Players engagement with respect to game genres, on Steam public data - Process book

Team "no preference"
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1 Ideation

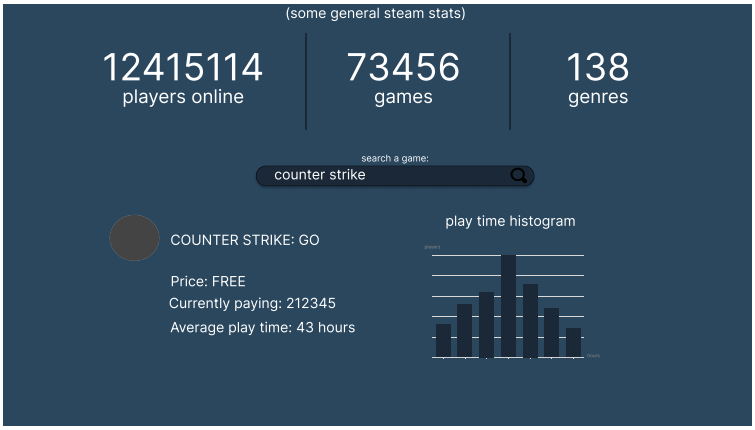
We are a pretty diverse group who didn't know each other before starting the project, so the first part of the ideation was to all make a bit of research each on our side to list potential subjects of interest which had potential datasets available. We listed a bunch of title ideas and datasets that you can find in Appendix A.

1.1 Initial idea

We wanted to work with gaming-related data, so tracking the activity of players on Steam was the option we decided to go with. After discussing how we wanted to use the player data, we decided to focus on tracking the popularity of games in different aspects. At first, we wanted to focus on a bar chart that shows the top games in terms of player count, played time, engagement, and price.

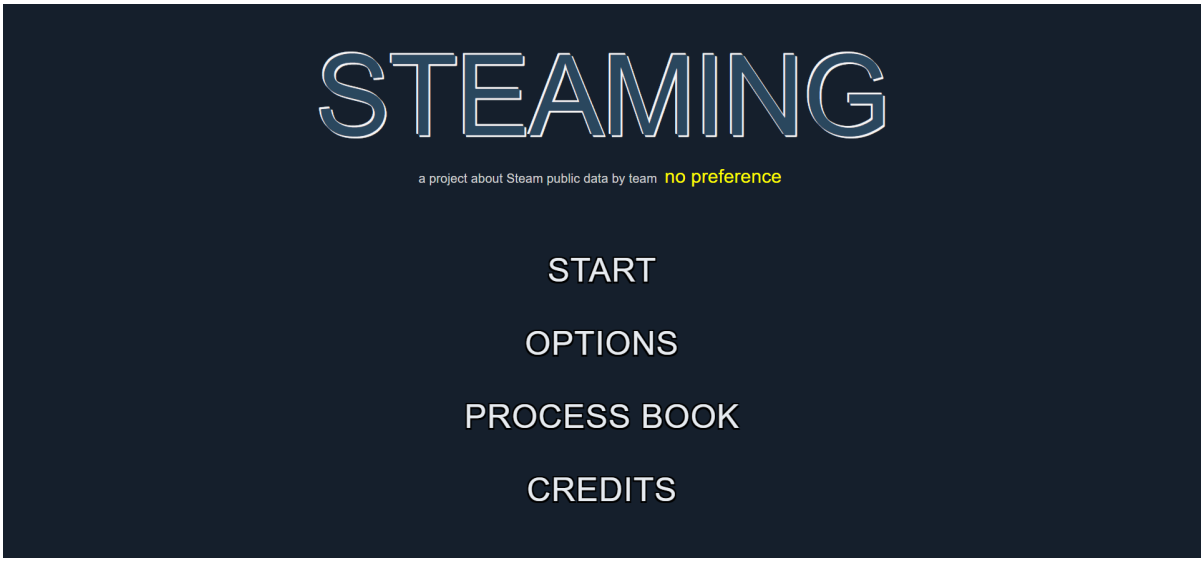
Barchart As shown in this prototype, the barchart would be controlled by a slider to scroll through time, and the buttons below to measure the different statistics. On the right there would be a panel with the instructions and two panels highlighting the top games in the most popular game genre. We ended up removing the category selectors because the dataset we found had only player count for each genre, but not played time, etc.

