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Database Management
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Lab 9

Normalization Three

Functional Dependencies:
(zip) → cityTown, state, country
(pid) → firstName, lastName, phoneNumber, address1, address2, zip
(cid) → yearsCoaching
(playerID) → teamID, age
(teamID) → teamName, ageGroup, hcid
(teamID, acid) →
(hcid) →
(acid) →

The database would have a set of stored procedures that would enforce the restrictions that the client would have. For example, the age group attribute of the Team table would a Unique constraint to make sure that there is only one age group and that the head coach only has the option to coach up to three team, because such a coach can only coach one team in each age group. The same would be in place for assistant coaches as well. In addition to that, there would be a stored procedure to make sure that a player is not on more than one team, and that there are different assistant coaches for one team.

The database is is in third normal form because it fulfills all the previous needed normal forms and it also doesn't have multiple key dependencies in any of its tables. One example of this is the Zip Code table and its relationship to the Person table. If city, state and country had been included in the Person table info, then there would have been a multiple key dependency because the zip code would have also functionally determined them. As a result, there is a separate table with the zip code information and the corresponding cities or towns, states and countries. As for the partial key dependencies, the table also does not have any of those because every primary key in the database determines all of the nonkeys in its corresponding tables. Also, every intersection is atomic because there is only one value for every intersection in every table.