

Team Members:

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Problem Statement:

For our final project, we wanted to create a small-scale implementation of various NBA statistics such that there could be a sort of centralized application in which users could track their favorite teams, players, and games during the season. Currently, there are different websites, such as Basketball Reference, NBA.com, and ESPN that keep track of these statistics, however in order to customize the specific ones of interest, our database allows users to create an account and make a list of their favorite players and teams so they can access the data with greater ease. Additionally, for those users who were interested in sports betting, our database keeps track of the spread and favored team of each game such that users can view the numbers easily and make their bets accordingly. By aggregating statistics that are found in various parts of the web and allowing users to choose which teams, games, and players to follow, our project makes it convenient for NBA fans to get the latest statistics and betting odds for their favorite athletes.

Solution Statement:

Our solution is to create a database that would contain all facts that an NBA fan, whether they are a casual fan or a diehard fan, would want to know about. Typical statistics include NBA teams, the players on each team, games that teams play including the final score if the game has already been played, the statistics of each player in each game (points, rebounds, assists, etc.), and also the location where each game is played. However, for NBA fans who enjoy betting on games, we wanted the database to include relevant information for each game when bettors are trying to place their bets such as the team favored to win in the matchup and how much of a favorite they are, which is shown by the spread. The bigger the spread is for the favored team, the less money the bettor will win, which is why this is relevant information for them. Hence, the issue of NBA-specific information being spread out over the web is resolved by our database serving as a centralized database for all things NBA.

User:

Typical users of our database are people who are interested in basketball, specifically NBA fans. It would be useful for those who wanted to keep track of specific teams, maybe if they had a favorite team or were trying to figure out which team a specific player is on. Also,

those who wanted to work on projects that involved different player and matchup information would be akin to using this database, as we have that information stored within the different classes of our design. More importantly, the project could definitely be used by people who were interested in sports betting, because we have easy-to-access betting information such as the point spread and the favorite team of each past, present, and upcoming matchup. Even those who make prop bets, which are bets on specific player statistics, would be wise to use our database to track past performances by players to make decisions for their bets.

Domain objects:

With the 'Game' object, we track each individual game that a team plays or will play and gather as much information as we can. For example, we might not list the final score of a game between two teams because that game hasn't been played yet, but you can still gather information about other features of a game. Specific aspects of an instance of a game that we track include the date the game is played, the location of where the game is played, the names of the two teams playing each other, the betting favorite to win the game and how big of a favorite they are (shown by the 'spread' variable, which represents the betting spread), and, if the game has already been played, the number of points each team scored in the game. Tracking instances of 'Game' is important because a major point of the solution, for example, relies on tracking players' performance by game rather than by the overall season (season averages). Tracking individual games also allows bettors to utilize our database for their needs. Overall, the 'Game' object is arguably the most important domain object in our database because it essentially ties in the whole point of our solution.

Another domain object that we created for the overall design is the Player object. This was created to represent a specific NBA player, and has many different relationships with other objects that are integral to the functioning of the project. A player's fields include their first and last name, jersey number, and include two foreign keys: one to the team they play on (one team can have many players), and one to their statistics (one player can have many statistics based on each game they play). These players comprise a team's roster, and a user can add players to their favorites such that they can be easily tracked. Furthermore, the player's statistics can be analyzed for trends that detail how a player has been improving/worsening over the course of a season with regards to their team. The many relationships that the Player object has with other objects makes it quite an important piece of the database, and can be used in itself for the statistical value.