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Assignment 2 Write-up

The Goal of the Project

The goal of this project is to find out who is a better player between Kobe Bryant and LeBron James from a data perspective.

There was some debate about is Kobe better than Micheal Jordan or is LeBron better than Micheal Jordan several years ago, but as time passed by, people gradually realized that their accomplishment is not quite comparable with Micheal Jordan. Then there is an interesting question that arose, although both of them can not exceed Jordan's accomplishment, who is the better player among the two of them? This project will talk about this question by using all the statics of their career to answer several interesting questions and finally find out who is a better player.

The following questions can be answered by the visualization in this project:

1. Who is a better scorer?
2. Who is more stable across the whole career?
3. Who has a better efficiency when making a shot?
4. Who earns more money and is more worthy of his salary?

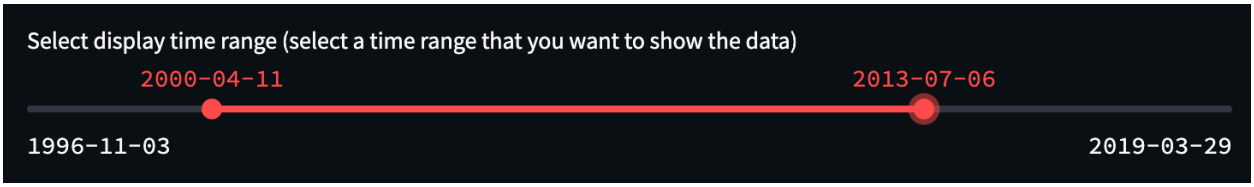
Design Decisions

There is a lot of different kinds of statistics and I wanted to find a visualization method that can show the precise value of each game while giving the users a better intuition about which one is better on a single statistic.

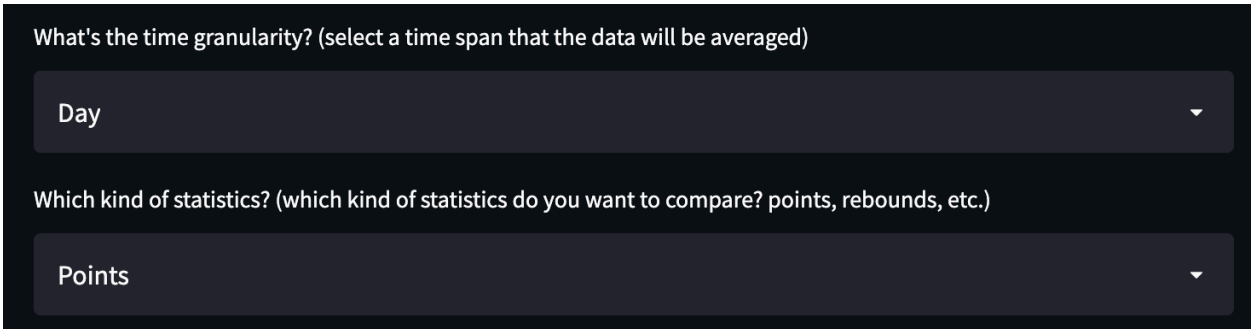
As players have their own peaks and troughs, their performance may be different across the whole career. Besides, a player's performance often fluctuates between matches. To show this fluctuation, users may need to see data from different time spans and in different time granularity. Therefore, I decided to use scatter plots to plot all the data in points while letting users choose the time range and the time granularity.

Users can also choose the kind of statistics they want to compare to get more information about which player is better at what.

To select the display time span in a more intuitive way, I used the slide bar which can choose the upper and lower time bounds as shown below.



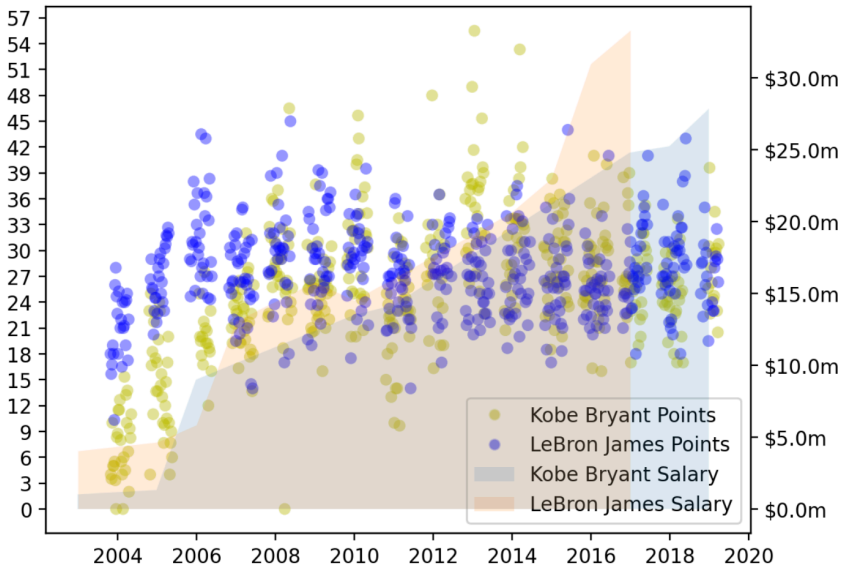
Users can select the type of statistics and granularity using select box:



There is also a critical design decision is that as Kobe and LeBron do not play at exactly the same time (i.e, Kobe started his career 7 years earlier than LeBron), comparing their performance on the same date is not fair (Kobe might have grown to a super start while LeBron was still a rookie). So I gave users a choice to align the career time of these two players. If users choose to align the career time, the visualization will move Kobe's whole career 7 years later so that their career starts at the same time. This might be a little bit confusing as Kobe's first game therefore also started in 2003 instead of 1997 but this kind of comparison is way more fair and informative as we are comparing the two players of the same age.

To see which one earns more money and is also more worthy of his salary, I put their salary in the background of the plot so that users can have a general idea about who earns more while comparing the statistics.

The final visualization that compares their points averaged in a week looks like below:



We can see that after aligning their career time, Kobe's salary is always lower than LeBron's. There is a reason of this is that LeBron has a career later than Kobe and players' salary is generally higher at that time.

And there are several other interesting things. Kobe's points per game are significantly fewer in his early career than LeBron. Besides, Kobe has a larger variance during the season. Kobe is capable of scoring an amazingly high score in some games but also scoring a lot fewer in some other games. LeBron is more stable across his career and also has a stable performance during the season.

Development Process

This takes me about 12 hours comprised of the following parts:

- finding dataset: 4 hours
- going through the APIs of streamlit: 1.5 hours
- thinking about the form of visualization: 1.5 hours
- implements: 4 hours
- writing the write-up: 1 hour