Database Final Project

Written Assignment

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The final project is based on a database system saving information about European football leagues among their corresponding teams, players, and coaches. The topic was chosen because Spain is my native country, where most people have a football culture. Generally, all European countries have football as the primary sport; people do not usually watch other sports. I started watching football at the age of 6. As one of my passions, I thought it would be interesting to make it my main topic for this final project, where I will reflect on my Database Design, the SQL that conforms to it, and four different case scenarios in which my database can be helpful for football coaches, league administrators, team presidents...

My database schema consists of seven tables named League, Team, Coach, Player, Match, MatchStatistics and PlayerStatistics. Overall, my database schema stores information from every major league. Every league has its coaches, teams, players, matches, players and match statistics. However, even though they are in different leagues, the information must remain accessible for coaches or team presidents from different leagues since players get transferred during summer or winter breaks.

The reason why player and match statistics were included is because there is one competition besides the national league where teams have to play against other teams from different countries. This competition is called the Champions League, which is the most popular competition of the year. Therefore, coaches need to be able to analyze other team statistics in their own leagues to prepare their tactics when they face them. Player statistics not only help team presidents look for new talents to sign, but it also helps coaches to know who could be the most dangerous players of the team that they will face.

Database Tables

The League table contains LeagueID as a primary key; it also contains the name of the league(LeagueName), the country in which it is played(Country), the year in which it was founded(Founded Year), and the number of teams within the league(NumberOfTeams). The League table is linked by the team table through the LeagueID key, which helps to know what teams are in the league and the number of teams in the league.

The Team table is identified by the primary key TeamID; it stores information about each team, including the name of the team (TeamName), the name of their home stadium (StadiumName), the capacity of their stadium (StadiumCapacity), and the city where they are based (City). The LeagueID serves as a foreign key and links each team to the league where they play.

The Coach table uses CoachID as the primary key and stores the first and last name of the coach (FirstName and LastName), the year when the coach was born (DateOfBirth), and the nationality of the coach(Nationality). The coach table is linked to the team table by the key TeamID, which is a foreign key that associates each coach with a specific team in the Team table.

The Player table has PlayerID as the primary key. It contains details about each player, including their first and last name(FirstName and LastName), the position that they play more often(Position), the year in which they were born(DateOfBirth), the country where they were born (Nationality) which is not necessarily the same as the country of the league that they play for. Their market value lets other teams know the transfer price (MarketValue). The TeamID is a foreign key that links each player to a specific team in the Team table.

The Match table uses the primary key MatchID and stores details about each match, including the IDs of the home and away teams (HomeTeamID and AwayTeamID), the date and

time of the match (DateTime), and the stadium where the games are played (Stadium). The

HomeTeamID and AwayTeamID are foreign keys linking to the Team table; it is also linked to

the MatchStatistics table.

The MatchStatistics table uses StatisticID as a primary key and stores statistics about

each game, such as the number of goals scored by the home and away teams (HomeGoalsScored

and AwayGoalsScored), the possession percentages (HomePossession and AwayPossession), and

the number of shots on target by each team (HomeShotsOnTarget and AwayShotsOnTarget). The

MatchID is a foreign key that links each set of match statistics to a specific match in the Match

table.

Lastly, the player statistics table, identified by the primary key StatisticID, stores

statistical data for each player in each match, including the number of goals scored

(GoalsScored), assists made(Assists), and yellow and red cards received (YellowCards and

RedCards). The PlayerID and MatchID are foreign keys that link each set of player statistics to a

specific player in the Player table and a specific match in the Match table.

SQL Queries

A total number of four cases were built for my SQL Queries in order to demonstrate the

functionality of my database system.

Case 1. This case shows a scenario designed to help find a promising young talent. A

coach and club president are looking for a young Spanish player. Since the league is from Spain,

it will make the adaptation quick, as foreign players have a more challenging time adapting to

the culture and language of the country and the league that they play for.

Case 2. In case 2, I created a scenario for a Champions League game where a team will face Manchester City at their stadium with their fans. Therefore, the coach and their team need to analyze some statistics that Manchester City has had playing at home during the season.

Case 3. For case 3, I have simulated a scenario from the perspective of the World Cup organization wanting to host the final in Spain. Therefore, they need a stadium with more than 100,000 seats. Currently, there is only one stadium in Spain that will be able to host more than 100,000 seats for the next World Cup in 2026.

Case 4. In case 4, I have simulated a scenario for a team that is full of young players and needs veteran players to help the youngsters develop, bring more experience to the dressing room, and help them manage new situations. Therefore, this query looks for a player who is over 30 and has had an essential impact during his career.

The goal of my database system is to help different positions within European football. My database is helpful for coaches, team presidents, and players to improve in all aspects of the game and the overall performance of the team. My database system can still be improved by adding more information, such as attempted shots, the amount of money a team can spend, or amount of trophies a team has. This would be a more extensive database that would bring more significant benefits. For now, my project has shown the main functionalities of the database tables by demonstrating different scenarios that can help during real-life situations in the football world.