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Part 1:

The purpose of my website is to visualize on an interactive map where in the world players from the top 5 leagues in Europe are born. My website conveys this information through visualization on a map as well as through an interactive graph that appears. The website is interesting and engaging because it allows the user to choose which country they want to visualize. They can choose from England, France, Germany, Spain, and Italy. Then after choosing the country, they can choose to look at the league as a whole or choose a specific team that they are interested in. Besides being able to select from different options, once they select a league or team they can scroll around the map and click on the different circles to see how many players are from that league or country. This lets the user "explore" that map in a sense and look around the world to see where players are from. Finally, the target audience is a sports fan or a soccer fan. They can look at the different leagues or their favorite team and see how many players they have from different countries. Then, if interested they can draw conclusions or make observations based on the map and probabilities. For example, they can say, "Wow the Spanish league has a much higher probability that a player is from Spain than the probability that a player in the English league is English". These kinds of observations are of interest to soccer fans and sports fan in general and this visualization enables this kind of exploration.

Part 2:

- Click link to map. You can either on the nav bar "Map" option or click on the text that says "Click here to go to map"
- Select country from dropdown. Click the left drop down and choose from one of the five countries
- Select team from dropdown. These are automatically populated after selecting a country. Click the right dropdown after selecting country and select a team
- Drag map and click data point. After selecting country or country and team, can drag to scroll around map, zoom in or out, and if you click a circle it has a pop out of the country name and player count
- Hover over graph. After selecting country or country and team, you can hover over a bar in the graph to see a more detailed number of the probability that a player is from that country for the overall league or team

Part 3:

API-Football

- I chose to use it because it had a free subscription tier and it was a comprehensive API that I could use to get team and player information from.
- I used it to get all the teams from a certain country's top division and then populated the team dropdown. I also used it to pull player data from each team and then stored that JSON information.
- It adds the capabilities to pull all the teams for a country and to get players that play for those teams and where those players are from

Mapbox

- I chose to use this API/Library because it had a free tier and it allowed for data visualization layers.
- I used Mapbox for the map and for adding visualization to the map.
- Mapbox adds the map and visualization functionality to the website

Chart.js

- I chose to use this Library because it was an intuitive and well-documented library.
- I used Chart.js to create the horizontal bar graph of probabilities after picking a league or team
- Chart.js adds graphing capabilities and visualization to my website.

Part 4:

On the index page I added the logos for the five leagues that can be chosen so that it isn't as bare and adds more context about which leagues can be chosen. On the map page, I added the graph of the probability because it added the opportunity for more analysis of the data.

Part 5:

During my website I experienced challenges with rate limits and costs of some APIs. I could only call some APIs a limited amount of time for a day without paying, so I had to change my strategy about getting player information and whether to graph by city or by country. Additionally, I wanted to be able to see an individual player name for each circle, but that became too computationally difficult and would cause the website to crash because of the sheer number of players in each league. Finally, choosing a map and visualization library and getting it to work took some work and reading a lot of documentation.