Live stats Later on we decided to add some live stats from specific games with a search, showing current players online in steam and in the specific game searched. In the end we abandoned this idea due to the lack of available live data.

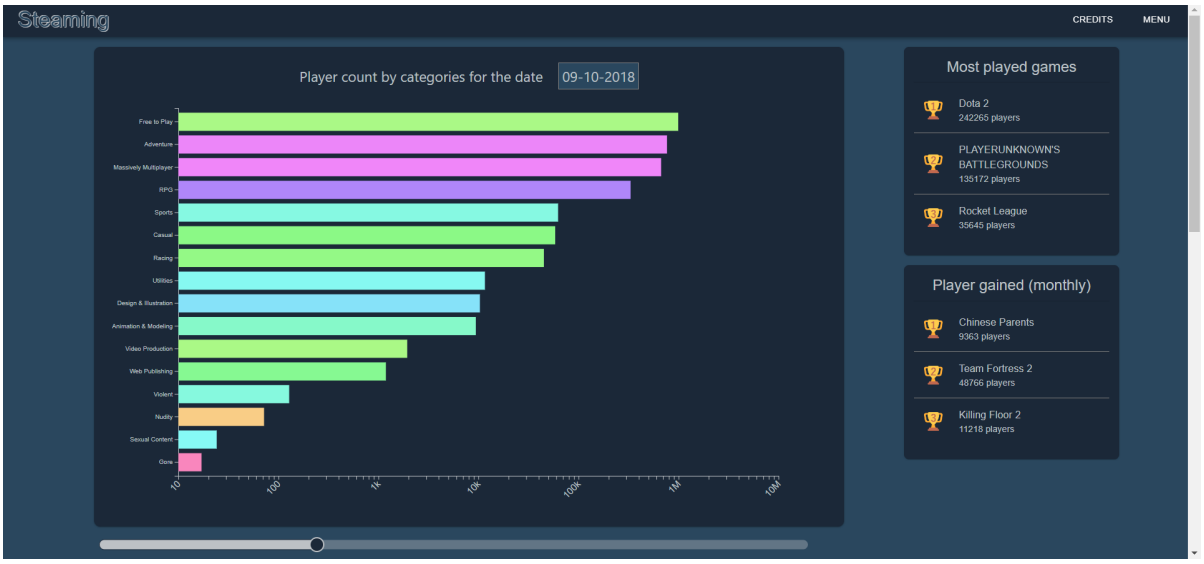


1.2 Final look

Start page Since our webpage is about videogames we decided to gamify it by adding a start page similar of those of videogames. When pressing "start", the screen scrolls down to show the main section. When the user presses "credits", the page scrolls directly to the footer and when "process book" it opens the process book pdf. We decided to go with ablue color for the start page similar to the steam logo blue.



Main page For the main page we decided to keep the steam color palette going, with a lighter blue in the background which is the same as the steam one. In the navbar, if "credits" is pressed the page will scroll down to the footer, and if "menu" is pressed it will disable the scroll bar and scroll up to the start. The main section will be explained in detail in the data visualization feature descriptions section.
It was challenging making the scroll animation work, and it is still not as smooth as it should be when reloading the page.

