**Trust The Process Basketball Database**

**INFO 365 – Database Management**

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11. **Executive Summary**

TTP database is intended to manage players, coaches, and teams, as well as their statistics and their relationships with each other. The information in the database can then be used to generate detailed reports on current and past gameplay and can serve as a credible source of league statistics for potential stakeholders such as fans and the media.

1. **System Analysis**

Being this is a basketball statistic system, there were a few key concerns when trying to implement this topic for this project. First being that we wanted to make it as realistic as possible. We also wanted to make sure the relations were true in nature. The system overall is very close to NBA relations, however, the data may not be the most realistic.

1. **Project Requirements**

The database must be designed and maintained in a way that allows for live data collection, reporting, and access by data managers.

1. **Project Scope**
   1. **In-scope Details**

Data will be collected by the league’s game staff at the games, then entered into the system. The important statistics for each game is then entered into the appropriate entity. Data from important league events, such as contracts and trades, will also be entered as they occur. Every contract signing, waiver, or trade has a protocol in place for data entry.

Each player will have a unique id, first and last name, and position. Player statistics, including points, assists, rebounds, points per game, assists per game, and rebounds per game will also be entered. Similarly, each team will have a unique name and id, and statistics such as the number of wins and losses will be recorded. Season id and champion will be recorded at the end of the season. Lastly, each coach will have a unique id and name, and salary will be recorded.

* 1. **Out-of-scope Details**

1. **Database Design**
   1. **ERD Diagram**



* 1. **Major Entities**

The top entities in this database are players, coaches, and teams, team records, seasons, and stats. Almost all data collection and entry revolves around these major entities. Examples of these data variables include coach salaries, team wins and losses, player points, assists, and rebounds, and many more. While some relationships among the major entities are straightforward (for example, player to team and coach to team), others require ledger-like tables to be kept track of. This is necessary for the league to have continuous success and to be used for comparison and analytics.

1. **Data Integrity Issues**

The data inputted into this database is true for the most part. The database has real names and real teams, and real championship records. However, the points, ratios and some of the other data was made just for the purposes of this project.

1. **Features of Active Database**
   1. **Functionality**

Users will be able to pull up past and current data, including statistics, for each of the players, coaches, and teams. Data managers will be able to update and maintain the current system with real-time data.

1. **SQL Database Tables** 
   1. **How to Use It**

To see how to use the tables, please visit the README document. It shows instructions how how to

* 1. **Brief Description of Triggers and Procedures**

1. **Procedure** most\_paid\_coach\_details: This procedure gets a list of the 3 most paid coaches in the game of basketball.
2. **Procedure** players\_with\_most\_assists: This procedure gets a list of the players with the most assists in the game.
3. **Procedure** players\_with\_most\_points: This procedure gets a list of the players with the most points in the game.
4. **Procedure** players\_with\_most\_games\_played: This procedure gets a list of the players with the most games played overall in the season.
5. **Trigger** STATS\_PPG\_Before\_Update: This trigger updates ppg value based on points and games Played
6. **Trigger** STATS\_RPG\_Before\_Update: This trigger updates rpg value based on rebounds and games Played
7. **Trigger** STATS\_APG\_Before\_Update: This trigger updates apg value based on assists and games Played
8. **Procedure** best\_records: This procedure retrieves a list of the teams with the most wins in one season.
9. **Procedure** worst\_records: This procedure retrieves a list of the teams with the most losses in one season.
10. **Procedure** top\_ppg: This procedure prints the top 5 ppg of the latest year.
11. **Procedure** top\_apg: This procedure prints the top 5 apg of the latest year.
12. **Procedure** top\_rpg: This procedure prints the top 5 rpg of the latest year.
13. **Function** divide is used to calculate per game averages by dividing. It was made as an abstraction so if we ever decide to use a new formula to calculate that metric we don't have to go and change all the triggers
14. **Work Breakdown**
    1. **Author Distribution**

For this project, I think every student had an equal share of the work that went into this project. Every student worked on their individual stored procedures and triggers. Other than that, we all contributed equally to all the major components of the project. From the diagrams, to the SQL files, to the other major components such as this write up, we all had an equal part and say. We did bug fixes for each other, and so forth to keep each other’s works in check.

1. **SQL Code Included with Description of Files**

The following files were included with the overall project along with their descriptions are listed below:

1. Create.sql - This script creates the 9 tables required for the database. The Tables are named Coach, Team, Season, Team\_Record, Player, Stats. At the top of the script there are drop statements to drop the tables before creating them to avoid errors.
2. Insert.sql - This script contains insert statements to populate all tables in the database.
3. Procs.sql - This script creates all procedures and triggers for our database. The script doesnt spool a file, but there are comments within it to explain what each procedur does.
4. Autorun.sql - This script runs automatically runs through all set up and cleanup phases. Output will be spooled to autorun.lst
5. Test.sql - This script contains several sql and pl/sql statememts that test all procedures and triggers created with the Create\_Procs.sql script.

6. Cleanup.sql - This script deletes all tables, procedures, functions and triggers for the pickup database.