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Github: https://github.com/UC-Berkeley-I-School/Project2_Wen_Chen_Ma_Koe

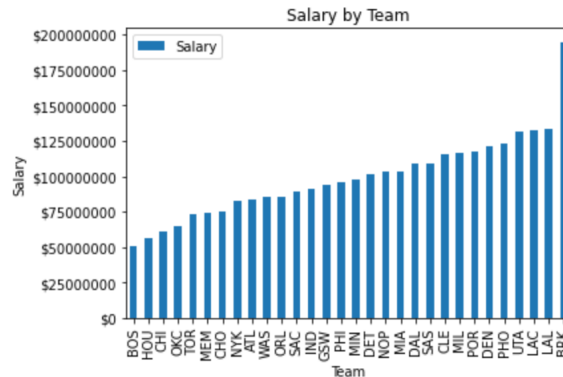
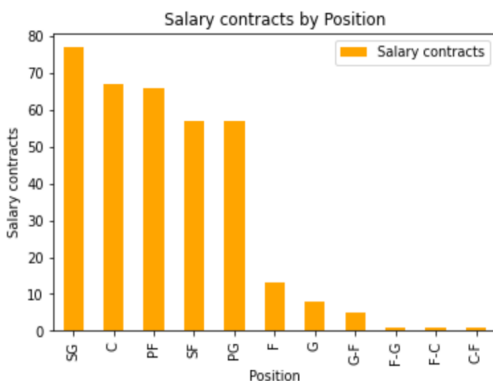
Primary Dataset:

We will be using two primary datasets from BasketballReference.com, [Advanced Player Stats](#) and [NBA Player Contracts](#). We will be looking at datasets from the 2020-2021 season. These datasets will include a wide range of player advanced statistics and salaries.

Supplemental datasets:

The supplemental dataset we will be using is [NBA Player Stats Per Game](#). The data will be used when we look into the specific statistics for a particular position (i.e. Turnover ratio for PG or Total Rebound % for Center). We will use the `player name` column of the supplemental dataset to join on the primary datasets to do the analysis.

Initial plots, figures, or tables:



	Player	Tm	Salary	Pos	TRB	AST	STL	BLK	PTS	TOV	PF	PTS	PER
0	Stephen Curry	GSW	43006362	PG	5.3	6.2	1.4	0.1	29.1	3.0	1.8	29.1	25.1
1	Russell Westbrook	WAS	41358814	PG	10.1	10.5	1.3	0.4	21.8	4.9	2.9	21.8	NaN
2	Chris Paul	PHO	41358814	PG	4.7	8.5	1.4	0.3	16.0	2.3	2.5	16.0	19.7
3	John Wall	HOU	41254920	PG	3.4	6.8	1.0	0.8	20.2	3.4	1.2	20.2	NaN
4	James Harden	BRK	40824000	PG	8.9	11.4	1.3	0.7	26.4	4.3	2.5	26.4	25.2
5	LeBron James	LAL	39219565	PG	7.9	7.9	1.0	0.6	25.4	3.7	1.6	25.4	24.7
6	Kevin Durant	BRK	39058950	PF	7.3	5.3	0.7	1.4	29.0	3.5	2.3	29.0	25.4
7	Paul George	LAC	35450412	SF	6.3	5.5	1.1	0.5	22.5	3.2	2.3	22.5	21.0

Figures we also plan on including:

1. Table of most efficient players in the league (PER/salary)
2. Allocation of salary by position compared to wins
 - a. Assumption: Team that spends >50% of salary on PG and SG then classify them as “Small ball” team
3. By position, x axis: salary and y axis: PER or PPG

Variables to explore:

1. One analysis we want to perform uses the Player Efficiency Rating (PER), to quantify how productive a player is compared to their salary. This will be a ratio of PER:Salary. This will be shown in a sorted table of the league’s most efficient and least efficient players.
2. Another area we want to look at is a team’s allocation of salary. In today’s NBA, there is a big movement toward “small ball” teams. This notion states that the teams are depending on lineups relying on smaller guards’ production rather than traditional, big-man-dominant lineups. Our assumption is that a team that spends >50% of their salary on Point Guards (PG) and Shooting Guards(SG) are classified as a “small ball” team. We want to see how well “small ball” teams perform compared to teams that spend their money in a more evenly distributed fashion.
3. We can take the findings from the 2 conclusions above and look at the players who thrive the most. We can look at different statistics that correlate to different positions (i.e. Assist:Turnover ratio for PG’s or Total Rebound % for Centers). In these scatter plots, we can plot the salary on the x axis and the different statistics on the y axis for each player in that category. An assumption is that players that are the closest to the top left quadrant of the graph would be the ones with the highest efficiency to salary ratio, which makes them more valuable to teams.

Insights to glean:

1. Which players are worth their salary? Which ones aren’t?
2. Should NBA teams be focusing on fielding a team centered around a “small ball” mentality?

3. Within each position, which players are the most valuable for their salary?

Final Report Coverage:

1. Show high level team, player, win/loss comparisons
2. Show the allocations of funds for all teams (specifically teams that win)
3. Recommend how teams should go forward with their signings
4. Highlight players with low PER with high salaries and high PER with low salaries
5. Compare small ball teams to teams who are normal sized (prove or disprove the small ball era)