

#dataart

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Team

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Client

Riley Benson: Senior UX Designer, SAS

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Figure: The 4 by 15 sq.ft. screen at SAS HQ for Data Art

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Tools Used/Experimented

Processing

A flexible software to develop code for visual arts, games, and animations. Typically used by students, artists, designers, researchers, and hobbyists for learning and prototyping. This software is very easy to understand and has very good [documentation](#) and example visuals to help developers learn. It also allows interactive graphics in 2D as well as 3D.

Adobe Animate

A multimedia tool used to design graphics and vector animations developed by Adobe systems. It is a paid tool, and hence we had limited time to learn and use the tool. Animate is used to design vector graphics and animation for television programs, online video, websites, web applications, rich internet applications, and video games. The program also offers support for raster graphics, rich text, audio and video embedding, and ActionScript scripting. Animations may be published for HTML5, WebGL, Scalable Vector Graphics (SVG) animation

Invision Studio

A great tool for rapid prototyping. It can be used to easily convert static images into interactive prototypes and the interface is similar to Adobe Animate. It also allows for collaboration within the app itself. Although, it can be a little intimidating and confusing if you are using this platform for the very first time and learning can be a little frustrating and time-consuming.

Inkscape

This is another tool for sketch creation and editing. All of us are first-time users and the interface looked daunting. We found a few video tutorials online for drawing sketches, but it felt like a lot of work to come up with the simplest of animations and thus we decided against using it any further.

GifMaker

Very easy and intuitive to use, and completely [online](#). The major downside to this was the huge number of pictures required to create even a very short animation. It is not appropriate for the length of the animation we want to create.

Photoshop

Adobe's photo editing, image creation, and graphic design software. It provides many image editing features. It uses a layer-based editing system that enables image creation and altering with multiple overlays that support transparency.

Tableau

A powerful and fastest-growing data visualization tool that could pull data from any platform. It helps in simplifying raw data into a very easily understandable format. Data analysis is very fast with Tableau and the visualizations created are in the form of dashboards and worksheets.

Roles

All of us worked on developing our own versions of the main idea. This was done for 2 key reasons - each individual's capability for imagination and skill level with different software; and so that everyone can showcase their vision for this project in their own creative ways. We then presented our prototypes to each other and also to our clients, explaining our ideas. We finally decided to build a single final prototype taking inspiration from all the presented prototypes.

Amogh Agnihotri Subbanna - Worked on Processing IDE from processing.org and devised a version with a temperature line-graph that changes color from blue to red as it falls and climbs. Created randomly generated terrain and landscapes with plants/glyphs. The entire picture was highlighted (by a moving light beam) based on a particular instance of time (realtime). The version also included snowfall and rainfall based on the temperature

Bhoomi Shah - Worked on adobe animate and devised a version with a city silhouette with the background that corresponds to the time of the day. The animation was split into 6 parts: 6am-10am 10am-2pm , 2pm-6pm , 6pm-10pm , 10pm-2am and 2am-6am cycle with the background changing as the day progressed.

Jaydip Gabani - Worked on Processing IDE from processing.org and devised a version using the data on temperature and plotting it using a color scheme. Red depicted warm climate whereas blue depicted colder times of the day.

Lalima Sharda - Worked on Processing IDE from processing.org and devised a version with landscapes that depicted three different cities and flowers that depict the place where the maximum number of people are present in the office.

Masoom Haghani - Worked on an illustration similar to a plant, where each petal represented the number of people present. The number of leaves represents the number of people; the more leaves, the more people are in the location. The color of the leaves shows the specific location in which people are. In addition, I worked on Tableau to visualize the temperature data.

Neel Parikh - Worked on Adobe Animate to create intuition of how people move around during the time of day and for a particular weather, but this visualization didn't seem impactful. Therefore I worked on deciding different colors for different temperatures and how different colors change with the change temperature.

Sruthi Talluri - Worked on Adobe Animate initially to create waveforms and animate them, but this could not be improved any further. Later worked on Processing IDE from processing.org and created waveforms and design for a simple flower using ellipses, to be added as a shape variant for flowers

Prototype



The first version of our product can be viewed here:

https://drive.google.com/file/d/1JyRuREc2SbleOa_p-DP9Nyww1NFgYsn0/view?usp=sharing

What we are trying to depict in this animation is the effect of climate on human behavior. The background shows the time of the day through the changing sky colors, and the rising and setting of the sun and the moon. The three green mountain silhouettes depict three different cities. We highlight one city at a time by showing flowers only on the mountain corresponding to it. Every mountain visualizes the temperature changes throughout the day in that city. We have used dummy temperature data.

The flowers on each mountain represent a thriving human activity for each color in a specific location. For example, red is a representative of restaurants and cafes and the blooming of red flowers in the animation signifies most people are at the restaurant. We have also added an animation of snowfall to represent precipitation in the highlighted city. At first, the prototype might seem difficult to interpret but we are still working on refining that part as well as the overall aesthetics of our visualization.

In a Nutshell:

Green Mountains: Temperature graph for the day

Flowers: Different Human Activities

Background: Depicts time of the day with added animation of the sun and moon cycle.

White snow: An example to show that it is snowing in that city on that day.

Trial

We met our client virtually and received the following comments. These were to be addressed in the final prototype delivered.

1. We need to make sure that the color schemes do not clash between each element.
2. Highlight one city at a time in the visualization as we will be easily able to distinguish between each other.
3. Show weather only for one city at a time which should be highlighted.
4. If we do create the scrolling lighting effect, make sure the spread of the light is wide enough to not have significant black (empty) portions on the screen. We can also create a grey background, to give the viewer the idea that the screen is on.
5. Need better animation for the flowers.
6. Need for a good legend to understand the visualization.