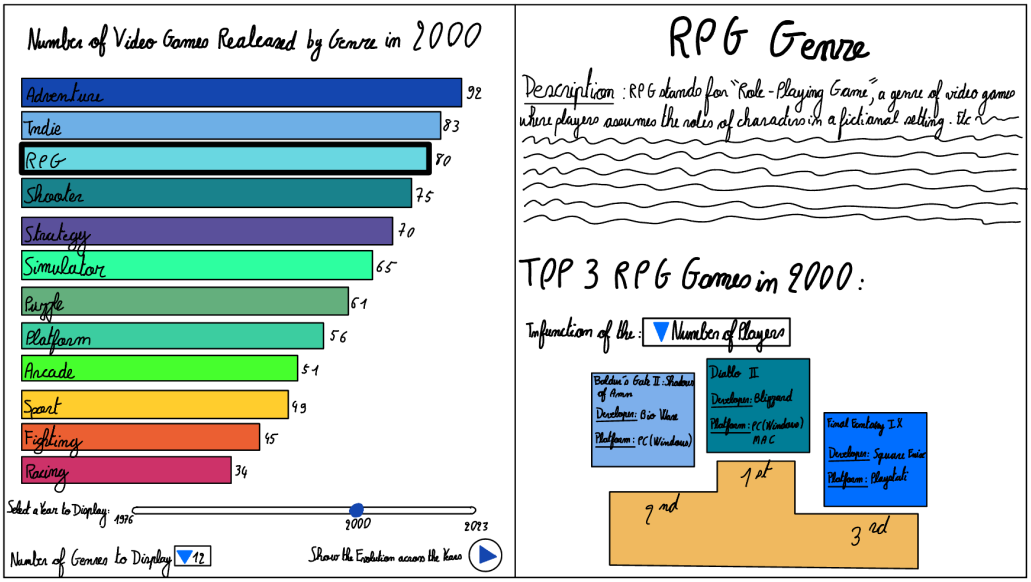
Milestone 2

Introduction

Our website is divided into 8 sub-sections, which are displayed independently. To get from one section to another, the user will have to scroll down or access a specific section in the menu presented on the right side of the web page. The first section will present the problem that we will answer on our website. The second will introduce the topic and the data presented (some simple statistics about the dataset, such as the total number of games, genres, platforms or developers). The 3rd, 4th, 5th and 6th sections will present a visualization based on a specific aspect of the video games (genres, platforms, developers) that we will present later in these documents. The 7th section will conclude our visualization and the last section will introduce the team that created the website and thank the data visualization team for their support.

Genre's Visualization (Section 3)

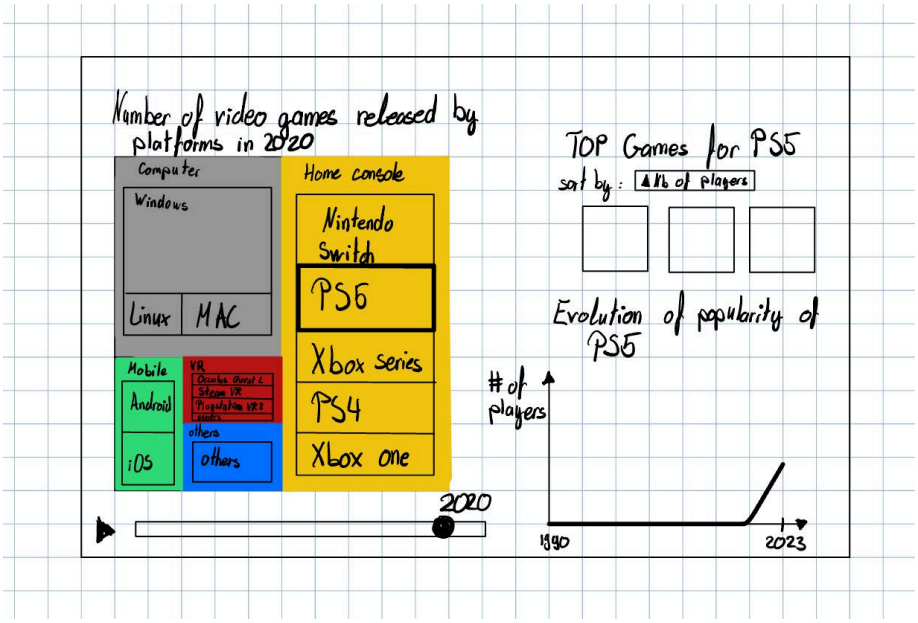


We will use a bar chart diagram to visualize the diversity of genres in a given year, shown on the left-hand side of the diagram. This bar chart shows the number of video games by genre (in a given year), sorted in descending order. The exact number of games released is shown to the right of each bar.
To interact with the graph one can use :

- *Slide bar:* Pick a year between 1971 and 2023 to see the genre diversity of the given year.
- *(Bonus) Play button:* Display an animation of the evolution of the genre diversity over the years.
- *Drop-down menu:* Select the number of genres to be displayed.
- *Clickable bar on the bar chart:* Select a genre to display more information on the right side of the page(here RPG selected).

