![Toronto Metropolitan University logo]

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Project Title: Soccer League Database Management System (DBMS)

Introduction

The Soccer League Database Management System (DBMS) is designed to manage and track information for one or more soccer leagues. The system will serve league teams, coaches, and administrators by maintaining records of teams, players, matches, seasons, and standings. The primary goal is to streamline the processes of scheduling, team management, and performance tracking, while also providing statistical and historical data to enhance decision-making for teams, managers, and players.

This DBMS ensures efficient data handling and reporting for users, allowing them to view, modify, and manage critical information about the leagues operations. The system will also include functionalities for querying match results, player statistics, team standings, and more.

Expected Information from the System

Our Soccer League application will provide the following key information:

1. Team Standings and Performance Metrics
   - View each teams standings, including the number of points, wins, losses, draws, goals scored, goals conceded, and remaining matches.
   - Track performance statistics such as yellow/red cards, the number of trophies won, and team history, including expected goals (XG).

2. Player Details and Statistics
   - Access player details such as player ID, name, position, and associated team.

- View player performance statistics, including goals, assists, yellow/red cards, passing accuracy, and overall ratings.

3. Match Schedule, Referee Information and Results
   - Review all scheduled matches with home and away teams, match dates, locations, and final outcomes.
   - Information about referees assigned to each match will be based on match importance and referee ratings.

4. Season and League Information
   - Track performance and statistics for each team in every season, including season start and end dates.
   - Information on leagues, including league ID, name, type (national or regional), and association with seasons.

5. Team Standings
   - Display team standings based on match outcomes, including points earned, wins, losses, draws, and goal differences for each season.

6. Coach Information and Statistics
   - Manage coach data for each team, including statistics such as win percentage, number of trophies won, and updates during coaching transfers.

System Functions

The system will support the following core functions:

1. Player Transfers
   - Facilitate player transfers between teams during the summer and winter transfer markets.

2. Player Insertion
   - Insert new players into the system with full details (name, position, team) and update player stats after each match.

3. Match Scheduling
   - Schedule new matches with home/away team details, match date, time, location, and eventual outcomes.

4. Referee Management
   - Assign referees to matches based on match importance and the referees rating, which is calculated from their performance in terms of yellow cards, fouls, penalties, and accuracy.

5. Automatic Standings Updates
   - Automatically update team standings after each match, reflecting updated stats like points, goals scored, goals conceded, and other performance metrics.

6. Coach Assignment
   - Assign and update coaches for teams, with the ability to track coaching transfers and coaching performance statistics.

7. Data Viewing and Reporting
   - Provide users with the ability to query and view information on teams, players, match schedules, results, standings, and league/season information.

Application Features and Benefits

1. Centralized Data Management
   - The system enables administrators to manage all soccer league data efficiently in a centralized database, reducing manual errors and duplication.

2. Automated Standings Calculation
   - Team standings are automatically updated based on match results, with points assigned based on a predefined system (e.g., 3 points for a win, 1 point for a draw).

3. Historical Data Storage
   - The system stores historical match data, player statistics, and team standings, providing comprehensive data for future analysis and strategic planning.

4. User-Friendly Queries
   - Users can easily query and retrieve data such as top goal scorers, player stats, team standings, and match results using intuitive search and filtering options.

Conclusion

The Soccer League DBMS offers an efficient and comprehensive solution for managing soccer league operations. By automating essential processes like match scheduling, standings calculation, and player performance tracking, the system enhances operational efficiency while providing valuable insights for league administrators, managers, and coaches. The database will serve as a robust tool for supporting various reporting and analytical needs, allowing users to monitor, evaluate, and improve the performance of teams and players over time.

This application is an essential tool for modernizing the administration of soccer leagues and optimizing team and player performance tracking.