Introduction to Databases, Project 1 Proposal

European Soccer Information System

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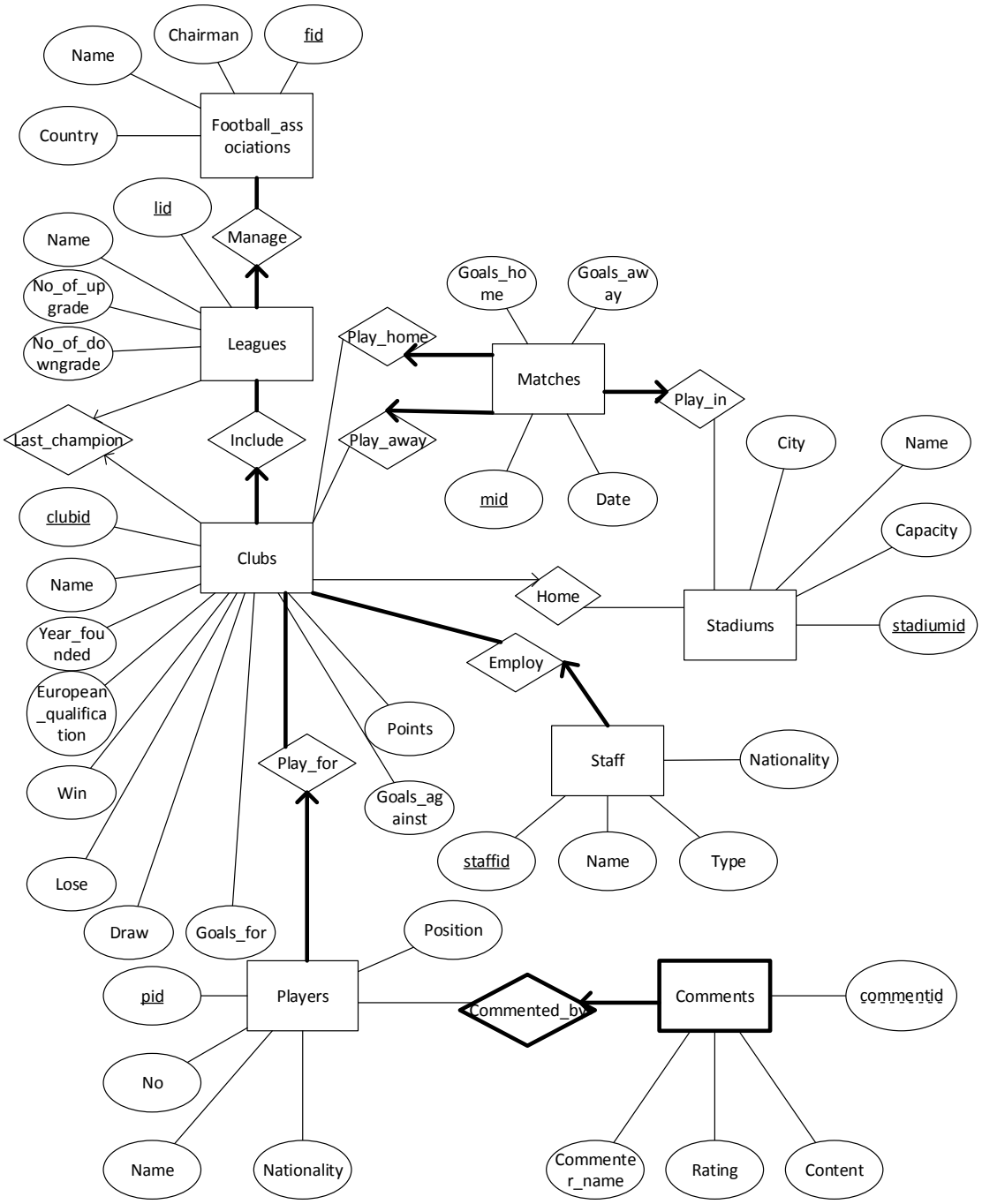
Description:

We want to create a data system on the domain of association football (soccer), collecting and organizing the data about soccer games, providing soccer amateurs with necessary information they need. We will follow the web-front option. For our webpage, we will allow users search certain football association and its affiliated leagues by combo boxes. After choosing a league, users can view soccer clubs in this league by a standings table. By clicking a certain club, detailed information such as staff, players, matches and stadiums will be provided. Our visitors can write comments on players and give them rating stars on each player's page. The entities of our project include football associations, leagues, clubs, staff, players, matches stadiums and comments. A football association manages some soccer leagues. Each league has numbers of teams to be upgraded or downgraded in the end of the current season. It includes several clubs and records the champion of the last season. Each club has a home stadium and employs several players and staff members. A match is played by a home team and an away team. The match also has a stadium, as the stadium of the match is not necessarily the stadium of the home team. For each player, there might be some comments with textual content and rating stars. We will use datasets from football.csv (https://github.com/footballcsv) and openfootball (https://github.com/openfootball). Our data will focus on leagues including English Premier League, English Championship, Italian Serie A and Spanish La Liga. And we will get additional data from Wikipedia.

Contingency plan:

If one team member drops the introduction to databases course, the project will be reduced by removing some entities from the proposal. The entities to be removed are staff, comments and stadiums. Then there will be five entities left in the project, which is suitable for an individual project.

Entity-Relationship Diagram:



Schema:

- ✧ Football_associations(fid, Country NOT NULL, Name NOT NULL, Chairman, UNIQUE(Country))
- ✧ Leagues(lid, Name NOT NULL, No_of_upgrade NOT NULL, No_of_downgrade NOT NULL, fid NOT NULL, Last_champion, UNIQUE(Name, fid), FK(fid) → Football_associations ON DELETE CASCADE, FK(Last_champion) → Clubs(clubid) ON DELETE SET NULL)
- ✧ Clubs(clubid, Name NOT NULL, Year_founded NOT NULL, European_qualification, Win NOT NULL, Lose NOT NULL, Draw NOT NULL, Goals_for NOT NULL, Goals_against NOT NULL, Points NOT NULL, lid NOT NULL, stadiumid, UNIQUE(Name, lid), FK(lid) → Leagues ON DELETE CASCADE, FK(stadiumid) → Stadiums ON DELETE SET NULL)
- ✧ Players(pid, No NOT NULL, Name NOT NULL, Nationality NOT NULL, Position NOT NULL, clubid NOT NULL, UNIQUE(No, clubid), FK(clubid) → Clubs ON DELETE CASCADE)
- ✧ Staff(staffid, Name NOT NULL, Type NOT NULL, Nationality NOT NULL, clubid NOT NULL, FK(clubid) → Clubs ON DELETE CASCADE)
- ✧ Stadiums(stadiumid, Name NOT NULL, City NOT NULL, Capacity NOT NULL, UNIQUE(Name, City))
- ✧ Matches(mid, Home_team NOT NULL, Away_team NOT NULL, Goals_home NOT NULL, Goals_away NOT NULL, Date NOT NULL, stadiumid NOT NULL, FK(Home_team) → Clubs(clubid) ON DELETE CASCADE, FK(Away_team) → Clubs(clubid) ON DELETE CASCADE, FK(stadiumid) → Stadiums ON DELETE CASCADE)
- ✧ Comments(pid, commentid, Commenter_name, Rating, Content NOT NULL, FK(pid) → Players ON DELETE CASCADE)

Constraints that cannot be captured in the above schema:

1. A football association manages at least one league;
2. A league has at least one club;
3. A club has at least one player;
4. A club employs at least one staff member.

TA's Approval: