CPSC 304 Project Cover Page

Milestone #: 1

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Group Number: 50

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

1. A brief project description answering these questions:
    a. What is the domain of the application? Describe it.

       Our application provides information about the world of soccer. The application allows users to view information regarding each country's national league, each team that participates in said leagues, all the titles that are won in these, the matches played, the goals scored, the stadiums in which the games take place, and people involved with the teams (such as players, coaches, management, and maintenance).
    b. What aspects of the domain are modeled by the database?

       The database models all the information provided regarding the teams, leagues, players, matches, titles, stadiums, and goals. The application gets its information from the attributes of each entity, such as the attributes that make up a player's profile (jersey number, nationality, and position played). The dates, scores, matches, people working for a team, and teams standings, are all modeled by the database, in which all the domains are centered around the match entity, which is played by teams and people in a stadium. Each title (or trophy) is won each year by the winning team that wins the league.
2. Database specifications: (3-5 sentences)
    a. What functionality will the database provide?

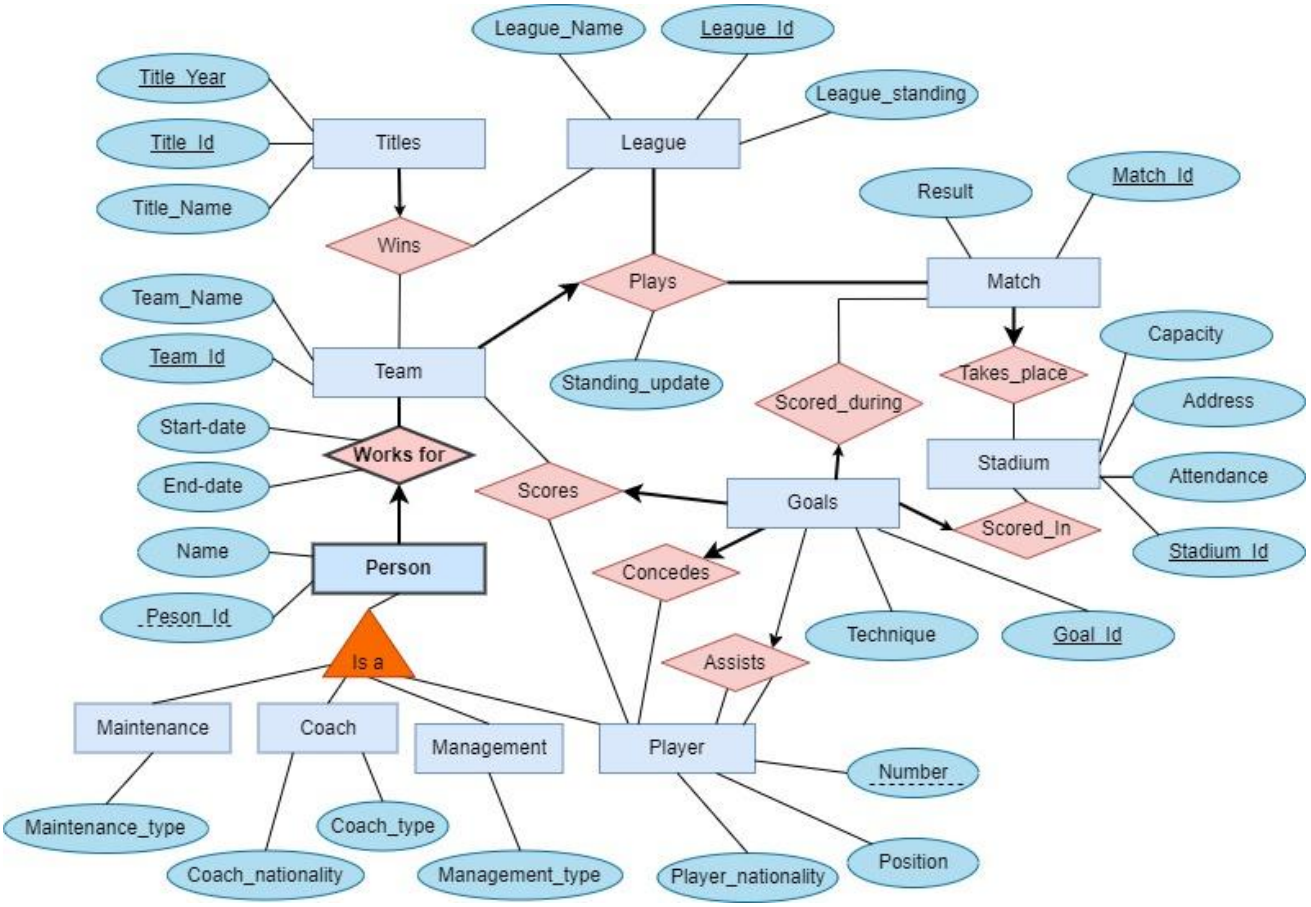
       Its main functionality is to provide information about all the agents involved in soccer, including all the existing teams and their performance in leagues, players or stadiums. This will help us to find everything that happens in the soccer world, and thanks to their relationships we could easily find the impact of every goal, match, or person in their league.
3. Description of the application platform: (2-3 sentences)

