Soccer Database Design Document

Version 1.0 Revision 1

Submittal Date: 02/04/2023

Table of Contents

Purpose 3
Narrative 3
Requirements (Actors and Roles) 5
Entities 5
Entities with Nested Attributes 6
Business Rules 7
ERD 8
EERD 9
RS 10

Purpose

The soccer league administrator wants to create a database to track teams, players, coaches, matches, fields, vendors, referees, and sponsors.

Narrative

The soccer league administrator wants to create a database to track teams, players, coaches, matches, fields, vendors, referees, and sponsors.

Reports include: match scores and results, player stats, referee assignments, team rosters, field and team sponsors, vendor types and field assignments, and coach assignments.

The soccer league consists of teams. Teams have one or more sponsors whose names appear on the team uniforms. Sponsors can support more than one team, and a team may have more than one sponsor at a time. Sponsorships are tracked by season.

Each team consists of players. No player belongs to more than one team during a single season. Each player is assigned a unique Player ID when they join the league. The league records each player's name and address, parent contact name, player phone number and parent phone number, and parent email. In order to verify players ages, the league also records each player's date of birth. Each team has a designated captain from among the players. Players are registered for the league followed by a draft to receive their team assignments. Players can play for one team one season and then play for a different team the next season.

Teams play in matches. Each match is given a unique Match ID number and is scheduled for a specific date. The league records the goals scored by each team and the win or loss result.

Player performance in each match is recorded for minutes played, goals scored, and penalties assessed. It is possible for a player to not participate in a match.

The league assigns three referees to each match, based on position (one head (H) and two linesmen (L)). Referees are assigned a unique Referee ID number when they first register with the league. The league records each referee's name (first name and last name), address and phone number, and contact email. Each new referee is assigned to one experienced referee as a mentor. Not all of the experienced referees serve as mentors, but those that do can mentor more than one new referee.

Matches take place at soccer fields. Sponsors can support fields by placing banners. Sponsors can support more than one field, and fields can have more than one banner. The league records the name and address (street, city, state, and zip) of all the fields where it stages matches. Each match, occurs at a single field at a time. The fields host multiple matches throughout the season. Some fields are closed when undergoing renovations with no matches scheduled during that period.

Vendors sell items at specific fields. Each field has several vendors. The league tracks the vendor assignments by season. In addition to the vendor's name, the league records the vendor phone number and the vendor type. Some vendors offer multiple types of services, for example: food, beverage, clothing, soccer suppliers, and other items.

The league also tracks coaches. A coach can be assigned to more than one team, but only as one role per assignment. Coaching roles are head (HC), assistant (AC), volunteer (VC). Each team can have

multiple coaches, but only one role at a time may be assigned to a single coach. Coach assignments are based upon season.

Reports

League administrator wants to run the following reports:

1. Team Rosters – player full name and age calculated from DOB.
2. Game Report – teams, goals scored, win/loss, head coach, head ref, date, match number.
3. Player Performance – play full name, total minutes played, penalties, goals, games.
4. Team Report – team name, games played, goals for and goals against, differential, win/loss record.

Rosters

The league wants to be able to track rosters for each season. You need to figure out how to design the relationship between players and teams to support the tracking of player/team assignments based on season.

Requirements (Actors and Roles)

- Team: Team includes coaches, players, and sponsors. Team plays in matches.
- Coach: Coaching roles are head (HC), assistant (AC), volunteer (VC).
- Sponsor: Sponsors support teams and fields
- Field: Fields are where team play matches. Vendor and sponsor are also in Field.
- Vendor: Vendors sell items at fields.
- Player: Players are part of team and compete in matches
- Match: Team competes in matches. There are 3 referees in each match.
- Referee: There are 3 referees in each match.

