**Basketball DB Management System - project description**

**By: Shaked shoshan, 208140111**

**Database Description:**

Our basketball database system is a comprehensive and intricately designed relational schema tailored to manage various aspects of the basketball ecosystem. Covers a wide range of entities and comprises relations, including Players with personal info and achievements, Coaches with profiles and team links, Referees with assignments, Stadiums with details, Leagues with formats and teams, Countries with links to teams/players, Cities for location insights, Games with team scores, Teams with profiles, Fan Base for engagement data, Standing Table for team rankings, and Injuries tracking player health. collectively providing a comprehensive system for managing, analyzing, and enhancing all aspects of basketball operations and experiences.

**Entities:**

1. **Countries**: This table stores information about different countries related to basketball, including their names, capacity, and continental affiliation.
2. **Cities**: Information about cities, including their names, capacity, and the country they are associated with.
3. **Stadiums**: Contains data about stadiums, including their addresses, seating capacity, and the city they are located in.
4. **Human**: This table represents individuals associated with basketball, including players and coaches. It includes attributes like names, height, birthdate, salary, and their connection to countries and cities.
5. **Coaches**: Information about coaches, including the number of trophies they've won. References the **Human** table.
6. **Teams**: Stores data about basketball teams, including their names, budget, number of players, trophies, coach, stadium, and city.
7. **Players**: Information about basketball players, including their average statistics, position, trophies, and their association with teams and humans.
8. **Referees**: Contains details about referees, including their organization, rank points, and references to the **Human** table.
9. **Season**: Represents different seasons of competitions.
10. **Competition**: Stores data about basketball competitions, including the number of teams, winner's prize, associated country, and season.
11. **Trophy**: Information about trophies awarded in basketball, including their names, cost, and whether they are collective or personal trophies.
12. **Games**: Contains information about basketball games, including the date, stadium, teams playing, and referees officiating.
13. **Score**: Records the scores for basketball games, including the scores of the home and guest teams.
14. **StandingTable**: Keeps track of team standings in various competitions, including their points.
15. **FanBase**: Stores information about the fan base of basketball teams, including fan count, loyalty rating, and average money spent.
16. **Injuries**: Records player injuries, including the injury name, return date, and the player affected.
17. **PlayerTrophy**: Represents trophies won by players in different competitions.
18. **CoachTrophy**: Stores trophies won by coaches in various competitions.
19. **TeamTrophy**: Records trophies won by basketball teams in different competitions.
20. **competitionTrophy**: Keeps track of trophies awarded in specific competitions.

**Queries:**

1. List the players who have won individual trophies along with their names and trophy names.
2. List the competitions held in a specific country during a certain season.
3. Find the average fan count and loyalty rating for each team.
4. select all players on the specific team (roster).
5. List the top 3 countries with the highest total budget across all their teams.
6. Retrieve the cities that have at least two teams competing in a specific competition.
7. Calculate the total number of trophies won by each country's teams.
8. Calculate the average number of players and the average budget per team in each country.
9. Find the players who have an average rebound above 8 and have won more than 2 personal trophies.
10. List the cities that have hosted at least 3 games and have an average ticket price above 10.

**Triggers:**

1. check if team in competition on same country, if country in competition is null so it is global competition.
2. check coach availability.
3. calculate profits from games.
4. check if player in legal age.
5. check teams and referee availability by date.
6. check teams for same competition.
7. check for "collective" trophy for team.
8. update number of players after add new player to team.
9. after delete player, if he had team so reduce by 1 the player count in the same team.
10. before delete a team Set the team id of players to NULL.
11. before delete coach.
12. before delete city.
13. after update competition winner prize, recalculate team budget.

**Procedures:**

1. set a score, total people arrived and point in table and update the points in standing table.
2. team winning a competition – insert trophy to players, team and coach, add to counter, increase fanbase and budget.
3. transfer money between teams.
4. player transfer, update money transfer between teams and players count in both teams.
5. find available referees in a specific date.
6. see a standing table by competition.
7. transfer coach, and the money transfer between teams.
8. update player stat.