Motivation

- We are fans of the NBA.
- Wanted to create a working website that others could use.
- Have other NBA fans use our website.
- Work as a team to improve our knowledge of computer science and skill of computer programming.
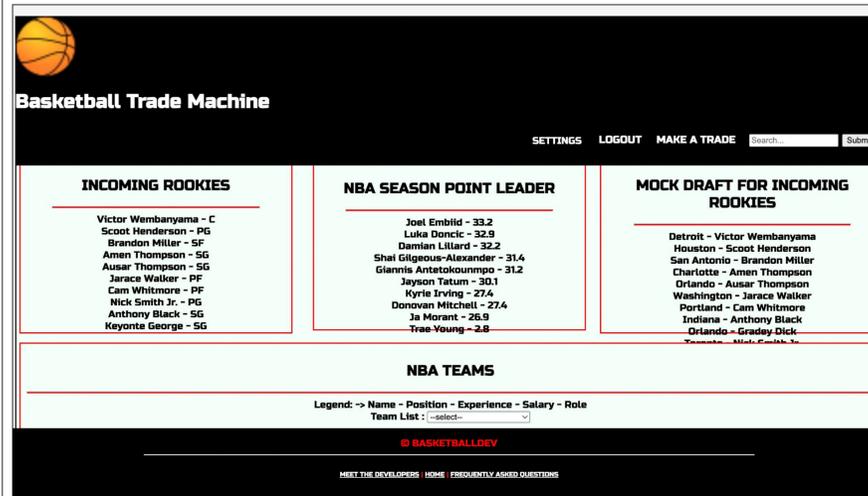
Idea

- Have entire NBA roster working with a database.
- Users can create trades with any team.
- Have a website that is similar to ESPN trade machine and Fanspo.
- When users make a trade they can see the result of who won the trade.
- Influence player value using sites such as:
  - Basketball Reference
  - FiveThirtyEight
  - NBA2k23
- **Formula: GmSc + (+/-) = Player Value**
  - An unique method not found on other sites
  - GmSc definition found below

GmSc - Game Score; the formula is PTS + 0.4 * FG - 0.7 * FGA - 0.4*(FTA - FT) + 0.7 * ORB + 0.3 * DRB + STL + 0.7 * AST + 0.7 * BLK - 0.4 * PF - TOV. Game Score was created by John Hollinger to give a rough measure of a player's productivity for a single game. The scale is similar to that of points scored, (40 is an outstanding performance, 10 is an average performance, etc.).

  - Rough estimate of player box score stats
  - (+/-) is point differential when player on court
    - Values contributions not found in stats
- Other forms of player value found in database
  - 2023 projected value
  - Salary to value ratio
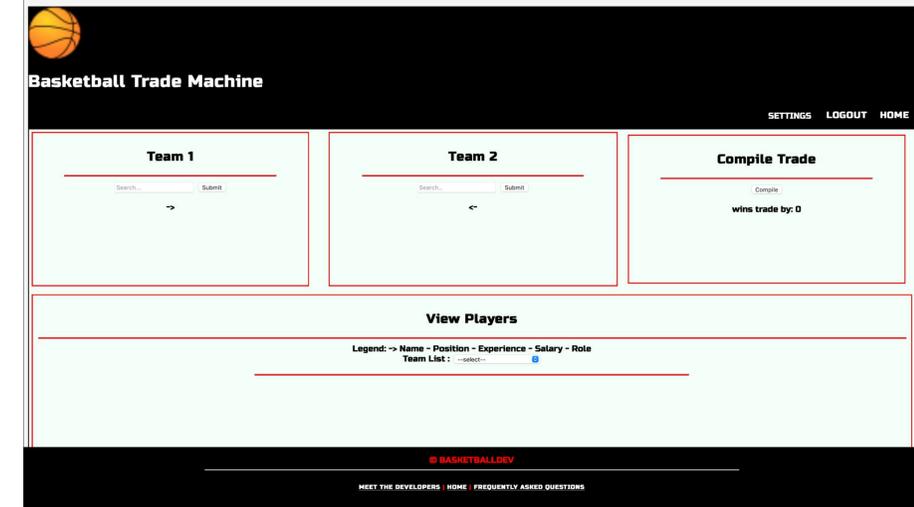 - Low sample size boolean

Background

- Project features: Search Engine, Bulletin Boards, Login / Create Account, FAQ.
- Project Objective:
  - Allow the user to personally trade their choice of player from any team.
  - Search through our database and provide every statistic on each player from their current team.
- User may view teams and players, but has to login to get full access to the Basketball trade machine.

Design

- HTML and CSS were used to create the Front-end aspect of the website.
- Bulletin boards used to display various statistics.
- Search Bars used to allow logged in users to search freely from the database of players.
- Drop-down menus utilized to view specific teams
- Real-time calculations when compiling trades
- Team logos switch depending on team being viewed
- Play roles added to equate numeric values to english

Results

- Learn to work as a team to solve problems.
- Website was made for simple interaction.
- Structured to easily add on additional features
- Trade Page functionality:
  - View players used to find trade ideas
  - Type the players wished to trade in team 1 box
  - Type players wished to get back in team 2 box
  - Compile trade to see advantage

Future Stretch Goals

- Implement color blind settings.
- Add more sports to the trade machine.
- Create individual database for each new team.
- Add unique algorithm to calculate value of draft picks
  - Current draft pick values are used from an existing site
- Allow users to save trades to their profile
- Users comment or likes other user's trades
- Show game scores and/or current standings
- Overall team rankings
- Playoff/Championship odds