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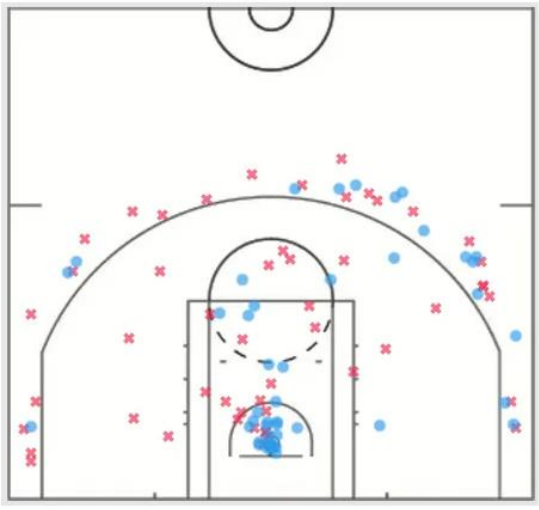
Overview and motivation

The goal of our project is to develop an interactive web application that allows users to compare NBA team statistics for the 2022-23 season. We were motivated by a desire to provide basketball enthusiasts, statisticians, and analysts with a tool that simplifies the comparison of team performance across different statistical categories, thereby enhancing their understanding of and engagement with the sport.

Related work

Beyond the original source of inspiration, our project was significantly influenced by concepts from the Major Qualifying Project (MQP) regarding data analysis/visualization for analyzing the drafting and evaluation of professional sports players. This project highlights the importance of visual analytics in understanding player performance and draft success, leading us to take a more analytical approach when evaluating team statistics.

Additionally, Cristian Valdez's work on NBA shot charts using Python and Tableau introduced us to innovative ways to visualize shot data, inspiring us to explore beyond traditional statistical categories and consider spatial data visualization. These works enhance the potential of data visualization in sports analytics and encourage us to incorporate advanced analytics and interactive visualization into our projects.



Shot Chart for ATL on 3/17/2023

Question

Initially, we tried to answer basic questions like "Which team has the best winning percentage?" or "How do the teams' scoring compare?" As our project grew, our questions became more nuanced, focusing on different statistical categories Correlations between, for example, field goal percentage and winning percentage.

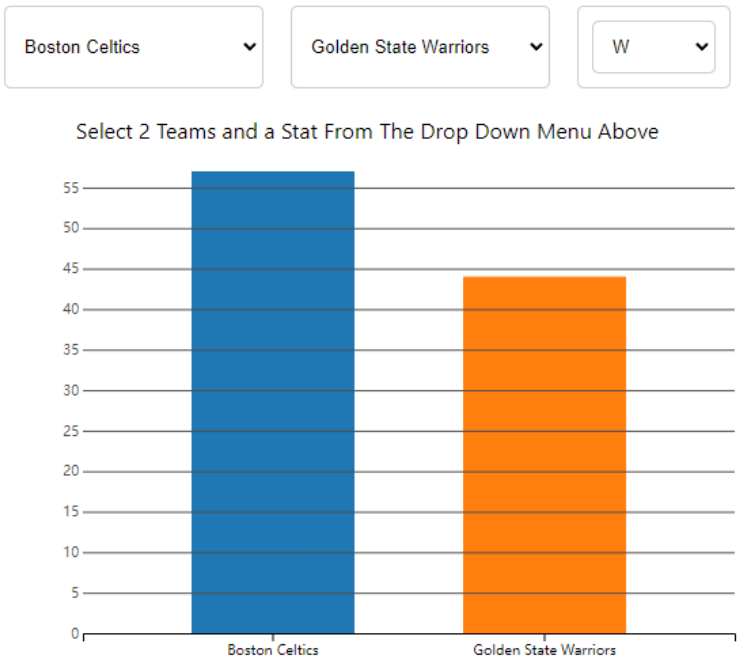
Data

We sourced our data from a publicly available CSV file containing the 2022 NBA team statistics. The data required minimal cleanup, primarily involving the conversion of percentages and numerical strings to float values for accurate calculations and comparisons.

