P2 - DATABASE DESIGN DOCUMENT

Problem Statement:

English Premier League (EPL) is one of the prominent football leagues in the world. Considering the vastness of league, we can imagine how important the data is for the team management, organizing committee, match statistics. And therefore, its necessary to maintain and keep a record of the whole database. Owner, Coach, Players, and Sponsors are key elements that use the management system. Owners, Coaches, Players, and Sponsors are key elements that use the database to keep all the records.

Objective:

In the EPL database system, the data will be centralized according to major entities such as teams, players, coaches, sponsors, and owners. This database can only be accessed by authorized persons, such as team owners and coaches etc. Team owners can use this database to buy the players based on their previous records. In addition, the coach can also use the data to analyse the performance of players and how to improve the team's game. We also included a feature which will help to get the data which can be used to determine awards for the players and teams based on their performance during the match.

Team Members:

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Prasanna Nimbalkar	nimbalkar.p@northeastern.edu	002111122
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Entities used in our Project:

1. Sponsorer- A sponsor can fund multiple teams . The primary key for sponsor is Sponsor id and attributes are sponsor name, sponsor amount, sponsor address.

2. Team- A team can be funded by multiple sponsors and has mandatory many relations with the owner entity. A team will have mandatory one relationship with the coach entity. A team will have mandatory many relations with a player entity as a team is composed of multiple players. Primary key of team entity is Team name and attributes are team id, team location/country.

3. Coach- Coach has optional one relationship with the team entity. Primary key of the coach is coach id. The attributes of the coach are coach name, coach address, coach fee.

4. Organising committee- Organising committee has one to many relationship with match entities as one organising committee can organise multiple matches. Primary key is committee id and the attributes are committee name.

5. Owner- Owner entity has mandatory many to mandatory one relationship with the team. Primary key of the owner entity is owner SSN and the attributes are owner name, owner address, owner phone, owner email.

6. Player - Player entity has mandatory many to mandatory one relationship with the team entity. A player entity can either be defender, midfielder, goalkeeper or attacker. Primary key for the player entity is player id and the attributes are player name, player address, player phone, player email id, player age, games played.

7. Match - A match entity has mandatory many to mandatory two relationships with the team entity. A match has optional many to mandatory many relationship with the referee entity. Match has optional many to mandatory one relationship with the venue entity. The primary key of the match will be match id. Attributes are match time, match score.

8. Referee- Referee is related only to a match entity. A match will be mandatorily judged by many referees but it's optional for the referee entity to judge a match. Primary key of the referee is the referee id. Attributes of the referee are referee name, referee age , referee contact number , referee email id , referee address.

9. Venue - Venue is only related to match entity and follows mandatory one to optional relationships. A match is mandatorily have a venue but no match can be played in a venue. Primary key of the venue will be venue id. Attributes of the venue are venue name, venue address , venue audience capacity.

10. Defender- A defender is only related to the player entity. Primary key of the defender will be player id. Attributes are defender name, defender position, defender clearance, defender blocks and defender interception.

11. Midfielder- A midfielder is only related to the player entity. Primary key of the midfielder will be player id. Attributes are midfielder name, midfielder position, midfielder shots, midfielder fouls and midfielder offsides.

