

Syrinx team

Femicide in the USA 2018

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Process Book

Data visualization COM-480

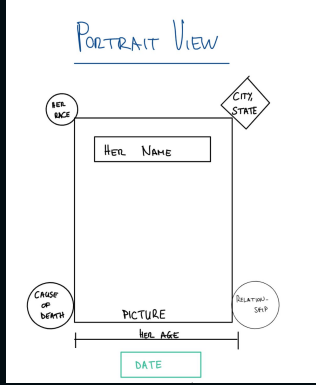
Initial idea and the dataset

Our initial idea was to create a webpage with an interactive visualization of the femicide data that we planned to find online and it was the first challenge that we faced. We were inspired by the work of the "Data against femicide" organization that holds a conference dedicated to collecting and maintaining femicide data. From the recording of the last conference we learned about the database of all known cases of femicide in the USA manually created by Dawn Wilcox. It can be found on the official website of the Women Count USA: Femicide Accountability Project, displayed as an airtable. We wrote an email to Dawn Wilcox asking for the data in csv format that we could potentially use in our project. She agreed to share with us the most complete of her datasets: "2018 WOMEN & GIRLS ALLEGEDLY KILLED BY MEN & BOYS" and we want to highlight that we appreciate this a lot. The database is copyrighted and we can't share the obtained file in our public GitHub repository, that's why, we decided to store it on our EPFL Google Drive, provide access only for evaluation purposes and then delete it.

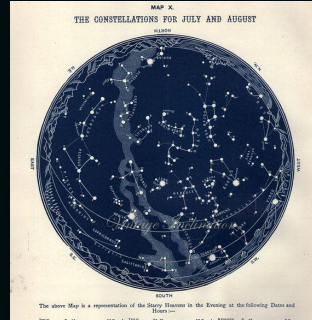
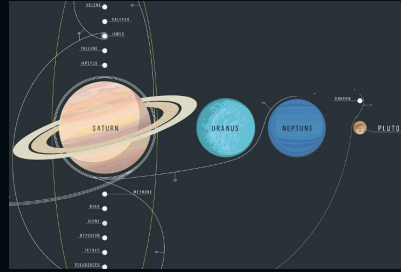
First thoughts about the visualization design

Our goal was twofold. We wanted to honor the memory of all the victims of femicide in the USA in 2018 by creating a space for their names and stories. Also, we wanted to highlight the dynamics behind this data with some interactive visualizations. And our initial plan included creating five different views linked with each other presenting the data from different perspectives: ensemble, portrait, statistical, timeline and map. The ensemble view was planned to show women with icons, while filters highlight a subset of icons based on the chosen criteria. The portrait view is a closer look at each woman with the information concerning her age, city, etc... The statistical view takes into account both women and men with basic statistics. The timeline view is the women's data organized by date of death. The map is the women's data organized by place of death. Later we decided to focus on the ensemble, portrait and statistical view because they are the most important in the context of our project.

Portrait view storyboard

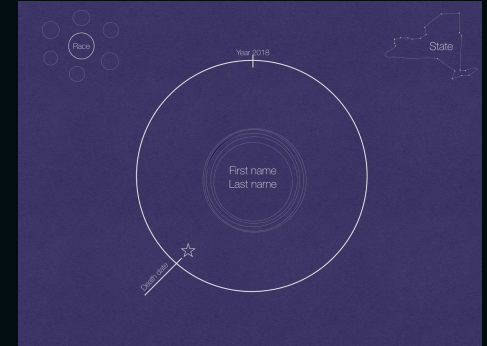


Step 1 : Define the view based on each victim's details (her name, race, age, state, date of death, cause of death). This view aims at emphasizing emotion and remembering each individual, it acts as a memorial.

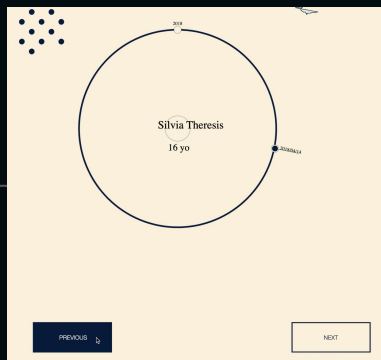


Step 2 : Define a theme
Especially for this view, we thought it would be good to have a theme to direct the design. As the problematic we are visualizing is linked to death we thought that a *night sky/cosmological* theme would be appropriate. Two images were used as inspirations.

Step 3 : Decision design
The design moved towards more rounded shape. Multiple design solutions were envisioned for the age feature. All the features available are represented in a categorical way, except for age that is quantitative (thin circles corresponding to age) and death date that is on a year-round timeline.



