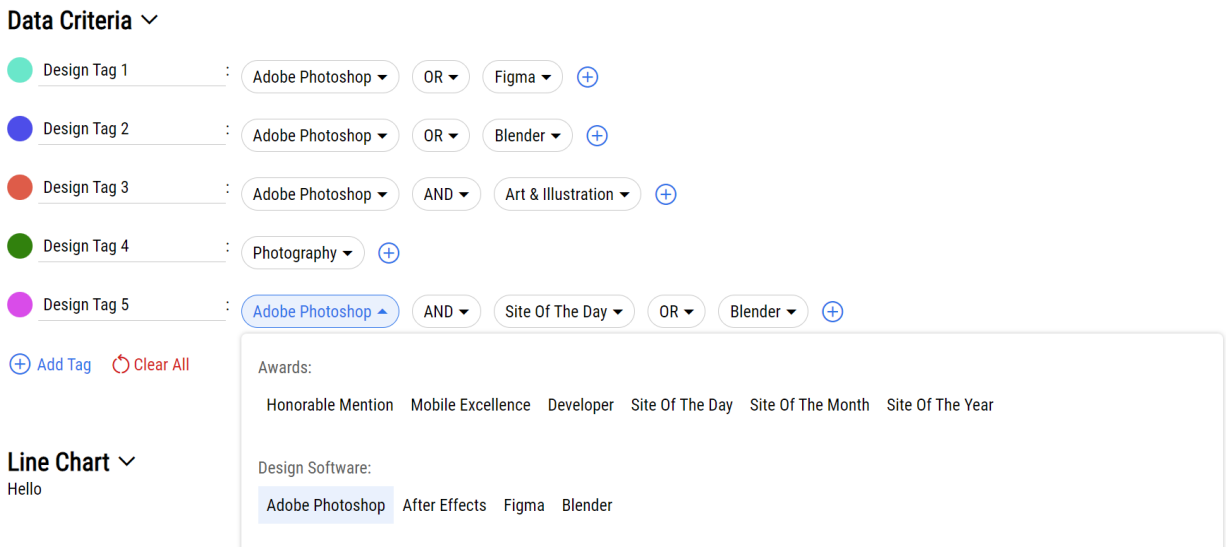
[entry by Brendan Le, 11/09]



For simplicity's sake, I got rid of the option to delete part of the filter. For example, in the first one. If we decided we just want to filter based on photoshop instead of Figma there is no way to get rid of that for now. Instead, I added a clear all button to delete all tags. This will suffice before the milestone. There is one concern that I didn't think about that came up when building. There are a lot of categories to filter on. Some of them don't make all that much sense and some of them are in Spanish for whatever reason. They are also not sorted. For example, ["React", "Film", "Adobe Photoshop"] are in the same array although they each belong to their own subgroup. I will have to manually sort these categories in the future.

Finished Filter Functionality

[entry by Brendan Le, 11/11]



Now the filter is complete with actual functionality beside GUI. Each tag selects a subset of the data which can be fed to the underlying charts.