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Database Management Systems

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Normalization HW # 3

Functional Dependencies –

People
pid → firstname, lastname, address, phonenumber

Athletes
pid → age, tid

Teams
tid → teamName, headCoach, aGid

Coaches_Assistant
pid, tid (No func. dependency)

Coach_Sort

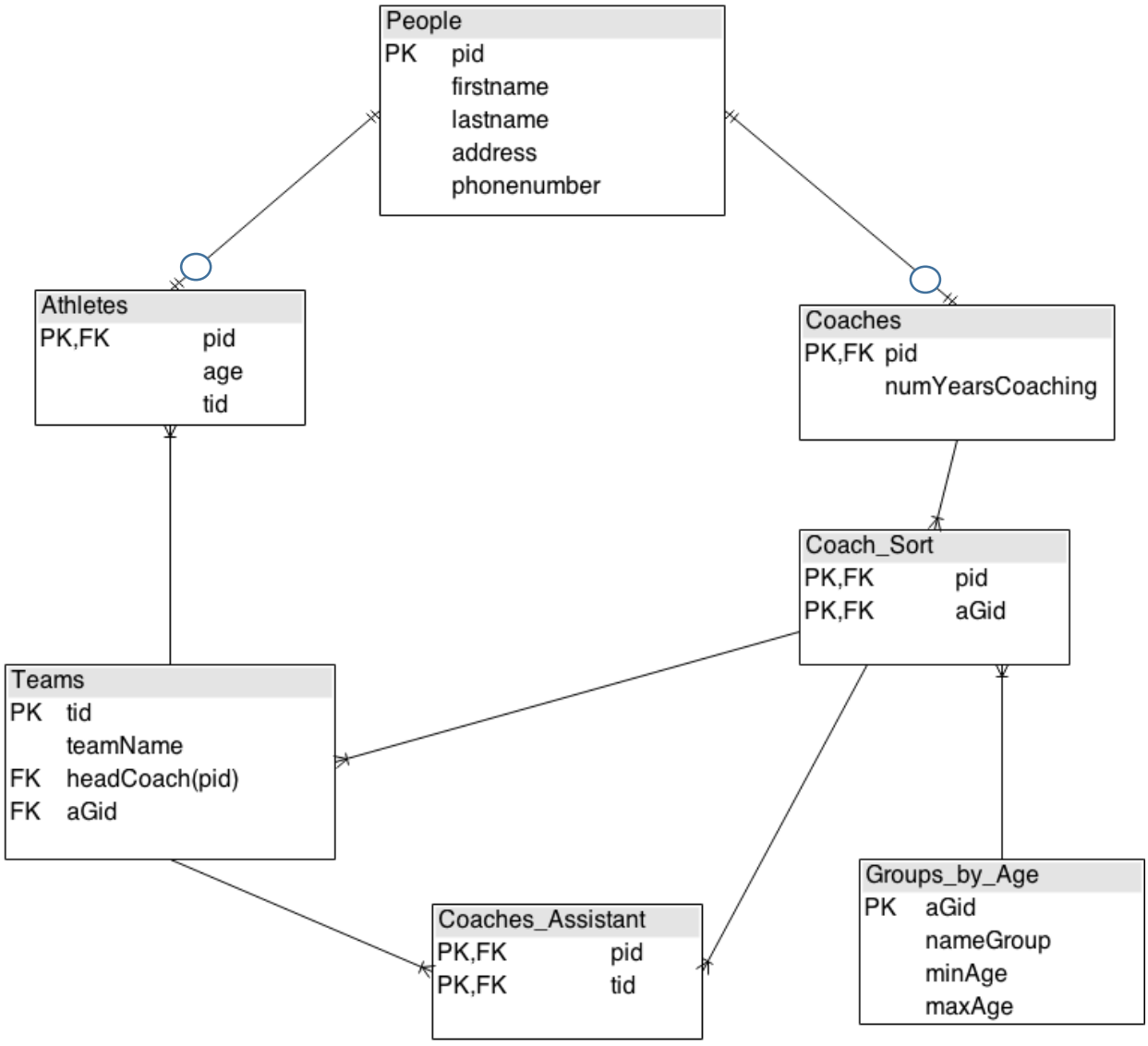
pid, aGid (No func. dependency)

Coaches
pid → numYearsCoaching

Groups_by_Age

aGid → nameGroup, minAge, maxAge

E-R Diagram


People
PK pid
firstname
lastname
address
phonenumber
Athletes
PK,FK pid
age
tid
Coaches
PK,FK pid
numYearsCoaching
Coach_Sort
PK,FK pid
PK,FK aGid
Teams
PK tid
teamName
FK headCoach(pid)
FK aGid
Coaches_Assistant
PK,FK pid
PK,FK tid
Groups_by_Age
PK aGid
nameGroup
minAge
maxAge

Prove that your database is in third normal form (3NF)

My database is in third normal form because there are no multiple or partial key dependencies. None of the attributes depend only one part of a composite key, if they depend on a composite key it's the whole key. The attributes in each table are dependent upon the whole key and nothing but the key so help me Codd. Every non-key attribute depends on all attributes of the primary key. Also, there are only composite keys in two of the tables out of but there nothing else in the tables. Since each of the tables is in 3NF and every non-key attribute is dependent upon all attributes of the primary key, the entire database is therefore in 3NF.

A view to display all the teams in the 10-14 age group.

```
CREATE VIEW agetentofourteen AS
SELECT *
FROM teams , coach_sort, Groups_by_age
WHERE teams.headCoach = coach_sort.pid
AND tea,s.gid = coach_sort.aGid
AND coach_sort.aGid = Groups_by_age.aGid
AND Groups_by_age.minAge = 10
AND Groups_by_age.maxAge = 14;
```