

# Milestone 2

Our visualization aims at presenting the previous head-to-head records of the World Cup teams, the information of each team and each player in the context of upcoming 2022 World Cup. Besides, we are willing to tell you a story of Chinese football. You can follow the progress of our website via [here](#).

## Sketches of the final visualization

On our website, the navigation bar contains four tabs. The first *Statistics* tab provides user with 30 national football teams data. More specifically, the current status of each team, as well as each players data will be visualized here. Comparisons between different teams will also be also implemented, including their relationship among wins, draws and losses, the players abilities in the same position of their teams. The second tab *Story Telling* is designed as a thorough introduction to the history of Chinese football, the current situation and our expectations for future. In addition, we provide you with *Process Book* to see how we process our data, along with *About Us* to introduce us briefly and in case user would like to reach out.

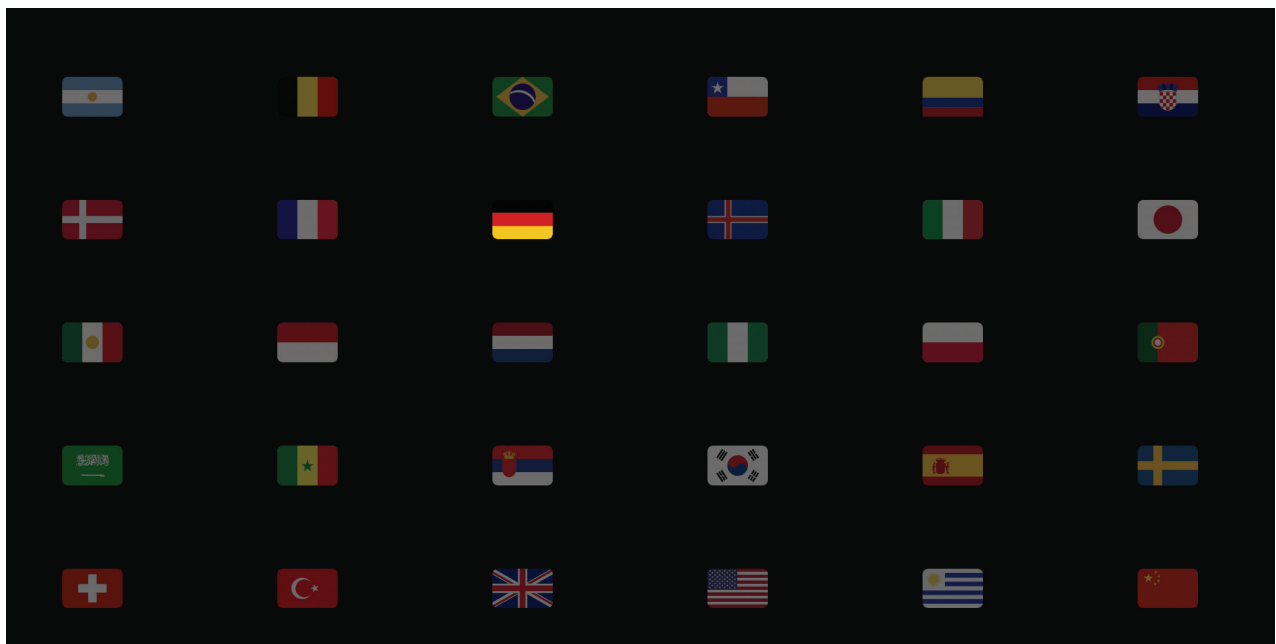


Fig. 1 Selection of 30 National Teams

In *Statistics*, when user clicks on a national flag, it will scroll down to a section, of which a football pitch is on the left side (Fig. 2) allowing user to select different formations. On the right side of the section is the historical match records of the selected team against other teams (Fig. 3). On the football pitch, each yellow point represents a player, and we will upgrade yellow dots to 2D football jerseys containing player positions in Milestone 3.

