



## *THE BEAUTIFUL GAME*



COM480

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Our original idea with this project was to combine several interesting datasets to create a unique story about football players and their careers. We found large, well-ordered and clean datasets containing football player transfers and events data and football club statistics. Since football is such a huge interest of many people all over the world there exists many different visualizations created from the datasets at hand. However, we got the idea to only explore the datasets from a few hand-picked players. In that way, we had the vision to create a unique deep dive into the selected player's careers using many datasets. The already existing explorations tended to delve into one dataset at a time, we wanted to explore what was to be found when combining several datasets but for a few players instead. With this idea, we started to work towards what ended up as the end result now available.

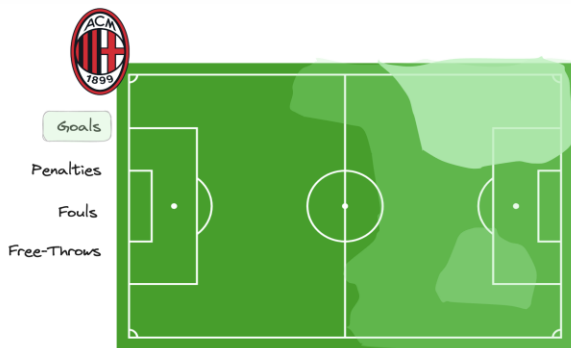
From the beginning much of the work was put into exploring the datasets we had at hand. We could find many visualizations analyzing the player transfers from an economical standpoint, analyzing transfer fees and trades between clubs. We had another idea in mind, we wanted to compare and showcase the transfer patterns from a geographical point of view. Very successful players have transferred between many clubs while some have stayed in the same for the better part of their careers. Some of the questions we had were: Is it possible to see some impacts on the player's performance when coming to a new club or does their performance increase over the years if they stay in one club?

Exploring the football event dataset we realized that the amount of data together with a location on the pitch for every event could be used. We hoped that this could show how the players acted on the pitch. For example, would it be possible to see a pattern for a player independent of the club he was currently in, or did the player's actions change with the club he was currently in?

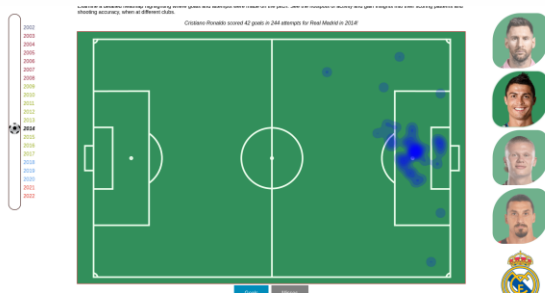
From these ideas and questions, we started to sketch up a website and what features we could build to make it easy, fun, and interesting to use. Our idea was to connect the datasets seamlessly to allow the user to explore statistics and patterns spanning over several datasets. That is when the idea of the “year scroll” and “player selector” was born. We realized that those two features were common over all the data. The decision to let both of those selectors follow along when scrolling the website was made with the hope that the users would see our vision and be able to explore the datasets freely. Our first and largest challenge came with the football events visualization. Here we wanted to make a visualization of where the players were active on the pitch. However, although the data had a location feature it was not precise and some of the event types turned out to miss location. That forced us to reduce the number of event types we were able to display and create some mapping from the imprecise pitch location to an exact coordinate. First, we had to map an imprecise location like “left-wing” into some coordinate corresponding to that location on the pitch. Since we did not want to place all “left-wing”-locations on the exact same spot we created a box for every location type where the single event could be placed arbitrarily. When all events had an exact location coordinate we could map these coordinates to match the image of the football pitch that we use as background. Since we were convinced this was one of the core visualizations on the website we thought it was necessary to do the data wrangling in this case.



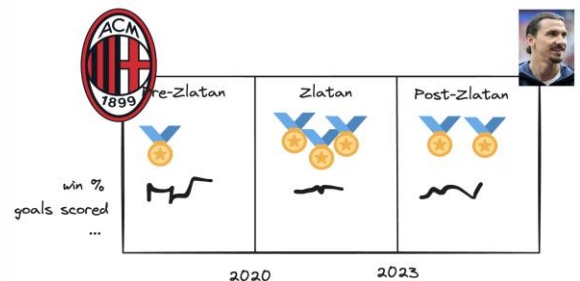
For other aspects of the project, we tried to be mindful of the decisions of what to do and when. In our early discussions, we agreed that this type of project does not have an end. It is always possible to make improvements and add new attributes to the website. Therefore, we wanted to make sure we built the website from the “bottom-up” meaning first adding a simple version of the core functionalities before doing any sorts of improvements. Then by time we could iterate and start to improve the first sketches one by one. For us it was easy to slip away from this and start working with many different things at the same time but without the decision to work strategically, we are sure the result would not be as good.