Entities

- Team
- Coach
- Sponsor
- Field
- Vendor
- Player
- Match
- Referee

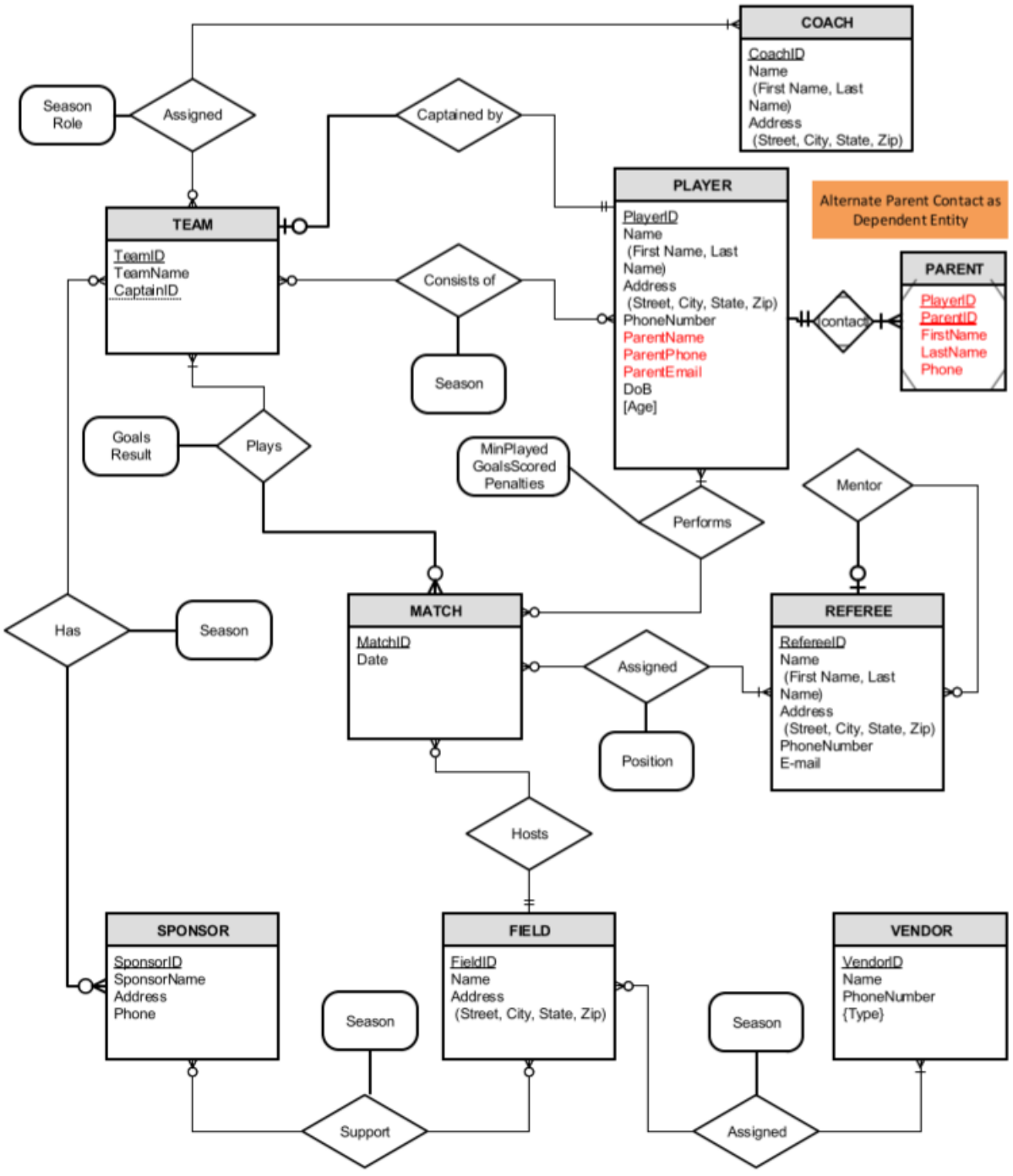
Entities with Nested Attributes

- Team
  - TeamID
  - PlayerID
- Coach
  - CoachID
  - Role
- Sponsor
  - SponsorID
- Field
  - FieldID
  - Name
  - Address (street, city, state, zip)
- Vendor
  - VendorID
  - Name
  - Phone
  - ServiceType
- Player
  - PlayerID
  - Name (first, last)
  - Address (street, city, state, zip)
  - PlayerPhone
  - ParentName (first, last)
  - ParentPhone
  - ParentEmail
  - DoB (year, month, day)
  - [Age]
- Match
  - MatchID
  - Date (year, month, day)
  - ScoreTeam1
  - ScoreTeam2
  - [ResultTeam1]
  - [ResultTeam2]
- Referee
  - RefereeID
  - Position
  - Name (first, last)
  - Address (street, city, state, zip)
  - Phone
  - Email

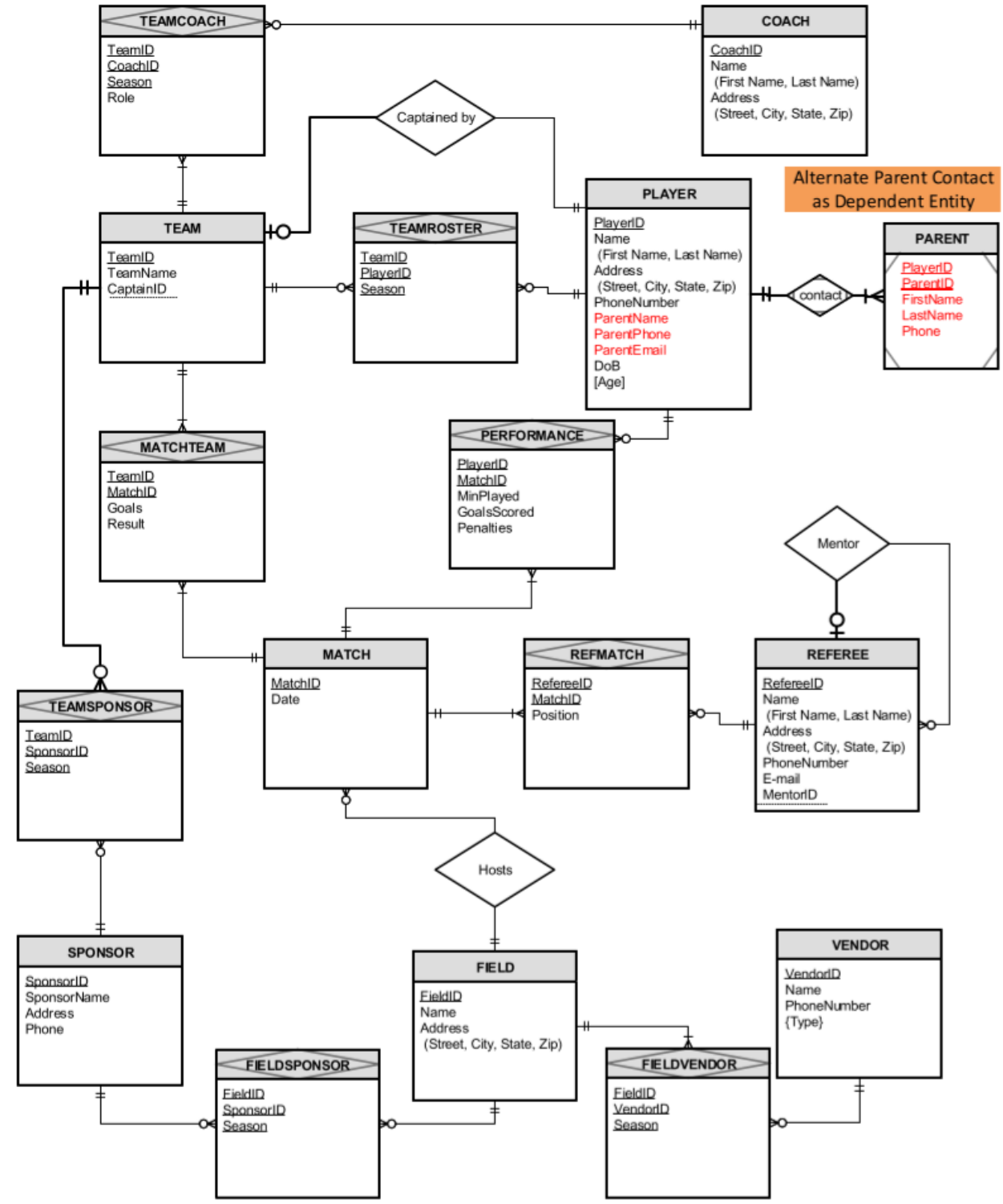
Business Rules

- Team:
  - Teams have one or more sponsors whose names appear on the team uniforms. Sponsors can support more than one team, and a team may have more than one sponsor at a time.
  - Each team can have multiple coaches, but only one role at a time may be assigned to a single coach.
- Coach
  - A coach can be assigned to more than one team, but only as one role per assignment. Coaching roles are head (HC), assistant (AC), volunteer (VC).
  - Each team can have multiple coaches, but only one role at a time may be assigned to a single coach.
  - Coach assignments are based upon season.
- Sponsor
  - Sponsors can support more than one team, and a team may have more than one sponsor at a time.
  - Sponsorships are tracked by season.
  - Sponsors can support fields by placing banners.
  - Sponsors can support more than one field, and fields can have more than one banner.
- Field
  - Sponsors can support more than one field, and fields can have more than one banner.
  - Each match, occurs at a single field at a time. The fields host multiple matches throughout the season.
  - Vendors sell items at specific fields.
  - Each field has several vendors
- Vendor
  - Vendors sell items at specific fields.
  - Each field has several vendors
- Player
  - No player belongs to more than one team during a single season
  - Players can play for one team one season and then play for a different team the next season.
- Match
  - Teams play in matches
  - Each match, occurs at a single field at a time.
  - The fields host multiple matches throughout the season.
- Referee
  - Each new referee is assigned to one experienced referee as a mentor.
  - Not all of the experienced referees serve as mentors, but those that do can mentor more than one new referee.