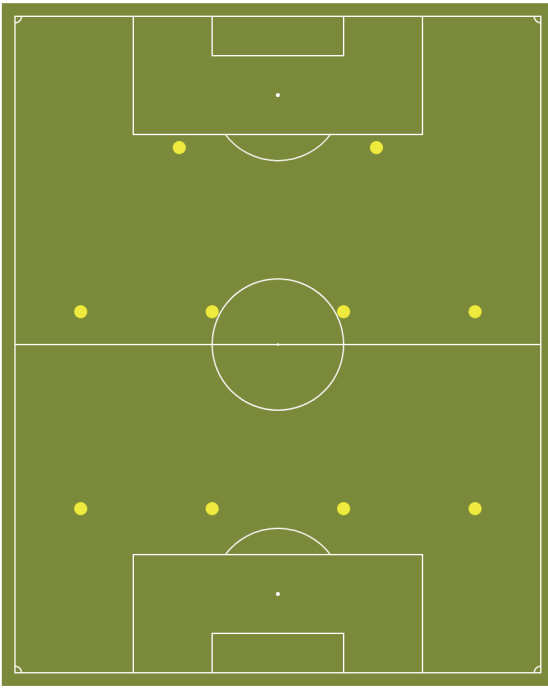


Fig. 2 Different Team Formations

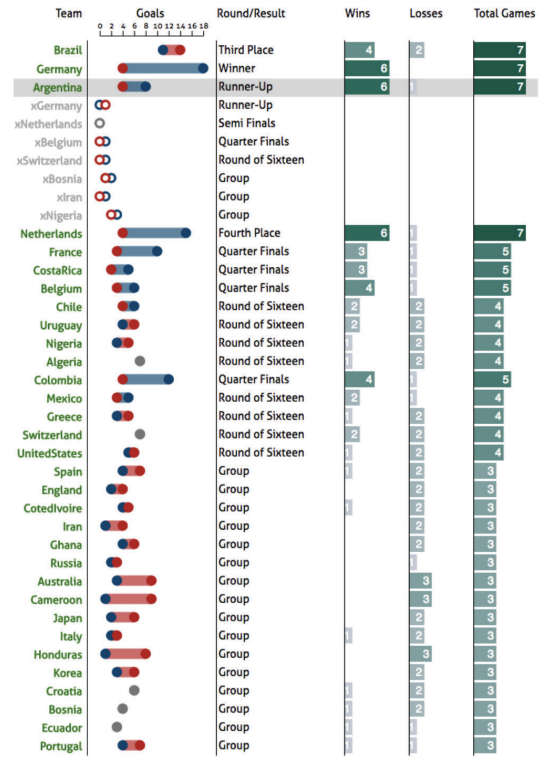


Fig. 3 Historical match Sketch

The specific team players list in Figure 4 is shown below the pitch and the comparison of two players is supportive. The list of players is on the left, while a radar chart aimed at comparing players' abilities from various aspects is on the right. If user would like to compare two teams, there would be two player lists, and user is able to choose one player from each team to see their comparison, as is shown in Figure 5.

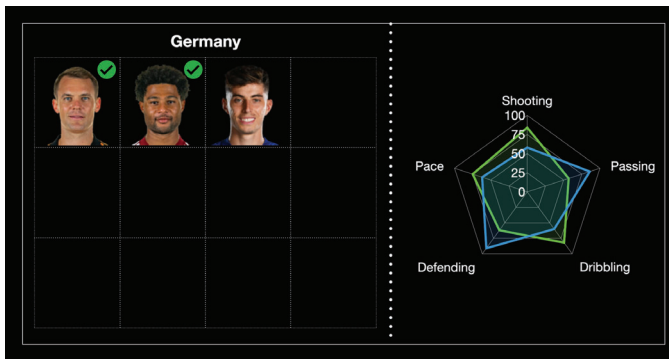


Fig. 4 Statistical Information of Players

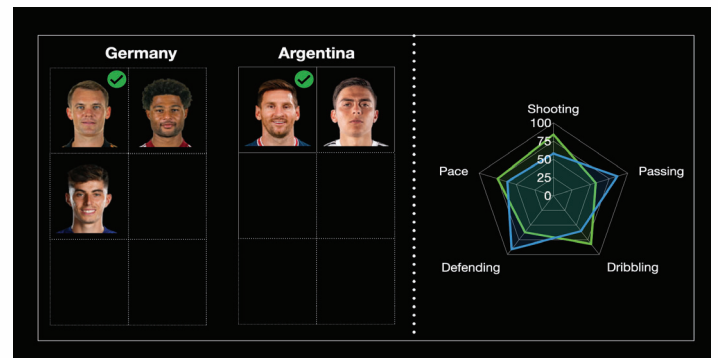


Fig. 5 Comparison of Players between two teams

Figure 6 is the detailed player card we have implemented on our website, where user is able to view player's photos, overall ability value, position, national team number and player's value.