The right part of the schema first shows a descriptive text of the genre selected. Secondly, it shows a top 3 selection of video games, presented on a podium, for the genre and year selected on the right part of the scheme. This top 3 ranking is determined according to the number of players, the number of games downloaded or the rating given to this game (this criteria is chosen in a picker).
Tools used for this visualization: D3.js to realize the different graphs, the Bootstrap library to divide the screen into two parts.
Lectures: *Perception Colors* and *Marks/Channels* lectures for design colors and general design of the graphs. *Designing viz* and *Do and don't in viz* lecture for the choice of the bar chart diagram (instead of pie chart diagram).

Platform's Visualization (Section 4)

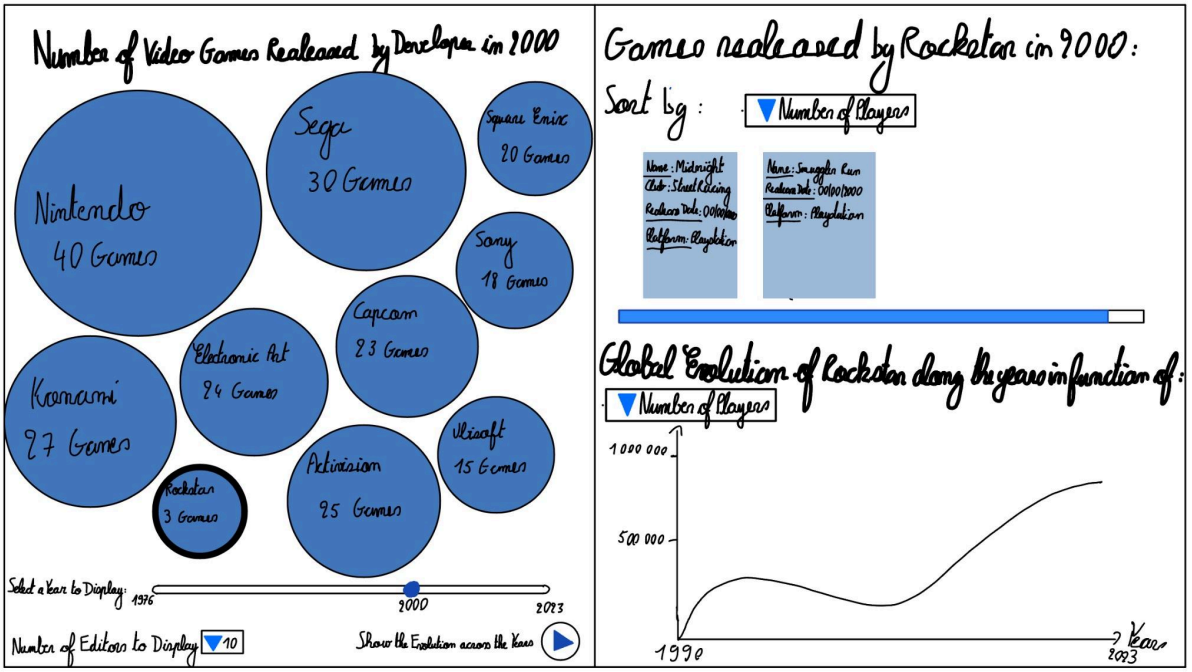


We will use a treemap diagram to visualize the popularity of platforms through the years sorted by the numbers of games that have been released on each platform. We decided to group the platform by different categories of platforms. To interact with the diagram one can use:

- *Slide bar:* Choose a year between 1971 and 2023 to see the given treemap visualization.
- *(bonus) Play button:* Show an animation of the evolution of the popularity of platforms over the time.
- *Clickable items:* Click on item (category/platform) to have more details on it.

The details of the selected item will be displayed on the right-hand side of the page. Where we will display a ranking of the games released on the given item for the selected year and a graphic showing the global evolution of the item through the year. The user can choose different criterias in a picker to measure the popularity.It will be number of players, average rating or number of games downloaded.
Tools used for this visualization: D3.js to realize the different graphs, the Bootstrap library to divide the screen into two parts.
Lectures: *Interaction* and *Graph visualization* for the choice of the treemap representation.(group the platform by categories to have a better idea of what type of platform is popular or not). *D3.js* for tutorial.