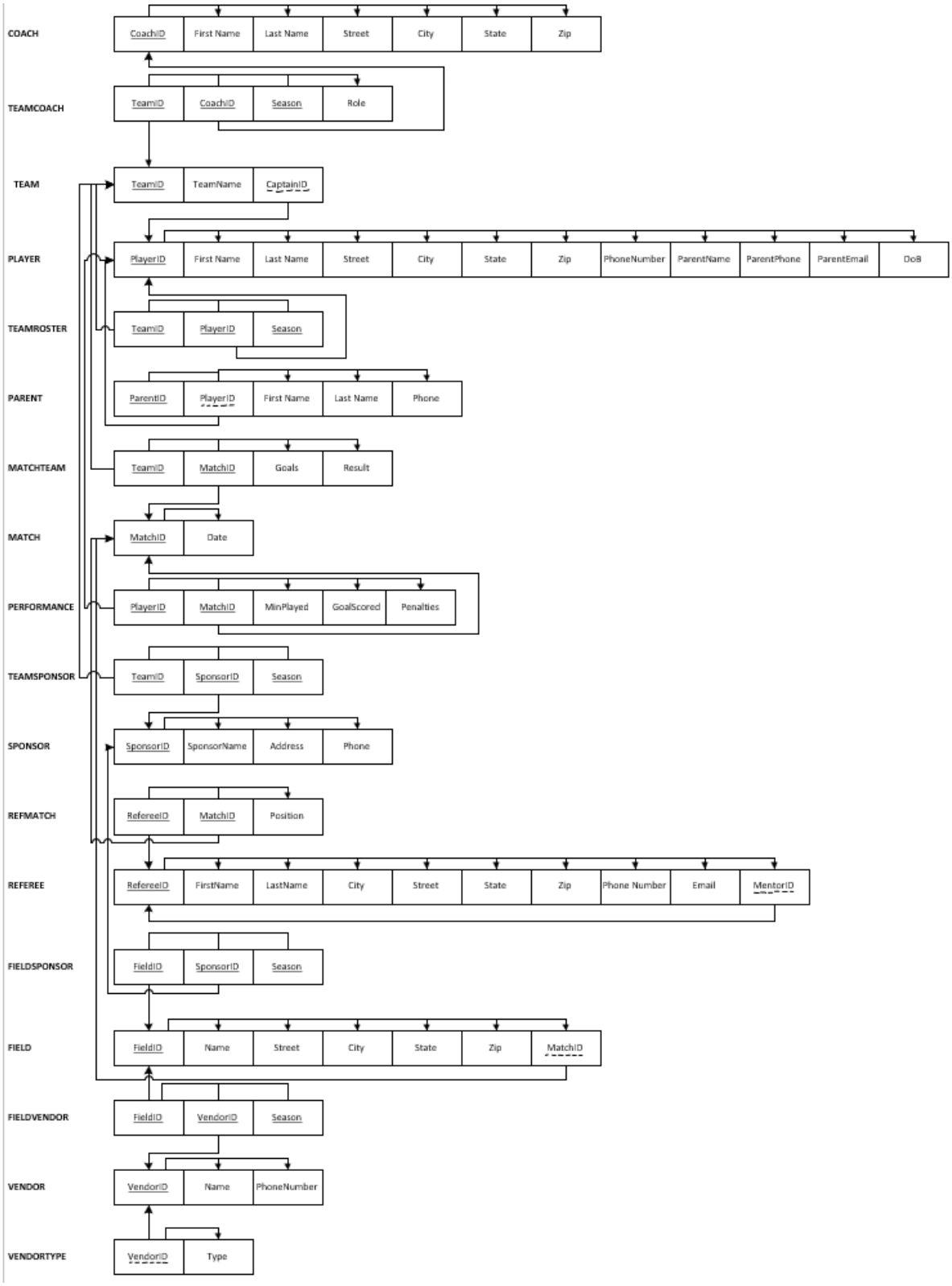
ERD


COACH
CoachID
Name
(First Name, Last Name)
Address
(Street, City, State, Zip)
Season Role
Assigned
Captained by
PLAYER
PlayerID
Name
(First Name, Last Name)
Address
(Street, City, State, Zip)
PhoneNumber
ParentName
ParentPhone
ParentEmail
DoB
[Age]
Alternate Parent Contact as Dependent Entity
TEAM
TeamID
TeamName
CaptainID
Consists of
Season
contact
PARENT
PlayerID
ParentID
FirstName
LastName
Phone
Goals Result
Plays
MinPlayed
GoalsScored
Penalties
Performs
Mentor
Has
Season
MATCH
MatchID
Date
Assigned
Position
REFEREE
RefereeID
Name
(First Name, Last Name)
Address
(Street, City, State, Zip)
PhoneNumber
E-mail
Hosts
SPONSOR
SponsorID
SponsorName
Address
Phone
Season
FIELD
FieldID
Name
Address
(Street, City, State, Zip)
Season
VENDOR
VendorID
Name
PhoneNumber
{Type}
Support
Assigned

EERD


TEAMCOACH
TeamID
CoachID
Season
Role
COACH
CoachID
Name
(First Name, Last Name)
Address
(Street, City, State, Zip)
Captained by
Alternate Parent Contact as Dependent Entity
PLAYER
PlayerID
Name
(First Name, Last Name)
Address
(Street, City, State, Zip)
PhoneNumber
ParentName
ParentPhone
ParentEmail
DoB
[Age]
TEAM
TeamID
TeamName
CaptainID
TEAMROSTER
TeamID
PlayerID
Season
contact
PARENT
PlayerID
ParentID
FirstName
LastName
Phone
MATCHTEAM
TeamID
MatchID
Goals
Result