Portrait view storyboard

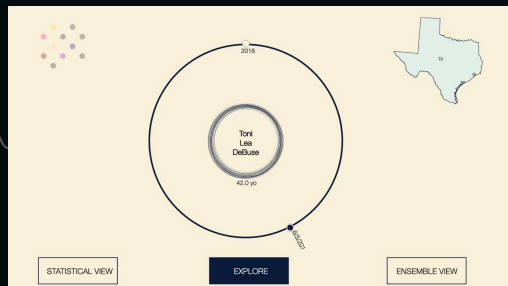


Step 3 : Initial features.

A growing circle for age, to depict the life and its premature end. The SVG path for state required getting the box limits to end up well-positioned. A trick using dashoffset was used for path drawing. The cause of death was abandoned because of the negative feeling of rejection it might create and the design of more than 11 symbols for different causes was heavy.

Step 4 : Challenges

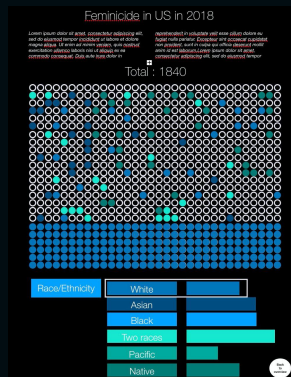
The buttons were modified to encourage a random exploration, creating the links with other views was tricky as everything should disappear but stay available for users if they go back to this view. Special cases, as very old age and big state had to be checked to avoid overlapping of multiple elements. Transitions for circles based on race were implemented using specific update functions. Additional links were not included to avoid redundancy.



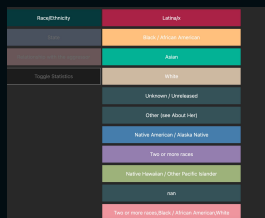
Step 5 : Final portrait design

In the final portrait view page users can find more information about the woman that was killed. Her name and age appear together in the center, to highlight who she was. The date of death is also shown as it would be on a tombstone. In the left upper corner the race/ethnicity of the victim is displayed, and in the upper right corner there is an image representing the state where the crime was committed. The Explore button allows users to switch to other portrait view pages, which can provide information about other victims.

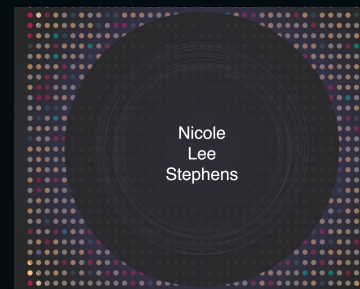
Ensemble view storyboard



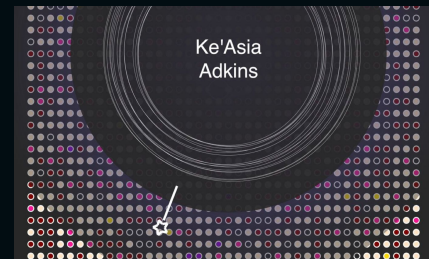
Step 1 : The main idea of this view was to create a “memorial”. The circles were supposed to change colors each time a category was selected, however, we decided that it would be too complicated to follow them if they changed their positions and colors at the same time. We also decided to avoid including the distribution for each category because these plots were already included in the Statistical view.



Step 2 : Implementation of the view and filtering buttons, adding an engaging transition element for the circles



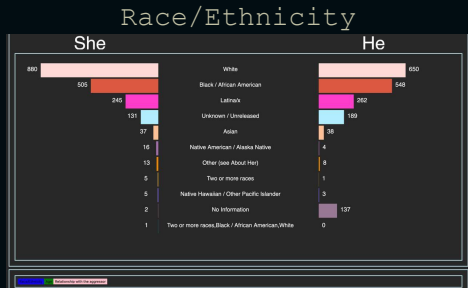
Step 3 : Implementation of a large circle with a name of the victim and her age represented by the number of thin circles around the name



Step 4 : Removing redundant elements (star), changing the positioning of circles, changing scales

Statistical view storyboard

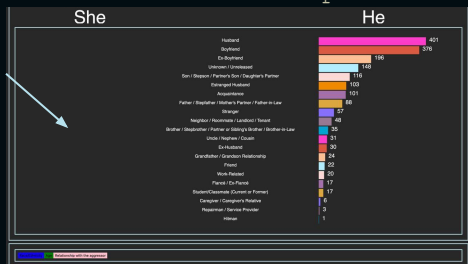
Before integration:



Age



Relationship



This
empty
space
was
left on
purpose
as a
symbol
of loss

Step 1 : Only the aggregated Statistical view was implemented because the Exploratory statistical view contained too many elements and was not informative enough.

Step 2 : The goal was to show different bar charts for categorical (race, relationship) and ordinal (age) data and to switch between them. Data preprocessing and aggregation was done using Python for such attributes as age and race of the victim, age and race of the suspected/killer and relationship between the victim and the suspected/killer. Age data was originally stored as an actual age of the victim/suspected, so it was aggregated and divided into 11 groups.

Step 3 : Building mirrored plots with transition elements was quite challenging and required understanding of the structure and geometry of the page.

Step 4 : Integrating Statistical view into the webpage caused some scaling problems because of adapting a single HTML file for all 3 views.

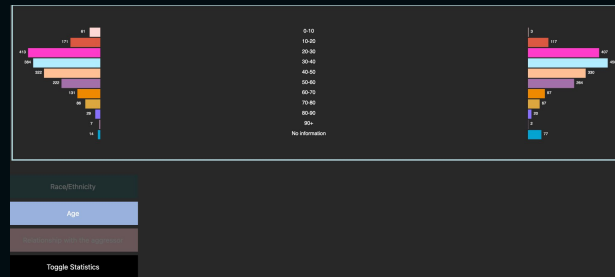
Exploratory

Aggregated



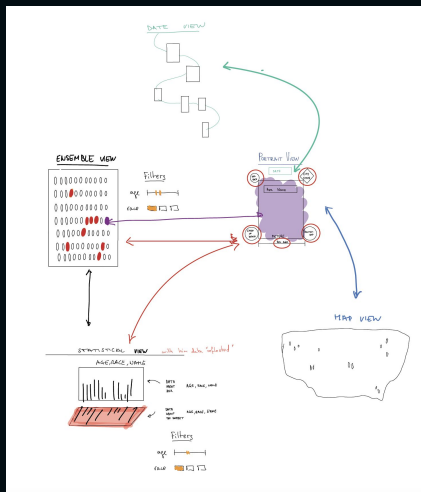
	race_label	her_race_count	his_race_count	age_label	her_age_count	his_age_count
0	White	880	650	0-10	61	3
1	Black / African American	505	548	10-20	171	117
2	Latina/x	245	262	20-30	413	407
3	Unknown / Unreleased	131	189	30-40	384	456
4	Asian	37	38	40-50	322	330
5	Native American / Alaska Native	16	4	50-60	222	264
6	Other (see About Her)	13	8	60-70	131	97
7	Two or more races	5	1	70-80	86	67
8	Native Hawaiian / Other Pacific Islander	5	3	80-90	29	20
9	No Information	2	137	90+	7	2
10	Two or more races,Black / African American,White	1	0	No Information	14	77

After integration:



All views together

Initial idea (sketches)



Final product



General challenges:

- We wanted to include photos of the victims in our visualization but we didn't get access to them. That's why, we decided to focus more on the design of our visualization.
- We also decided not to implement our extra ideas (interactive timeline and map views) from the second milestone because of the lack of time.

We implemented our idea of creating 3 different views and linking them together using an SPA approach because it is a more modern and efficient way of creating a website compared to linking several HTML pages with each other.

At the same time, there were some challenges in the integration of the views and not all of them we could solve:

- In the beginning we started from creating three different HTML frames. Merging them was difficult and caused additional problems. We had to dynamically add divisions with d3 and tweak the HTML files themselves to reserve room for the apparition of the animations.
- The behavior of the div and the navigation between different views were difficult to handle. We had to remove and place the elements wisely. Different mouse events implemented in the same selection were also sometimes tricky to implement.
- Scales of the different frames are difficult to adapt to one another and we couldn't find a solution to fix it completely.
- We didn't use the full functionalities of git and did not build an efficient dev pipeline to work simultaneously on the same parts because we didn't have much experience with git and didn't want to risk breaking the main branch.

Peer assessment* and conclusion



Amina Matt

Coming up with the initial idea about the topic of our project, participation in the search for a dataset, communication with the author of the femicide dataset by email, obtaining a dataset, design of the website, implementation of the Portrait view of the website, designing the process book, filming the screencast.



Irina Serenko

Participation in the search for a dataset, implementation of the Statistical view of the website, dataset exploration and pre-processing, data aggregation for the plots included in the Statistical view using Python, designing and writing the process book and the description of the webpage.



Florian Vincent

Participation in the search for a dataset, implementation of the Ensemble view of the website, dataset exploration and pre-processing, building the initial skeleton for the second milestone and combining all three views together into the final version of the webpage using an SPA approach.

*We all tried to help each other with difficulties and challenges that we faced while working on this project. Everything that is not mentioned above was done by all team members together. For all three milestones we divided our work into approximately equal parts, so each of us could contribute to the project, depending on the previous experience with JS, HTML and CSS.

For this project we created an interactive and engaging visualization of the US femicide data 2018. We implemented: the ensemble view to highlight the large number of femicide cases by displaying all of them as small circles, the portrait view to tell more about each woman and the statistical view to show some interesting results of data aggregation and to let users draw their own conclusions based on it.