Functional Dependencies:

People table: FirstName → pid, LastName → pid, Address → pid, PhoneNumber → pid,

DateOfBirth → pid

Coaches table: YearsCoached → pid

HeadCoaches table: (pid, AgeGroup) must be unique pid → tid, AgeGroup → tid

PlayerRoster table: AgeGroup → pid, tid (pid's DateOfBirth must lie within the dates of the

AgeGroup)

Teams table: AgeGroup → tid, TeamName → tid

AgeGroups table: Description → AgeGroupID, StartAge → AgeGroupID, EndAge →

AgeGroupID

3NF:

The database is in 3rd Normal Form because each attribute is dependent on its table's primary

key and only the primary key as shown by the functional dependencies. It is also in Boyce-Codd

Normal Form because there are no dependencies that are also reversible.

E-R Diagram:

People

PK		pid
		FirstName
		LastName
		Address
		PhoneNumber
		DateOfBirth

Coaches

PK	FK	pid
		YearsCoached

AssistantCoachRoster

PK	FK	pid
PK	FK	tid

Teams

PK		tid
	FK	AgeGroup
		TeamName

HeadCoaches

	FK	pid
PK	FK	tid
	FK	AgeGroup

Unique constraint on (pid, AgeGroup)

PlayerRoster

PK	FK	pid
PK	FK	tid
	FK	AgeGroup

Composite foreign key (tid, AgeGroup)

Constraint on AgeGroup, pid's DateOfBirth has to be in that AgeGroup

AgeGroups

PK	AgeGroupID
	Description
	StartAge
	EndAge