Developer's Visualization (Section 5)

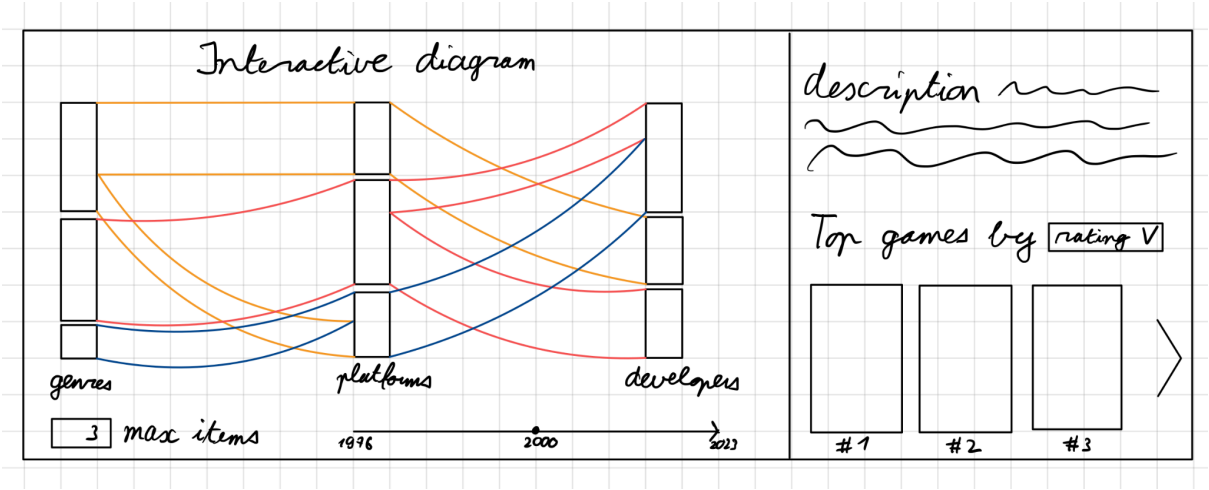


We will use a circle packing diagram to visualize the diversity of developers in a given year ranking by the number of games that they published, shown on the left-hand side of the diagram. Each publisher in the graph has its own circle with the developer's name and the number of games it published in the given year. The more games a developer has published in a given year, the larger the circle that represents the given developer is.
To make the diagram interactive for the user we will use:

- *Slide bar*: Pick a year between 1971 and 2023 to see its developers diversity
- *(bonus) Play button*: Display an animation of the evolution of the developers diversity over the years.
- *Drop-down menu*: Select the number of developers to be displayed.
- *Clickable circles*: Select a developer to display more information on the right side of the page.

The right part of the diagram shows a list of games published by the developer and year selected. There is a slider to navigate in the list of games. And the user can also select the criteria used to classify the games in this list of games (criteria: number of players, average rating, number of games downloaded).
Secondly, the right part of the schema shows a graph representing the global evolution of the developer selected over the years, according to a given criteria selected by the user in a picker (criteria: sum of the number of players for all the games published in a year, the average rating of the games in a year and the sum of the number of games downloaded in a year).
Tools used for this visualization: D3.js to realize the different graphs, the Bootstrap library to divide the screen into two parts.
Lectures: *Perception Colors* and *Marks/Channels* lectures for design colors and general design of the graphs. *Designing Viz* lecture for the choice of the graph(show the importance of a developer by the size of the circle that represents it compared to the other circles).

Interactive Diagram Visualization (Section 6)



We will use a Sankey diagram to display the connections between the different categories which are genres, platforms and developers depending on the year. The given categories are sorted by the number of games released per year.
To interact with this diagram one can use:

- *Input number*: Select the number of options by columns to display.
- *Slide bar*: Pick a year between 1976 and 2023 to see its connections

The user will be able to select/deselect each genre, platforms and developer as he wants. It will also display a maximum of items per column which the user can choose, 3 in this example. The user will also be able to select the year between 1976 and 2023.
At the same time, the right side will display the description of the currently selected genre, platform or developer. In addition, it will display the top 20 games of the genre, platform and developers selected. The top games can be computed by the ratings, the number of plays, the number of wishlists and most simultaneous plays.

Tools used for this visualization: D3.js for the sankey diagram.
Lectures: *D3.js* lecture for a tutorial about D3.js, *Interaction* lecture for the time slider and the selection of items in the genre/platform/developers column.

Remark

The colors and text shown here are for illustrative purposes only and are not definitive.
All clear blue elements (triangle and circle) indicate interactive elements.

Some Extra Ideas

We can try to find an illustration for each video game to present it on the rating podium in a certain visualization, but it is quite a challenge to find an illustration for all video games, especially the old ones.
The play button presented in the genre visualization.