PERFORMANCE
PlayerID
MatchID
MinPlayed
GoalsScored
Penalties
Mentor
MATCH
MatchID
Date
REFMATCH
RefereeID
MatchID
Position
REFEREE
RefereeID
Name
(First Name, Last Name)
Address
(Street, City, State, Zip)
PhoneNumber
E-mail
MentorID
TEAMSPONSOR
TeamID
SponsorID
Season
Hosts
SPONSOR
SponsorID
SponsorName
Address
Phone
FIELD
FieldID
Name
Address
(Street, City, State, Zip)
VENDOR
VendorID
Name
PhoneNumber
{Type}
FIELDSPONSOR
FieldID
SponsorID
Season
FIELDVENDOR
FieldID
VendorID
Season

RS


COACH
CoachID
First Name
Last Name
Street
City
State
Zip
TEAMCOACH
TeamID
CoachID
Season
Role
TEAM
TeamID
TeamName
CaptainID
PLAYER
PlayerID
First Name
Last Name
Street
City
State
Zip
PhoneNumber
ParentName
ParentPhone
ParentEmail
DoB
TEAMROSTER
TeamID
PlayerID
Season
PARENT
ParentID
PlayerID
First Name
Last Name
Phone
MATCHTEAM
TeamID
MatchID
Goals
Result
MATCH
MatchID
Date
PERFORMANCE
PlayerID
MatchID
MinPlayed
GoalScored
Penalties
TEAMSPONSOR
TeamID
SponsorID
Season
SPONSOR
SponsorID
SponsorName
Address
Phone
REFMATCH
RefereeID
MatchID
Position
REFEREE
RefereeID
FirstName
LastName
City
Street
State
Zip
Phone Number
Email
MentorID
FIELDSPONSOR
FieldID
SponsorID
Season
FIELD
FieldID
Name
Street
City
State
Zip
MatchID
FIELDVENDOR
FieldID
VendorID
Season
VENDOR
VendorID
Name
PhoneNumber
VENDORTYPE
VendorID
Type