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HIGH LEVEL DESCRIPTION

Our application will:

- Provide a tool for users to query historic NBA games to get statistics of interest or view games of interest
- Let users place virtual bets (fake *money*, real performance tracking) on NBA games for a given day
- Allow users to select variables of interest to generate estimated win probabilities for betting outcomes

DATA SOURCES

The primary data sources for this project will be 1) historic NBA game box scores (statistics) scraped from www.basketball-reference.com, and 2) live sports book betting odds scraped from various sports books.

APPLICATION OVERVIEW

Our main page will contain all NBA games scheduled to be played on that day. For each match, the user will be able to click on a link to take them to a distinct page dedicated for this match.

On this “game page”, there will be a section dedicated to displaying basic statistics for this match. This allows users to compare teams and will be automatically generated for a given matchup. Functionally, it will be very similar to the website screenshot shown.

Further, users will have a wide selection of querying options available to select the variables that they think are influential for outcome of this game. These variables include things like “home court advantage”, “season records”, “points per game”, “record in last 10 games”, etc. From these selections, we will query the database and insert the resulting statistics as features into a simple machine learning model to predict game outcomes. The user can then compare the output of their self-generated model to the betting lines that the sports books are offering, and finally, place bets themselves the matches.

User betting results will be inserted into our database to allow for performance tracking over time, so that users will be able to see whether they truly have what it takes to be successful in the sports betting markets.



The screenshot shows a comparison of team statistics for the Denver Nuggets (DEN) and Philadelphia 76ers (PHI). The Denver Nuggets are listed with a record of 37-17, 2nd in the Western Conference, and the Philadelphia 76ers with a record of 34-20, 5th in the Eastern Conference. The table below compares various statistical categories for both teams.

PHI		DEN
102.2 (7th)	Pace	(27th) 97.6
47.1 (8th)	FG (%)	(7th) 47.2
11.4 (15th)	3PT FG	(17th) 11.0
35.9 (8th)	3PT FG (%)	(T9th) 35.6
77.2 (15th)	FT (%)	(21st) 75.3
47.1	Rebounds	46.3
10.6 (T13th)	Offensive Rebounds	(T1st) 12.2
27.4 (3rd)	Assists	(2nd) 27.5
19.2 (3rd)	Assist (%)	(2nd) 19.6