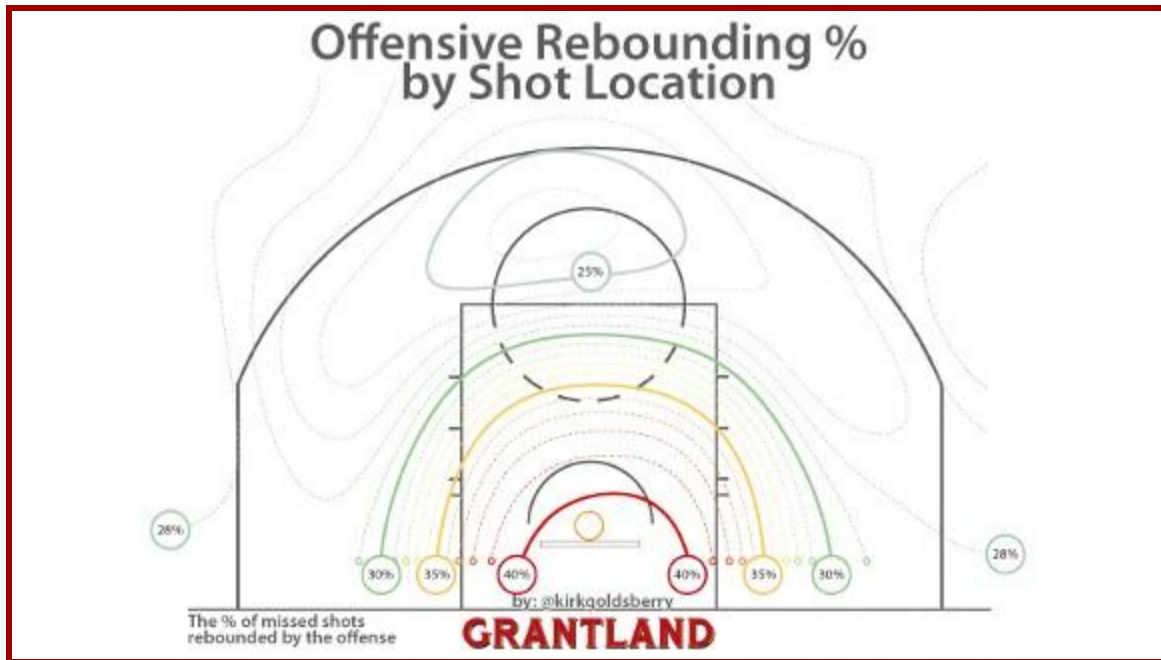# Project Proposal

"Kobe Assist" Calculator

Calculating how many times points are generated by a team off of a players misses per game

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Introduction:

Basketball analytics often emphasizes scoring, assists, and efficiency, but one underappreciated aspect is the value generated from missed field goals — particularly when those misses result in offensive rebounds and subsequent scoring. This phenomenon is informally known as a *"Kobe Assist,"* referring to instances where a player's missed shot leads directly to a scoring opportunity for their team, typically via an offensive rebound and putback.

Objectives:

The aim of this project is to quantify the number of points generated through these *Kobe Assists* by analyzing NBA player statistics using Python.

To analyze player-level NBA data and identify missed field goals.

To estimate how often a player's own missed shots lead to team points via offensive rebounding rate of his team.

To create a visualization of the estimated *Kobe Assists* for top NBA scorers.

To build a modular Python program that can be reused for future datasets or seasons.

Scope:

This project will:

- Focus on current NBA season data.

- Analyze a selected group of top scorers (e.g., Top 10 by PTS).

- Using Object Oriented Programing

- Uses CSV files from basketball reference to get relevant stats through Pandas library

Methodology:

1. **Data Collection**

   - NBA player statistics are read from a `.csv` file. Using `Pandas`

   - Columns such as rank, awards, and non-relevant fields are dropped.

2. **Data Cleaning**

   - Duplicate entries are removed.

   - Missing values are filled with zeros.

   - Only essential columns are retained.

3. **Object-Oriented Modeling**

   - A `Player` class models individual stats and calculates missed shots.
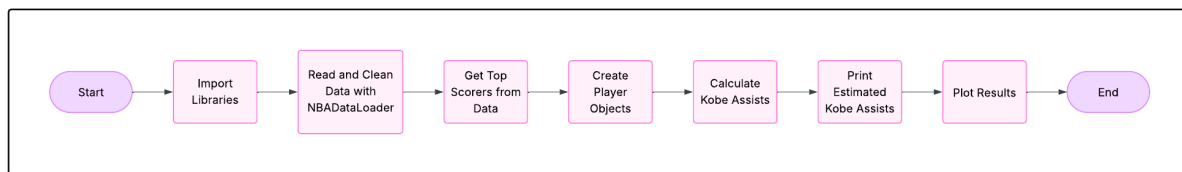   i. Estimated *Kobe Assists* are calculated based on missed shots and offensive rebound ratios.

4. **Computation**

- ○ A `KobeAssistCalculator` class processes the data and returns the estimated points generated from missed shots. Using `Numpy`

5. **Visualization**

- ○ A `KobeAssistPlotter` class creates a bar chart to visualize the *Kobe Assists* for each player using `MatplotLib`

Diagrams and Flowchart:

Flowchart: Start → Import Libraries → Read and Clean Data with NBADataLoader → Get Top Scorers from Data → Create Player Objects → Calculate Kobe Assists → Print Estimated Kobe Assists → Plot Results → End

Benefits:

Highlights an underrated aspect of basketball analytics.

Demonstrates effective use of `Python` for sports data analysis.

Enhances understanding of team contributions beyond standard stats.

Useful framework for future expansion into deeper sports analytics.

Resources:

Software: `Python, pandas, NumPy, matplotlib`

Dataset: NBA Player Stats CSV, Team Stats (from basketball-reference.com)

Hardware: Personal Computer

References:

- Basketball reference

- https://grantland.com/features/how-kobe-bryant-missed-shots-translate-new-nba-statistic-kobe-assist/

- Python documentation

Conclusion:

The **Kobe Assist Calculator** offers a unique perspective on how missed shots can still create value in basketball. By leveraging Python and NBA stats, we aim to present a data-driven look into this phenomenon, encouraging broader discussion in basketball analytics and programming applications. This project not only sharpens technical skills but also contributes to understanding sports data in a meaningful way.