NBA Data Analysis

For our NBA Data Analysis project, we are aiming to create a web app that allows users of our generation to look through the NBA player data and select multiple filters that they want to apply and then input parameters to get a list of players that match the query. This is going to be a data API with a front end. The goal of our web application is to help millennials look through the past and present players of the NBA to find statistics that can help them analyze how players' statistics changed throughout the current era.

Description

We will be building a web application using CSS, HTML, and potentially React. This project is meant to help NBA fans of our generation analyze how the game has changed season by season and see how a player's career went season by season.

We will be looking through all NBA Players from 1996 to the present and doing analysis based on their career stats, the college they attended, the country they're from along with many other metrics. This dataset holds the following variables: 'Player Name', 'Team Abbreviation', 'Age', 'Height', 'Weight', 'College', 'Country', 'Draft Year', 'Draft Round', 'Draft Number', 'Games Played', 'Points', 'Rebounds', 'Assists', 'Net Rating', 'Offensive Rebound PCT', 'Defensive Rebound PCT', 'Usage Rate', 'True Shooting Percentage', 'Assist Percentage', 'Seasons Played'.

Some examples of basic queries in this dataset include filters for stats in a season, height, weight, college, team, and country.

Some examples of advanced queries in this dataset include finding the career stats for a player, finding the college most likely to produce drafted players, and if a player had a hall of fame-worthy season.

Usefulness

This application provides a great use for those looking to explore specific attributes relative to players who played in the NBA from 1996 onwards. There aren't many websites or applications that hold such a composite like this, as we aim to provide an element of analytical inquiry through the attributes that are present in the database. This would allow the user to be able to query for career stats, the college that has produced the most NBA players, and possibly a hall of fame worthy calculator. Having such features allows the user to truly scale the dataset to its fullest potential within their inquiries. Furthermore, our application differs in the sense that there isn't another website that contains all such fields in one place. For example, you may be able to calculate total career stats on one website, but you wouldn't have the ability to look at college, draft year, weight, etc. From this, it is quite evident how our application would be scaled about others thus quantifying its use.

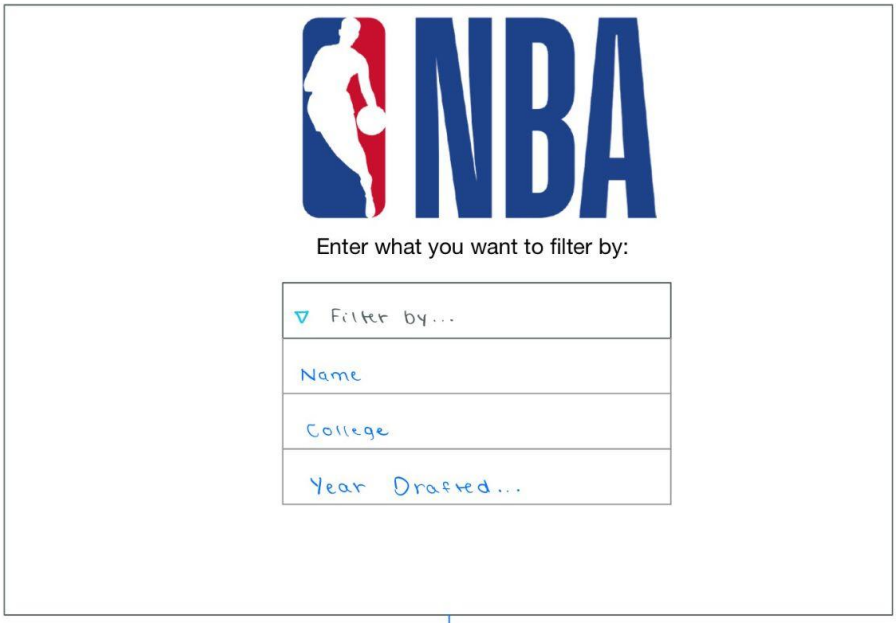
Functionality:

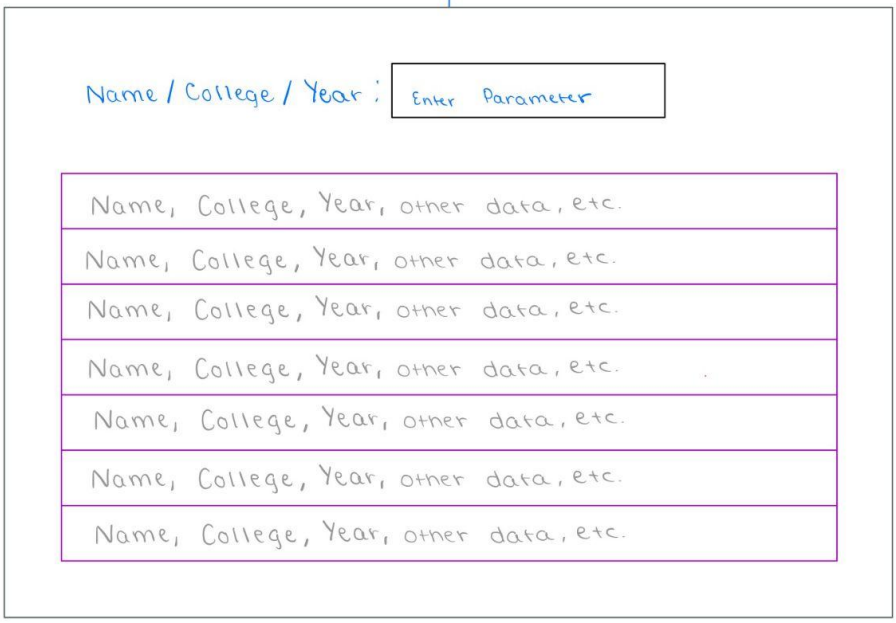
In terms of user interaction, they would be able to leverage the dataset to inquire more about player statistics relative to the dataset. The search function within the application would consist of being able to look for players and their relative data. This would include queries for career statistics, and college ranking in terms of production of NBA players; alongside other college metric calculations such as the frequency concerning Hall of Fame bouts, and a hall of fame calculator for players. The primary function of the application lies within the user being able to leverage the search abilities of our website, as the existing dataset already consists of the total players from the 1996-2019 season. However, users would also be able to update the dataset with newly inducted players from 2019-Present, this would allow for scalability of the application, as it would then cater to the current NBA standings as well. Users could also update based on current player metrics, as this would relate to players who are currently playing in the NBA, as their relative attributes would then be updated. We will also add a trigger that does not allow users to add any players from before 1996 because we want this application to be used only for our generation and we want to keep updating it only for the present players. If we encounter a player that has a start from before 1996 we will remove it.

Realness.

Our data is biometric, biographic, college information, and detailed statistics about all players who played in the NBA for each NBA season from 1996 to 2021. The dataset contains information such as points per game, rebounds per game, and assists per game, and also contains advanced analytical information such as net rating, true shooting percentage, and usage percentage. We got our data from a user on Kaggle who compiled the data from the NBA Stats API.

Low Fidelity UI Mock-up


NBA
Enter what you want to filter by:
Filter by...
Name
College
Year Drafted...


Name / College / Year :
Enter Parameter
Name, College, Year, other data, etc.
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For our front end, we will have our landing page which will allow users to select the filter that they want to apply to the current dataset. After that, the second page will allow us to insert a parameter of what specifically we are looking for and will then output a list of all the players and stats that match our filter and parameter input.

Project Work Distribution

For the Basic Queries, my whole team will end up taking one basic query each, to start with. Next, we will place 2 people, Nishit and Vansh, on the Career stats for a player query since that one seems like it will be the hardest. From there, Havish and Harsha will take the other two advanced queries such as finding the college most likely to produce drafted players or players who had a hall of fame worthy season, and work together to finish those two advanced queries. Lastly, when we are working on the front end we will all be working on that together because we all want to learn a little bit more about front-end development using HTML, CSS, and possibly ReactJS.