   What platform will your project use (PHP/JDBC/etc.)?
    a. Our project will use Oracle's platform as our DBMS, we will manage and create our database using Oracle, and we will also use PHP to help integrate our database with our application. The reason for choosing Oracle is because of its scalability and its user friendliness. Given that we want to maximize our learning for the project it also makes the most sense to be coherent with the

course, and use the DBMS that is recommended. We will use PHP because it works very well alongside oracle as well as it being an industry standard.

b. What is your expected application technology stack (i.e., any other things that you're using other than whether you're using PHP or JDBC)? Note that for DBMSs, we will only provide support for using the department's installation of Oracle. You are on your own for anything else.
   i. PHP
   ii. Oracle
   iii. Python (For the APIs to collect information)

4. An ER diagram for the database that your application will use. It is OK to hand-draw it but if it is illegible or messy or confusing, marks will be taken off. You can use software to draw your diagram (e.g., draw.io, GoogleDraw, Microsoft Visio, Powerpoint, Gliffy, etc.) The result should be a legible PDF or PNG document. Note that your ER diagram must use the conventions from the textbook and the lectures (Do not use crow's feet notation or notation from other textbooks).
5. Your E/R diagram should adhere to the expectations listed above



6. Other comments, as appropriate, to explain your project.
    a. Assumptions or important comments:
        i. A team must participate in a league in order to exist. The same happens with leagues and matches, no league can exist without teams playing in it, and no match can exist without exactly two teams playing it. Therefore these three entities have a ternary relationship. Two teams that play the match and the league they play in, with total participation of all of them. Moreover, this relationship has an attribute which has the 2 teams' standings in the league, and gets updated after the result of that match.
        ii. Only national leagues with inner country teams are considered. Neither international teams nor international leagues are valid, thus, a team can only play in one league and one game at a time.
        iii. No two players of the same team can have the same number.
        iv. One player can only play for one team at a time. If the player changes teams we will do the change in the person's entry so as to not duplicate lines and create another person_id. This way the player is removed from his old team and added to his new one simultaneously.
        v. Every team needs people to exist. The same happens with leagues, every league needs teams to exist. Hence person is a weak entity of the team.
        vi. Each title is made unique by the title and the year a team wins it. A team can win any number of titles from its league. A title has to be won by some team, otherwise it does not exist, implying total participation. However, a title cannot be won by more than one team in the same year.
        vii. Every match needs to be played in one and only one stadium, however, many matches can be played in the same stadium at different times. Since a match cannot be played without a stadium there must be total participation. On the other hand, a stadium could exist without matches played in it, so it has just partial participation.

viii. The sport is based on goals, which decide a match's fate, yielding league standings and ultimately attributing a title to a team for that year. A goal is identified by its goal_id and has a technique. Every goal is scored in a stadium during a match. Since a goal must happen during a match and in a stadium, there is total participation of goals in both relationships. However, since stadiums and matches don't need to have goals because games can end at 0-0, these two entities just have partial participation with goals.

ix. A goal is always scored by one team and by one player. We were careful to consider own-goals, yielding a ternary relationship between team, player and goal. This means a player scores one or many goals for a team. A goal needs a scoring team and player but a team and player can play without scoring, so goal entities have total participation and team and player have partial participation.

x. In order to incorporate useful statistics, we also added two more relationships between player and goal, which cannot be included in the previous one:

1. Concedes. Since a goalie concedes that goal. It is a one-to-many since one goalie can concede multiple goals. Once more, since a goal must be conceded by a goalie, there is total participation, but since a goalie can exist without conceding goals it has partial participation.
2. Assist. This represents a player providing the assist for a goal. Assistances are not mandatory for a goal to be scored, so total participation is not implied. However, since a player assists another player for the goal, the relationship is ternary between 2 players and the goal, which is why there are 2 lines coming from player.