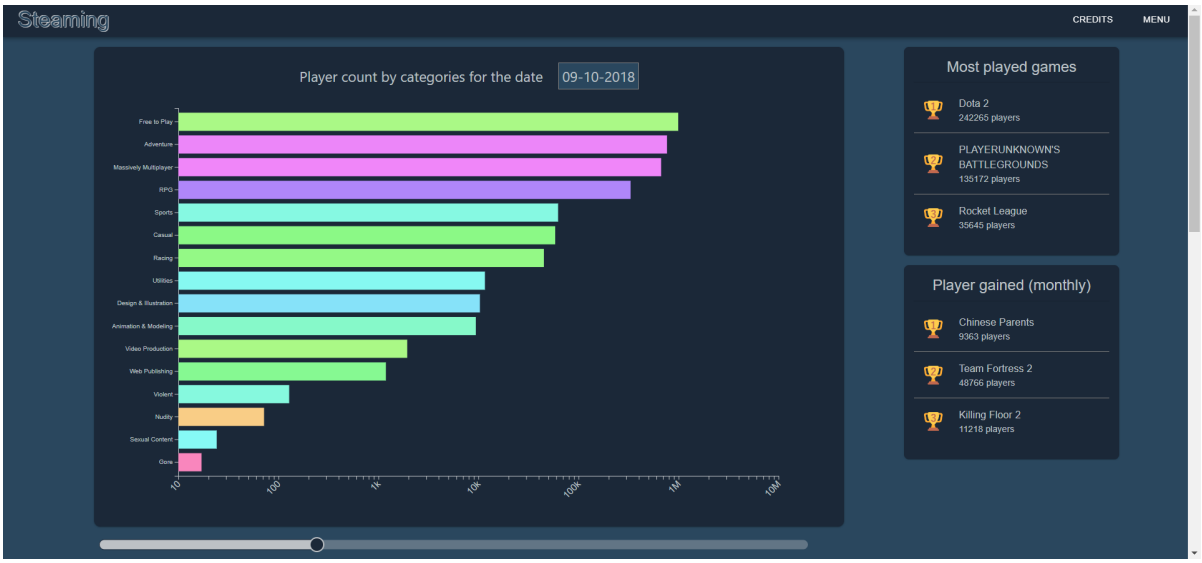


Footer The footer follows again the color theme and presents the Authors, a clickable wordcloud with the techs and sources used and a links section with the process book and screencast link.
Making the wordcloud ended up being challenging, it is a react-d3-cloud and it took time to understand how it works and how to position the text properly.

2 Data visualization features

2.1 Barchart

The bar chart presents a ranking with the most popular game genres, showing the player count for each one and if one of the bars is hovered it will show a description of the most popular game of that genre. When the slider below is used it is possible to scroll through time to see the evolution of the popularity of the genres, the date can be seen below. The cards on the side shows the top 3 most played games with the player count, and the top 3 games that gained the most players that month.
We found this graph interesting because it swhows the evolution of trends in the gaming industry regarding what type of game has been most popular throughout the late 2017 and 2020.

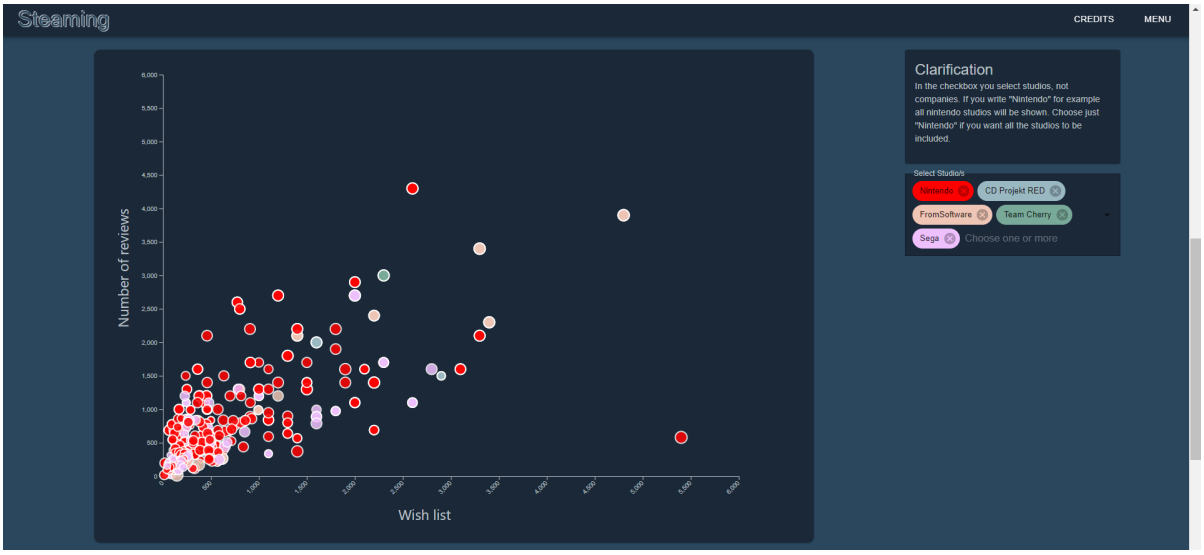


Challenges This was the first component that was designed, which meant it was the first contact with Material UI and it's grid system, which was confusing at first. One of the challenges we encountered while working on the bar chart was related to the dataset. Initially, we aimed to incorporate various features and allow users to choose which feature to plot. However, finding a suitable dataset that aligned with this approach proved to be difficult. As a team, we made the decision to pivot our strategy and instead focus on enhancing

the interactivity and information provided within the chart itself. We implemented tooltips on each bar, which allowed us to offer additional details and create a more interactive experience for users.

