PROJECT REPORT
DATABASE MANAGEMENT SYSTEM
CS315A
ENGLISH PREMIER LEAGUE

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Introduction:

English Premier League is a football league where 20 teams play against each other in league format. A win earns three points, draw one point and loss 0 point. At the end of season, the team with most points is declared winner. Our database supports storage of English Premier League data.

In our database, we are showing only 3 clubs and we show demo of 1 season and its completion.

Database Schema:

Our Database contains 7 entities, 17 relationships between them.
ER Diagram :

ENTITIES:

Club, Player, Season, Stadium, Referee, Match, Manager

RELATION TABLES:

CLUB_MANAGER, CLUB_ASST_MANAGER, CLUB_STADIUM,CLUB_PLAYER, SEASON_CHART, MATCH_IN_SEASON, SEASON_CHAMPION,PLAYING_CLUBS, MOTM, MATCH_REFEREE, GOALS,BOOKING, LINEUP,SUBSTITUTION,CLUB_STATS, PLAYER_STATS, TRANSFER

DATA INSERTION:

1. **Players**:- Description of each player playing in the English Premier League.
2. **Club**:- Clubs of the Premier League.
3. **Season**:- Details of all the season.
4. **Stadium:-** stadium details.
5. **Referee:-** Referees details.
6. **Manager**:- Manager details.
7. **Match**:- Details of matches of all season.
8. **Club-Manager:-** Club with their respective managers.
9. **Club-Asst-Manager**:- Club with their respective Assistant managers.
10. **Club-Stadium**:- Club's Home Stadium.
11. **Club-Player:-** Player and his current club.
12. **Playing-Clubs:-** Manual entry just before match begins about the teams playing in a particular match.
13. **Lineup:-** Lineup of a match entered just before the match and gets updated as the match progresses.
14. **Goals:-** A new entry whenever a goal is scored is entered manually.

15. **MOTM:-** Man of the match of a particular match entered manually.
16. **Substitutions:-** Players Substituted by clubs in a particular match entered manually.
17. **Booking**:- Data manually added when a player is booked.
18. **Transfer:-** Transfer details whenever a player transfer happens.
19. **Season-Chart:-** Top players of a season.
20. **Season-Champion:-** Champions of a Season updated when season is finished.
21. **Match-Referee:-** Referee of a particular match.
22. **Club-Stats:-** Season record of all clubs(e.g Win,Goals Scored etc.).
23. **Player-Stats:-** Players Records of all seasons.(e.g Goals Scored,Assists).

TRIGGERS:

1. **ADD_MATCH_IN_SEASON :** Inserts match schedule when new season begins
2. **GOAL_IS_SCORED :** Updates team score in match and player stats for goal scored and assists
3. **UPDATING_SEASON_CHARTS :** Top scorer, top assists and top clean sheets updated with update in player stats
4. **PLAYER_CLUB_TRANSFER :** Club changed when player transfer happens
5. **SEASON_CHAMPION :** Season Champion declared in the end of a season based on max score in points tally
6. **UPDATE_TITLES :** Number of titles updated for the winning club in club_stats
7. **MATCH_WINNER :** Match winner updated when match status is changed to "Finished"
8. **MATCH_FINISHED :** Points tally updated for playing clubs as per win, loss or draw
9. **BOOKING_DONE :** Updates player stats for number of red and yellow cards
10. **DOUBLE_YELLOW :** Player receives additional red card for 2 yellow in the same match
11. **SEASON_FINISHED :** Sets season status to "Finished" after last match for that season
12. **HOME_GIVE_CLEAN_SHEET :** Clean sheets updated for home team goalkeeper when away goals = 0
13. **AWAY_GIVE_CLEAN_SHEET :** Clean sheets updated for away team goalkeeper when home goals = 0
14. **SUBSTITUTION_PLAYER_OUT** : Updates lineup for substituted player
15. **SUBSTITUTION_PLAYER_IN :** Updates lineup for joining player
16. **MATCHER_PLAYED :** Updates player stats for the starting players
17. **MATCHES_STARTED :** Updates players stats for the starting players only
18. **MATCHED_PLAYED_BY_SUB :** Updates matches played for in substituted pla
19. **INSERT_PLAYER_CLUB_STATS :** Create empty entries for new season
20. **RED_CARD :** Player receiving a red card is benched and lineup is updated

QUERIES:

1. **Query 1:** Displays the timeline of a particular match like at what time goal was scored or a player was booked/substituted etc.
2. **Query 2:** All the past match details of the two teams when their match is about to be played.
3. **Query 3:** Displays all the defenders who have scored an own goal.
4. **Query 4:** Displays a list of all players sorted by their total playing time on field(sum of complete/substituted/benched matches) in the league
5. **Query 5:** List of the substitutes who have scored goals.