

Database Design in 3NF

organizations (id, name, street_1, street_2, city, state, zip, short_name, active)

students (id, first_name, last_name, grade, organization_id, active)

student_teams (id, student_id, team_id, start_date, end_date, position, active)

teams (id, name, organization_id, division, active)

Underlines:

Solid underlined fields are primary keys;

Dotted underlined fields are foreign keys;

Double underlined fields are composite keys that are both primary and foreign keys.

Database Design Notes:

1. Strictly speaking, having zip code in the organizations table creates a transitive dependency, but given the limited size of the system there is no need to normalize and move zip code and primary city & state into its own table.
2. A student's current team assignment is determined by finding the student's record in the student_teams table that has a NULL value in end_date.
3. Zip codes are saved as strings to preserve leading zeros. We are only concerned with the first five digits and not tracking the +4 digits that sometimes follow.