2.2 Bubblechart

The bubblechart compares the different game studios in the industry by the popularity of their games. It provides insights into the gaming industry by visualizing the relationship between the number of users who added a game to their wish list (x-axis), the number of reviews given by players (y-axis), and the rating of the game (represented by the size of the bubbles).
Regarding design, we decided to use clearer colors for the bubbles to have good contrast with the background, as well as decreasing the opacity of the bubbles a bit, so that the bubbles do not cover each other when they intersect.
This interactive chart allows users to hover over each bubble to view a the name and rating of the game. By comparing the performance of games from different studios, users can identify patterns and trends, such as studios known for consistently high-rated games or games with a significant number of reviews. The bubble chart serves as a valuable tool for analyzing the success and popularity of games across different metrics, providing a comprehensive view of the gaming landscape.



Challenges The multiple select list proved to be a difficult component to learn, as it is quite complex, with multiple layers and actions going on. Regarding the data processing, some of the latest releases appeared with no rankings yet (like Zelda: tears of the kingdom), so it was necessary to search in metacritic for the ratings of new releases. Apart from this, in the dataset the number of wishlisted and reviews was declared as a string after it surpassed 999, for example: wishlist: "3.6k".

3 Peer assessment

Jack Lau Searched and gathered datasets, performed exploration and processing using python. Implemented the functionality and layout for both the bar chart and the bubble graph using d3.

Luis Bustamante Implemented the MaterialUI components in Main view. Focused on the structure of the Main section, creating the visuals, layout and functionality for both graphs and navbar. Wrote the process book. Incorporated the gamesPopularity dataset.

Ulysse Widmer Hosted the page on github pages. Created the Start page, the footer and contributed the extra functionality in the bar chart, which consist of a description of the top game for each game genre when clicking on the bars. Composed the screencast as well.

A Porject ideas

```
## Ulysse
### Steam player engagement by genre
https://steamcharts.com/
https://steamdb.info/
https://www.kaggle.com/datasets/tamber/steam-video-games
https://www.kaggle.com/datasets/nikdavis/steam-store-games
https://www.kaggle.com/datasets/jackogozaly/steam-player-data
https://www.kaggle.com/datasets/trolukovich/steam-games-complete-dataset
https://www.kaggle.com/datasets/souyama/steam-dataset

### Weebz-visualization
https://www.kaggle.com/datasets/abdullahsamiir/anime-dataset
https://www.kaggle.com/datasets/canggih/anime-data-score-staff-synopsis-and-genre
https://www.kaggle.com/datasets/vishalmane10/anime-dataset-2022
https://www.kaggle.com/datasets/alancmathew/anime-dataset
https://www.kaggle.com/datasets/tarundalal/anime-quotes
https://www.kaggle.com/datasets/marlesson/myanimelist-dataset-animes-profiles-reviews

### Programming languages
https://www.kaggle.com/datasets/sujaykapadnis/programming-language-database

### Languages
https://www.kaggle.com/datasets/rajkumarpandey02/list-of-languages-by-total-number-of-spea

## Jack
### Netflix TV and movies
https://flixpatrol.com/top10/netflix/
https://www.kaggle.com/datasets/shivamb/netflix-shows
https://www.kaggle.com/datasets/victorsoeiro/netflix-tv-shows-and-movies
(ratio between tv and movies, view trend, genre ratio, cast leaderboard)

### Amazon sales
https://cleartheshelf.com/amazon-sales-rank-chart/
https://www.kaggle.com/datasets/lokeshparab/amazon-products-dataset
https://www.kaggle.com/datasets/karkavelrajaj/amazon-sales-dataset
(ratings of different product, product leaderboard)

### Countries strength
https://www.globalfirepower.com/countries-listing.php
https://www.worldometers.info/world-population/
https://www.kaggle.com/datasets/fernandol/countries-of-the-world
https://www.kaggle.com/datasets/brendan45774/countries-life-expectancy
https://www.kaggle.com/datasets/nitinsss/military-expenditure-of-countries-19602019
https://www.kaggle.com/datasets/sleymanzeynul/military-strengths-of-countries-2021
(hard power, soft power, population, gdp chart)
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