Liliya Yerassilova Normalization 9 04/08/2016 Yrs_to_head ages 10-14 ages 10-14 under 10 over 14 over 14 Group 9 9 Total_yrs_coaching Yrs_as_head Head coach Coaches 10 ΔI В CID ap/house 301 8 8 330 3 914-548-3333 | 15 Marymount Ave 77 Rose Street
 12603
 914-548-7777
 71 Rose Street

 12603
 914-548-6666
 77 Rose Street
 914-548-1111 29 Park Street
 12601
 914-548-9999
 42 Pine Street

 12601
 914-548-8888
 44 Pine Street
20 Park Street 15 Eve Ave yr_of_award 5 Eve Ave 2015 2016 12602 914-548-5555 12602 914-548-4444 914-548-2222 Phone num Silver Cup Silver Cup award NOLL 10591 12591 12591 12592 Clevers Eagles Foxes Name zip 12601 state È Wappingers Falls Poughkeepsie Poughkeepsie Poughkeepsie Haderger Connery Tarrytown Last_name Preiz Steward Wassaic Guz Cayra LaRock Leap city Δ В PID First_name Brendan John Alexa Carly Chloe Jason Ryan Laura zip 10591 12590 12601 12602 12603 Lisa Sean ages 10-15 ages 10-14 under 10 over 14 over 14 under 11 Group Feam_in_age_group PLID 10 Height(cm)|Weight(kg) ₽ 23 09 53 23 beginer 6/5/2008 beginer skills 135 160 170 170 1/25/2007 F/M DOB Σ Σ intermediate skills 딥 PLID over 14 DOB 4/15/2001 6/15/2000 PLID 10 intermediate 3/16/2004 advanced skills 2/20/2005 B08 PLID ∞

E / R diagram.

A separate PDF file looks better ©

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Functional Dependencies:



Zip:

Coaches:

Head_coach:

Assistant_coach:

Coaches_in_team:

Players:

Under 10:

Ages 10 – 14:

Over 14:

Team_in_age_group:

Teams:

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The database is in Boyce_Codd normal form. Since all the columns have atomic, single-valued attributes, the database is in the 1st normal form. There are no partial key dependencies in any of the tables; for each table there is an entire primary key that determines everything else. There are two tables (Coaches_in_team and Team_in_age_groups) that have composite primary keys, and in both cases, the entire key determines group. Therefore, the tables are in the 2nd normal form. There are no multiple key dependencies, since there is no attribute that is dependent on more than one key in the database. Thus, the 3rd normal form is met. Lastly, there are no interior transitive dependencies. There are transitive dependencies among tables, but not interior ones. The address zip code is separated from People table in order to avoid interior transitive dependency that could have resulted, had there be no separate zip table. Thus, the database is in the Boyce-Codd normal form.

An additional note:

In order to make sure the database and the relations work, certain constraints should be implemented when creating the tables in SQL. For example, for the age tables, there should be a constraint for date of birth for each category.