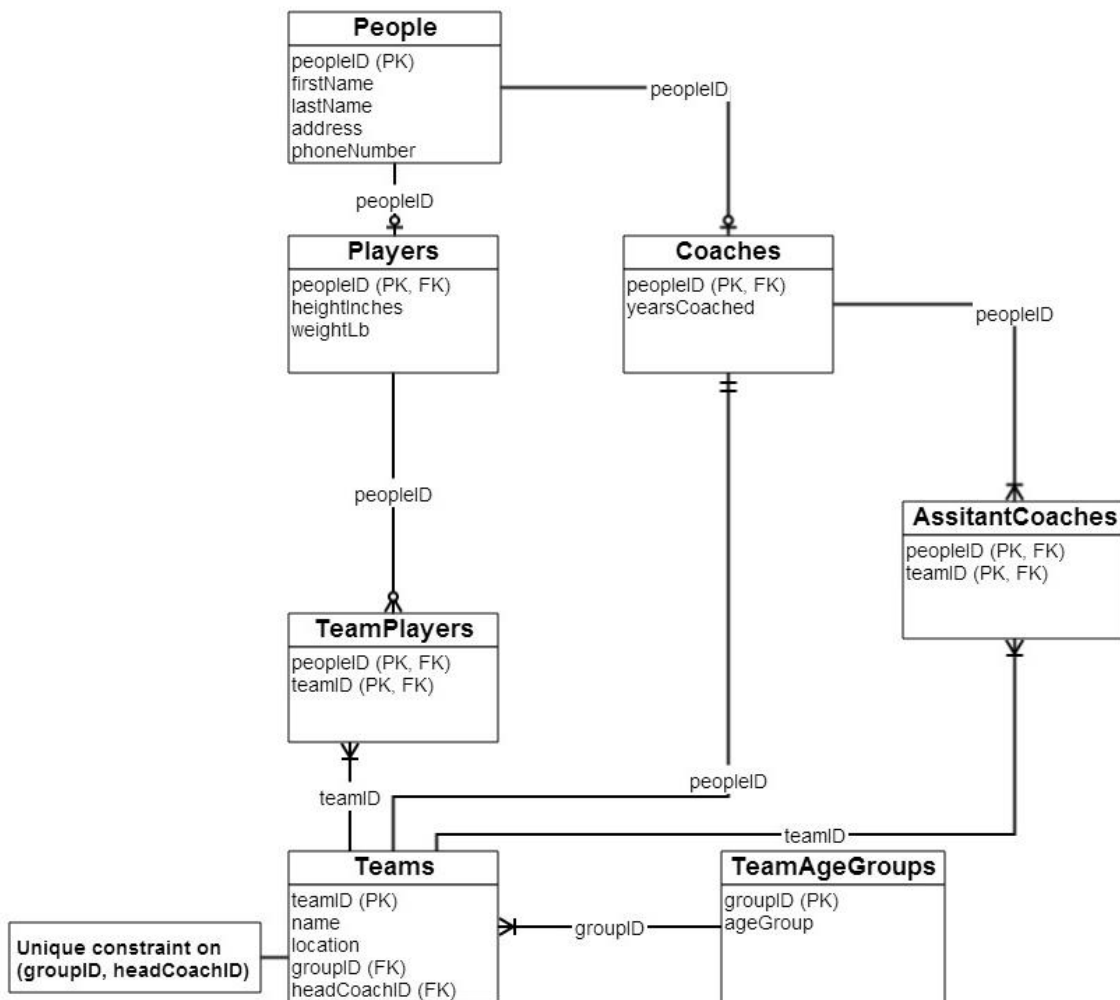


Normalization HW 3

1. Functional dependencies:

- People table
 - $\text{peopleID} \rightarrow \text{firstName, lastName, address, phoneNumber}$
- Players table
 - $\text{peopleID} \rightarrow \text{heightInches, weightLb}$
- Coaches table
 - $\text{peopleID} \rightarrow \text{yearsCoached}$
- Teams table
 - $\text{teamID} \rightarrow \text{name, location, groupID, headCoachID}$
- TeamAgeGroups
 - $\text{groupID} \rightarrow \text{ageGroup}$

2. ER diagram



3. Explanation

This database is in BCNF because there are no interior transitive dependencies and every non-key attribute for each table is only dependent on the key, the whole, and the nothing but the key (In Bob We Trust, so Help Me Codd). In addition, there are no anomalies (e.g. deleting, inserting, and updating anomalies). For instance, a player can be inserted into the database, as long the required information (peopleID) is included, without knowing other details such as their coaches or the team they play.

4. SQL View on all teams in the 10-14 age group

```
-- The attribute groupID is the designated age group.
-- For ages below 10, groupID is 1. For ages between
-- 10 to 14, groupID is 2. For ages beyond 14, groupID is 3.
create view Teams_AgeGroup_10to14 as
    select t.name, t.location, tag.ageGroup
    from Teams t, TeamAgeGroups tag
    where t.groupID = 2
    and t.groupID = tag.groupID;

select *
from Teams_AgeGroup_10to14;
```