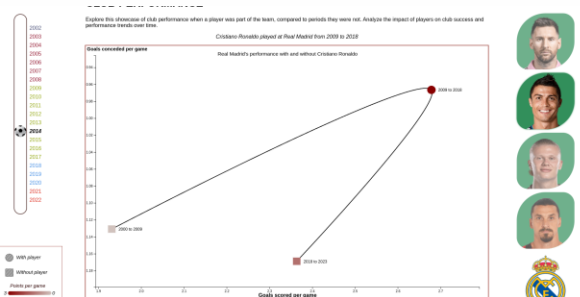
The first sketch of the football pitch visualization.



The final result of the football pitch visualization.



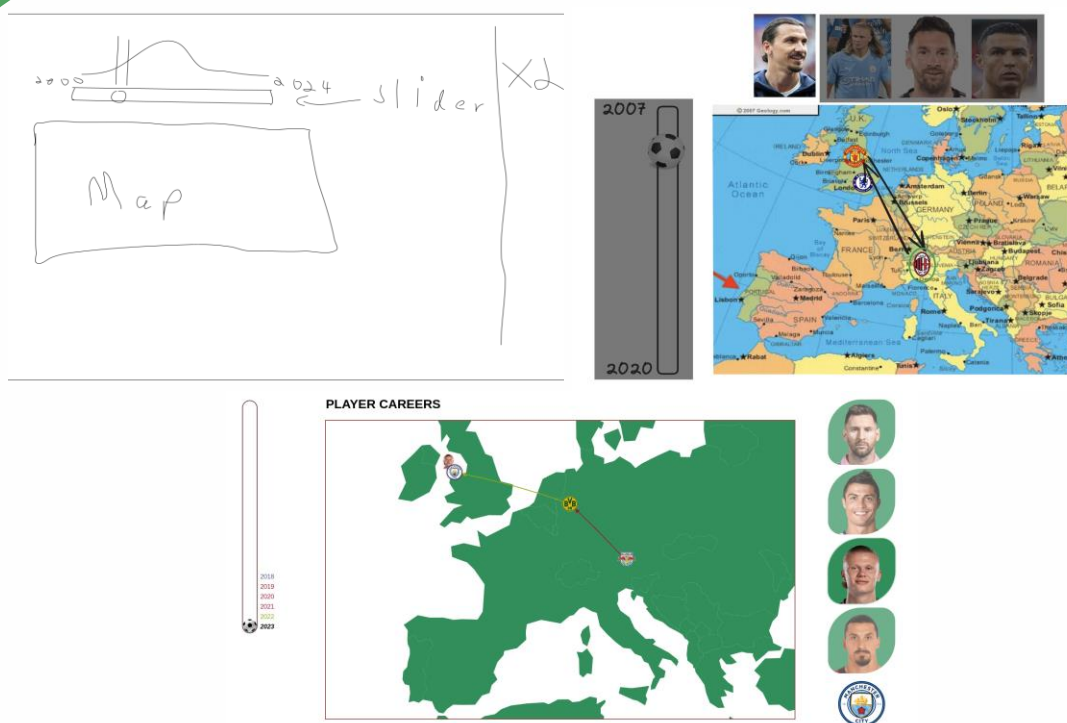
The first sketch of the club progress visualization.



The final result of the club progress visualization. Here we came up with a new idea on how to showcase the performance in different clubs in an interesting way.

As for the first versions of the visualizations we created simple drawn pictures. This was an important step to make sure we all had the same ideas in mind before starting to write code. Without doing this it is likely that every team member has different design ideas which will have to be adapted to the rest of the website resulting in extra work.

The evolution of the transfer visualization is not so significant in terms of how it is working but we could easily improve the visual and interaction aspects of it. The first sketch helped us communicate in the group how we wanted the year slider to appear and be used. With the second sketch, we could improve the first with more details. Here we also discussed some corner cases that we had to handle. For example, all players were not active during the same years and we had to adapt the year slider to that somehow. In the last iteration of the transfer map, we decided to place the player icons to the side of the map and allow them to follow when scrolling down on the page. This made the useability much better and increased the impression of seamless interactions over the whole website.



The evolution of the player career transfer visualization. It started as a very simple sketch where we worked out the overall principle of the visualization. During the development we worked out more and more details which yielded the end result of the player careers visualization.

# Peer Assessment

## Nils Holger Anders Johansson

Explored and manipulated the events data set.

Implemented the heatmap.

Worked on website layout and styling.

Implemented the transfer arrows in the map.

Worked on improving the performance of the website.

## Halvor Linder Henriksen

Explored and manipulated the matches data set.

Explored and manipulated the transfer data set.

Implemented the first version of the scatterplot.

Implemented the map with clubs and players.

Extended the heatmap to separate misses and goals into two colors.

## Arran Øystein Kostveit Gabriel

Implemented the year slider.

Implemented most of the selection and hover logic.

Added the animated time axis and the legend to the scatterplot.

Implemented the progressive player path in the map.

Implemented the player bar on the right side of the screen.