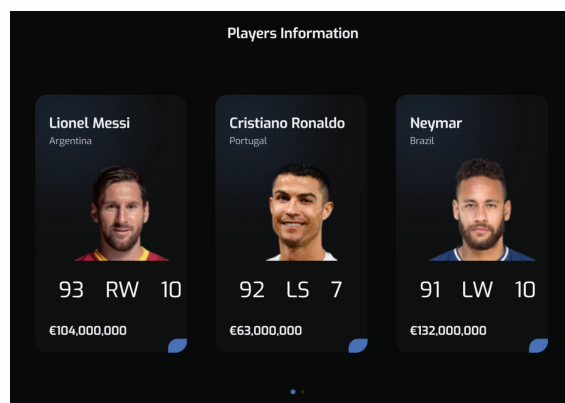


Fig. 6 List of players information in the real webpage

# Tools used for each visualization

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## Website

When building the website, we are using *Syntactically Awesome Style Sheet (SASS)* as our CSS preprocessor, which contains richer features that do not exist in pure CSS, such as mixin, nesting selector, and so on. These features make the CSS structure more readable and easier to maintain. Beside, we are using some external libraries to achieve certain functionalities:

- *MixItUp*: Animated insertion and removal of player card.
- *ScrollReveal*: Scroll reveal animation of each section.
- *Swiper*: Adaption of our website to different devices and platforms.

## D3 Visualisation

- *Country Selection Icon*: user is able to select the corresponding team through 30 national icons provided in first page, which give access to the specific team information.
- *Team Formation Exhibition*: one of the most important visualizations of our website is the exhibition of different team formations. D3 and JQuery are introduced to display different formations of selected team. By clicking the icon in different positions, the information of all players at that position will be displayed in a list.
- *Display of Statistical History Matches*: the results history for nations competing in the world cup will be visualized in the favor of D3
- *Players Abilities Radar Chart*: d3 is used in this radar chart to compare players' abilities in different evaluation dimensions.

## Knowledge From Lectures

Javascript is used to develop our website. D3 library is widely used in many aspects of our visualization, such as displaying team formation, player information and our story telling part. In addition, lecture: *Perception colors* guides us to appropriately use colors for the designing of the website. Finally for the Story Telling section, we'll use lecture: *Storytelling* to help us.

# Independent pieces implementation

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## *Core visualization*

The focus of our visualization is mainly on the first tab of our websites. In this part, 30 national team icons will be displayed for you to choose. After your selection, you will be directed to the corresponding information page of your selected team, where the specific team information will be shown, including the records against teams from other countries and team formations. You can select different formations of the team, and by clicking on the corresponding position, the player information on that position will also be displayed.

What's more, during the process of displaying the specific team information, it's possible for you to select the other country if you wish to compare these two teams. In this case, a comparative structure is developed to contrast the statistics of two teams. Two different lists of players from these two teams will be shown. After selecting two players from each team in the same position, the corresponding data of them will be visualized at the same time.

## *Extra ideas enhancing visualization*

1. A more complex version of results history for nations competing in the world cup with [expected effect](#).
2. An Hierarchical Edge Bundling shows the affiliation relationship of players to their national teams and clubs. Clubs are in the middle and each side consists of 15 national teams.

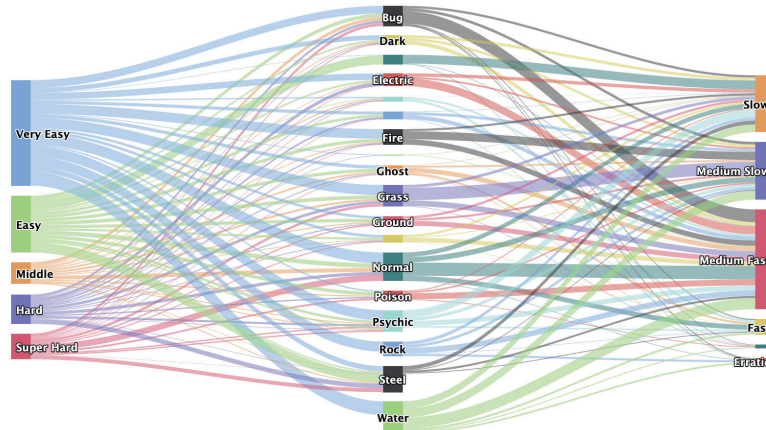


Fig. 7 Equivalent visualisation of affiliation relationship

## Functional project prototype review

Visit our website prototype through the following link:

- [Y3 FIFA Visualization Website](#)