1. **Functional Dependencies**

    a. pid → fname, lname, address, phoneNum

    b. playerID → pid

    c. cid → pid, yearsCoached

    d. teamID → teamName, ageGroup

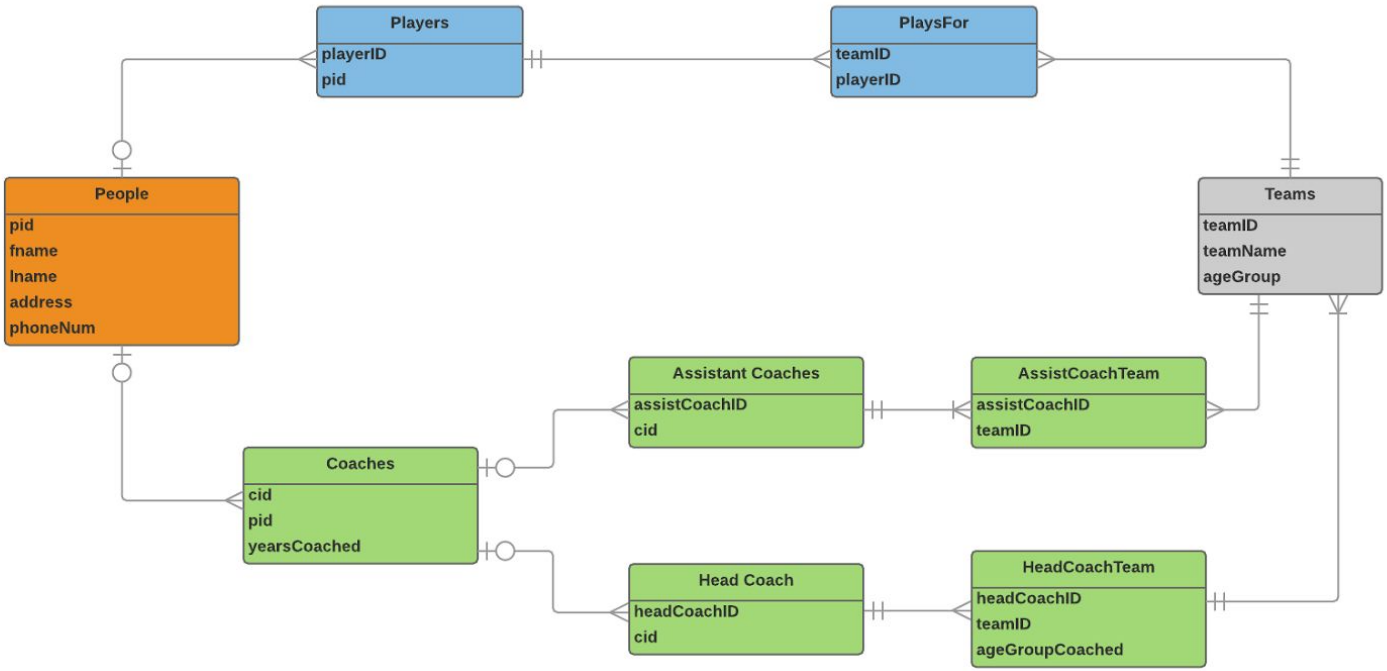
    e. assistCoachID → cid

    f. headCoachID → cid

    g. headCoacID, teamID → ageGroup

LEAGUE ER DIAGRAM

Stephen Bohner | April 25, 2016



2.

3. My ER diagram is in Boyce-Codd Normal form because every depends only on the key. My database consists of a People table which holds all of the attributes that all coaches and players have. I then separate players and coaches into two different tables, and give the coaches a yearsCoached attribute. The many-to-many relationship between players and teams is connected through a PlaysFor relationship that relates the Players and Teams tables through their respected keys, giving the new PlaysFor table a composite primary key. The coaches table is related to the Assistant Coaches table and the Head Coach table. The Assistant Coaches table has a many-to-many relationship with Teams, therefore another table is needed to relate the two. AssistCoachTeam takes those two tables and does that by their primary keys, creating another composite primary key. Each head coach is in the HeadCoachTeam table, which relates the Head Coach and Teams table with a composite primary key, along with the ageGroupCoached attribute added. Although it would not be shown in my ER diagram, I would create a stored procedure to check if a head coach is coaching a team in one ageGroup. If the coach is already coaching a team in the same age group they will not be allowed to coach any other team in that age group.