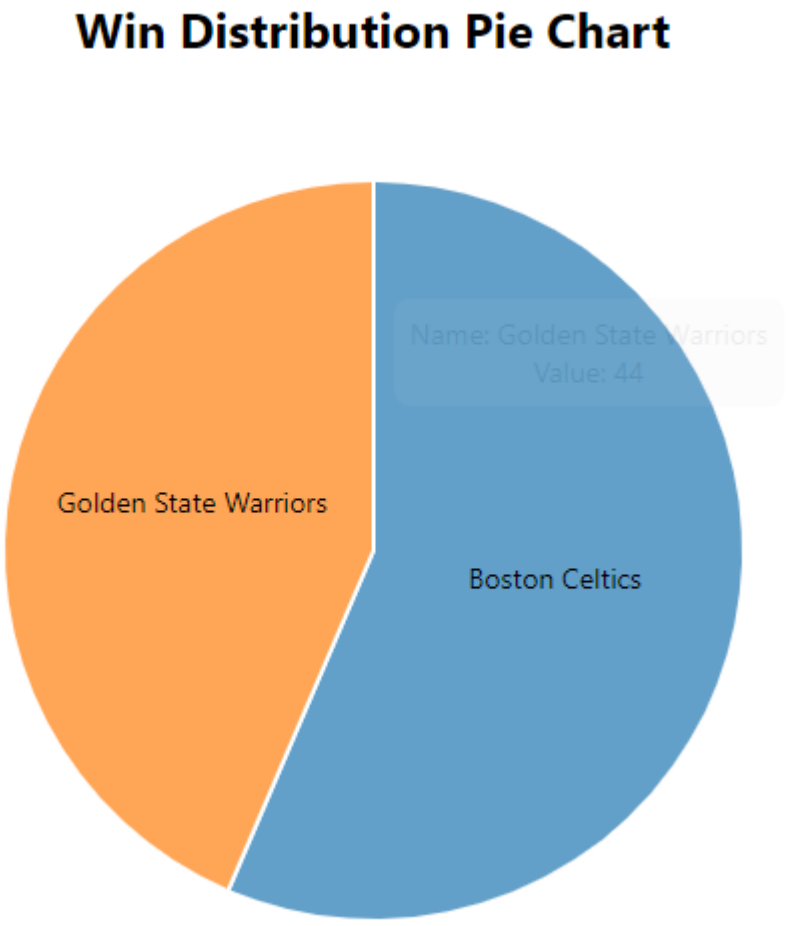
Implement

The final implementation consists of three main visualization components:

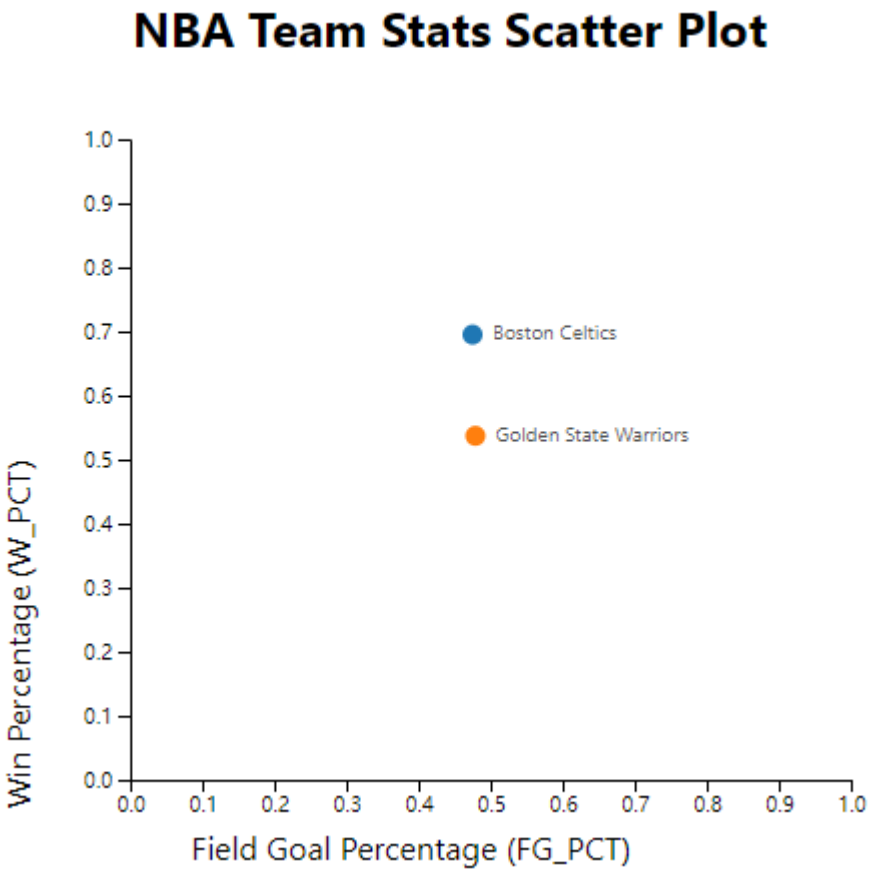
- Bar chart for comparing selected statistics between two teams.



- Pie charts are used to visualize the distribution of wins among selected teams.



- Scatter plot used to explore the relationship between field goal percentage and winning percentage.



Each component is interactive, allowing users to select teams and statistics of interest from drop-down menus. We use React as the application framework and D3.js to create visualizations.

Evaluate

Our visualization successfully allows users to explore NBA team statistics in an engaging and informative way. User feedback highlighted the app's usability and the effectiveness of the visualizations in providing clear comparisons. However, there is still room for improvement, such as incorporating more advanced statistical analysis and expanding the data set to include historical data for trend analysis.