Cade Dannels

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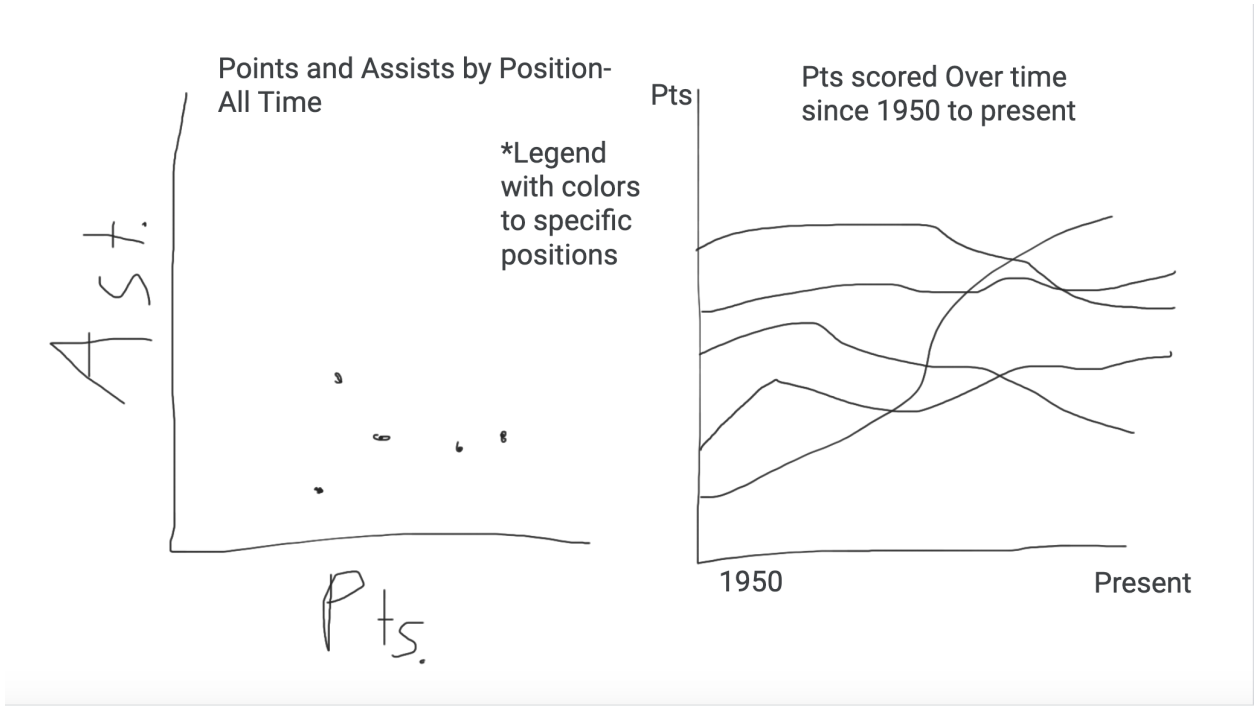
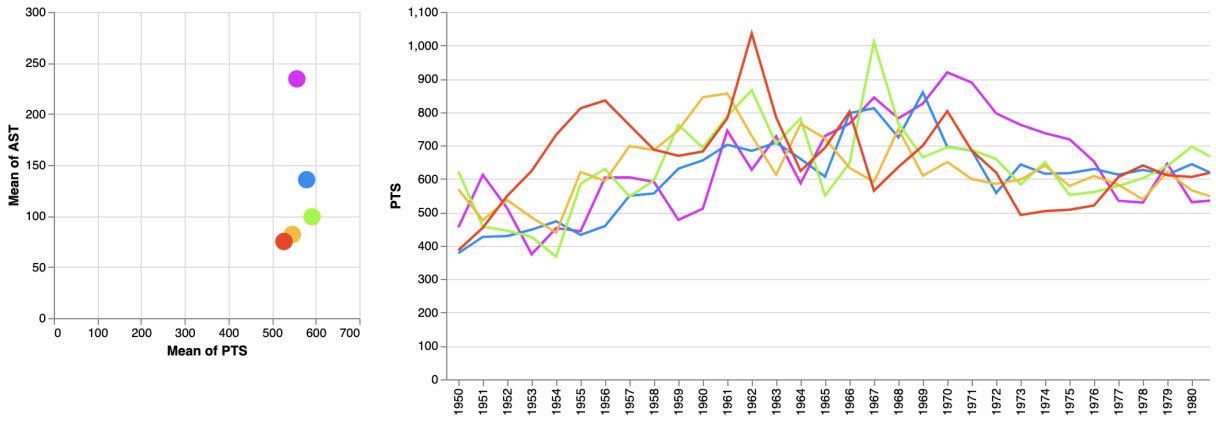
Design Workflow

1. Learning: My question is how has NBA scoring changed over time by position? How has the game changed over time in terms of scoring? As an NBA fan this is an important question that is of great interest to me. Most NBA fans today probably have no knowledge of the answer of this question. I wanted to change that with my visualization.
2. Winnowing: My dataset contains all the statistics on every NBA player's seasons since the 1950s. With this data I wanted to address the problem of looking at how players have scored by position over time as well. I also wanted to see which positions historically score the most. This data will allow me to filter by year as well as position to answer these questions. Here is a link to the data source.
3. Discover: Task 1: I want the user to be able to organize the data by clicking on a data point on the left and having more info about that data appear on a second chart on the right. I am trying to go for a multiple perspective viewpoint on the data. This will allow the user to interact with the visualization which will hopefully make it more interesting and allow them to explore the data in a fun way. Task 2: I want the data to be color coded where each of the 5 basketball positions have their own unique color. This will allow the user to easily distinguish between the data points.

4. 

One tradeoff I realized I have to make with this design is that the graph on the right will be much larger than the graph on the left. The graph on the right has to go from 1950 to 2017, essentially 67 data points on the x-axis, whereas the graph on the left only has 5 data points because it is an average across every year.

5. 

I implemented my visualization using altair. I did a double graph where the graph on the left affects what is shown on the right when it is clicked. I also gave each

position a unique color so that they can be easily distinguished. This incorporates both of my key tasks listed above.

6. Deploy: After deploying my data I noticed that the position who scores the most in the NBA often changes over time. I initially thought that maybe the same position (ex. SF) would consistently score more than the other positions. I was also surprised to see how drastically these positions changed over time. For example, the Center position went from scoring by far the most in the 50s to scoring the least in the 00s.
7. Iterate: If I were to iterate on this data visualization I would try and find out a way to make the graph on the right more visible. Right now the graph is so long that you have to scroll horizontally to see all the data. In my screenshot of the visualization the data only goes to 1990. That is because the entire plot is too large to screenshot in one view. I could potentially change this by grouping by decades so that the data doesn't plot every single year. This change would make the graph much smaller and while it would lose a large amount of information, it would make it much easier to view holistically. This is a tradeoff that I would have to consider if I chose to implement this task.
8. Reflect pt 1: This solution tells me many things about my target problem. It tells me that overtime NBA positions have converged on their level of point production. In the 60s there were large levels of variance between points scored by position, but recently the positions have become much more similar in their levels of points scored. I have also found out that right now the NBA is dominated

by smaller positions. PG, SG, and SF positions are all close at the top with most points scored whereas C and PF positions have a clear dropoff.

9. Reflect pt 2: As a designer I ran into trouble with visualizing data with such a large x-axis, especially when trying to make it a multi-view visualization. The graph is just too long in my opinion. In the future I would hope to correct this somehow. I would need to do more research on altair or maybe just try formatting the data in a different way. I would also like to add a legend in the future so that you can see the positions more clearly, rather than using the tooltip.

Note: To view my visualization go to the code on my github and scroll to the bottom of the jupyter notebook.