NBA Database

CSS 475 Winter 2019 - Team Avatar
Brandon Posey, Jeremy Tandjung, Nathan Phan, Aaron Handjojo

Introduction

Team Avatar intends to create a basketball database based on the properties of the National Basketball Association. The database will track team and player information, statistics, awards, etc within the current NBA season, which is the 2018-19 NBA season. For the sake of simplicity, this database will only use eight current players from each team based on their minutes per game statistics.

Application

The application is primarily used by NBA teams to determine whether a player is playing well or not. The database could also be used by fantasy league users to see if their current fantasy roster is playing well or not. NBA fans could also look up trivial information of their favorite team and players, such as birthdate, age, height, and many more.

Entities

The following are the entity data types that are in the database

- TEAMS:
    - TEAM NAME:
    - NUMBER OF GAMES PLAYED:
    - WINS:
    - LOSSES:
    - AVERAGE POINTS IN A MATCH:
    - NUMBER OF MEMBERS:
    - CONFERENCE:
    - DIVISION:
    - STANDINGS:
    - DATE FORMED:
    - HOME ARENA:
- ARENAS:
    - ARENA NAME:
    - LOCATION:
    - TENANTS:

    - CAPACITY:
    - DATE OPENED:
- ROSTER:
    - PLAYER NAME:
    - TEAM:
    - POSITION:
    - HEIGHT:
    - WEIGHT:
    - BIRTH DATE:
    - AGE:
    - NATIONALITY:
    - YEARS IN THE NBA:
    - ALMA MATER:
- PLAYER STATS:
    - PLAYER NAME:
    - AGE:
    - NUMBER OF GAMES PLAYED:
    - NUMBER OF GAMES STARTED:
    - AVERAGE MINUTES PER GAME:
    - FIELD GOALS PER GAME:
    - FIELD GOALS ATTEMPTED PER GAME:
    - FIELD GOAL PERCENTAGE:
    - 3-POINT FIELD GOALS PER GAME:
    - 3-POINT FIELD GOAL ATTEMPTS PER GAME:
    - 3-POINT FIELD GOAL PERCENTAGE PER GAME:
    - 2-POINT FIELD GOALS PER GAME:
    - 2-POINT FIELD GOAL ATTEMPTS PER GAME:
    - 2-POINT FIELD GOAL PERCENTAGE PER GAME:
    - FREE THROWS PER GAME:
    - FREE THROWS ATTEMPTS PER GAME:
    - FREE THROW PERCENTAGE:
    - OFFENSIVE REBOUNDS PER GAME:
    - DEFENSIVE REBOUNDS PER GAME:
    - TOTAL REBOUNDS PER GAME:
    - ASSISTS PER GAME:
    - STEALS PER GAME:
    - BLOCKS PER GAME:
    - TURNOVERS PER GAME:
    - PERSONAL FOULS PER GAME:
    - POINTS PER GAME:
- PAYROLL:
    - PLAYER:
    - AGE:

    - SALARY BY YEAR:
    - SIGNED USING:
    - GUARANTEED MONEY:
- SCHEDULE:
    - DATE:
    - LOCATION:
    - ATTENDANCE:
    - START TIME:
    - END TIME:
    - VISITOR/NEUTRAL:
    - VISITOR/NEUTRAL PTS:
    - HOME/NEUTRAL:
    - HOME/NEUTRAL PTS:

Queries

The NBA database will allow any interested party, namly NBA fantasy players, to query information about players and teams to see trends and make predictions about team, and individual performance for the 2018-2019 season.

For example, an NBA fantasy player may query the database to search for every player who currently plays for the Boston Celtics. The Fantasy player may then search for players who are not listed as out or suspended for the season.

The Fantasy player can then search the database with the existing filters to determine which of the players have a higher fantasy point average. The fantasy player can also narrow down the results by querying the database to search for players who have a higher than average projected points for the year.

Data Generation

Team Avatar will use public information provided by basketball-reference.com to populate the database with NBA teams and players. The statistics that are available for each team and player will populate the team and player records. Team Avatar will use basketabll-reference.com as their primary source of data.

Schedule

Milestones for this project largely mirror the project iterations for each of the following assignments. For example, in Week 1 the team is expected to have been formed with project ideas listed.

Our group believes that by Week 2, Team Avatar should have established the team by laws and finished the project proposal.

By Week 3 it is expected that the team has created an Entity Relationship Diagram along with a Relational Schema Model.

It is anticipated that by the end of Week 4, the group members will select a web hosting service and database programming language.

Our group expects to have established the web server, write the preliminary database codebase, and populate the database by Week 6.

By Week 8, Team Avatar expects to have completed development of the website access for the database with documentation and poster.

Work Distribution

With regards to selecting a database idea, our group used elements of Agile development to provide input on entity types and selection. We expect to continue the use of Agile development to establish the relationships and attributes of the various entities. All members of Team Avatar will contribute equally to the voter database application. It’s anticipated that each team member will produce 25% of the work overall; however, discrepancies within individual deliverables are expected.