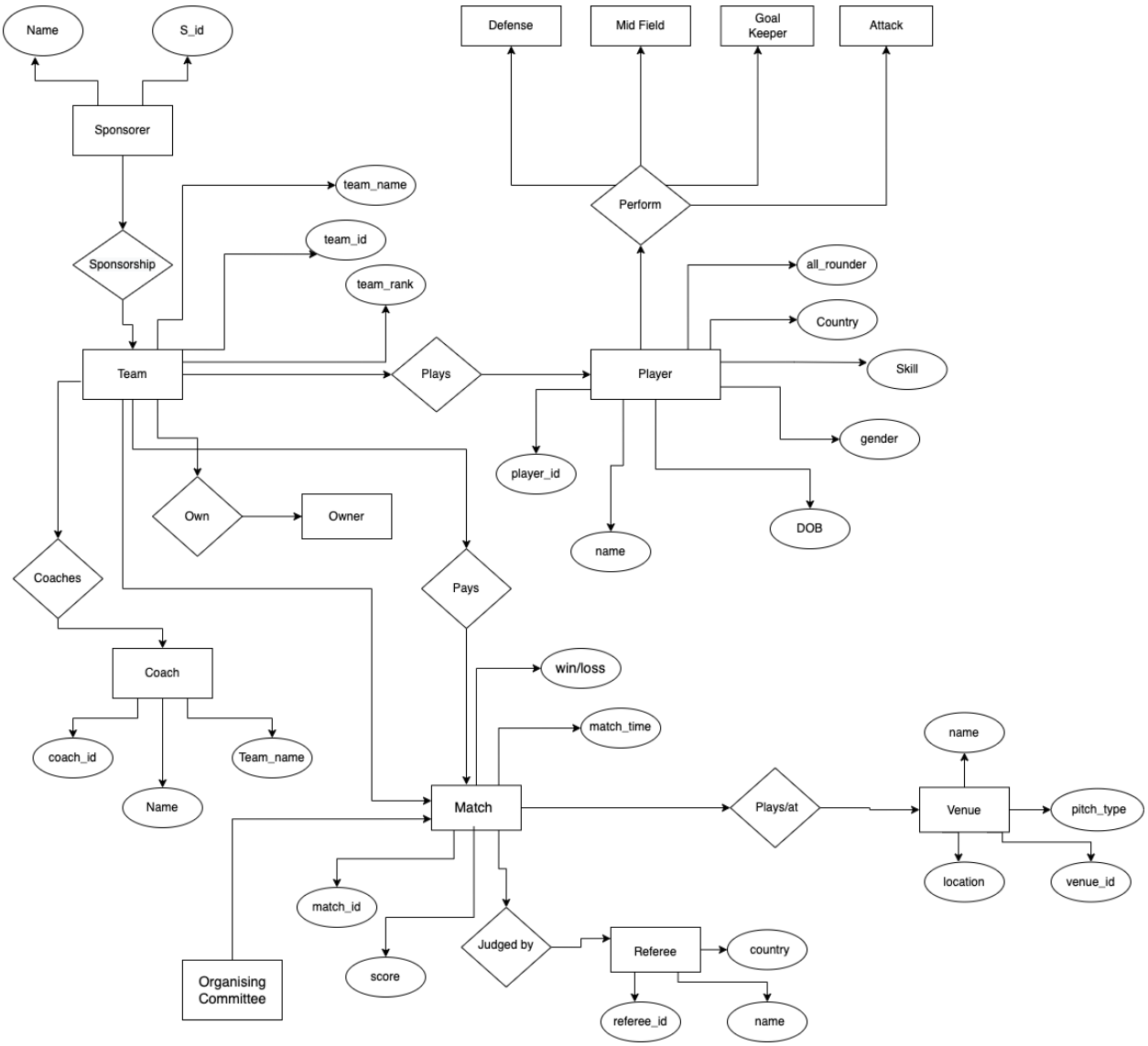
12. Goalkeeper -A goalkeeper is only related to the player entity. Primary key of the goalkeeper will be player id. Attributes are goalkeeper name, goal saves.

13. Attacker - An attacker is only related to the player entity. Primary key of the attacker will be player id. Attributes are attacker name, attacker position, attacker shots, attacker fouls and attacker offsides.

The ENTITY relations in our database are mentioned:

1. SPONSOR -> Sponsors -> TEAM: Each team can have many sponsors and each sponsor can sponsor many teams.
2. COACH -> coaches -> TEAM: One coach may guide only one team and One team can have only one coach.
3. OWNER -> owns -> TEAM: Each team is owned by one or more than one owner and one owner can be the owner of any one team.
4. MATCH -> played by -> TEAM: Each match is played by two teams and teams may or may not play the match.
5. PLAYERS -> plays -> TEAM: Each player can play only in one team and each team can have multiple players.
6. MATCH -> plays at -> VENUE: Each match can be played at only one venue and one venue can host zero or many matches.
7. MATCH -> judged by -> REFEREE: Each match can be judged by more than one referee and one referee may judge many matches.
8. ORGANIZING COMMITTEE -> organizes -> MATCH: Organizing committee can organize more than one match and each match can be organized by only one organizing committee.
9. PLAYER -> perform -> ROLE: Any player can either be Defender/ Midfielder/ Goalkeeper/ Attacker.

Conceptual Diagram:



Relational Design Draft and Attribute Details: