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CS 435

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Writeup

Problem Description:

For this problem, we were required to create a database system for a baseball organization. The baseball organization contains several kinds of people and each person has a specific role related to the team they are on. Each team can participate in games, inevitably increasing overall stats for players.

Design Approach:

I decided to have a personnel entity to be the super-type of several different kinds of roles that go into a team. The entities such as players, coaches, and managers each are a subtype of personnel in which each have their own distinct relationship to the entity team. Additionally, there is an umpire role which is also a sub-type of personnel; however, an umpire does not share a relationship to the team, but rather to the game entity itself. Moreover, a player does not have to be the only role, but a player can be extended to a pitcher role. The pitcher role shares the same attributes as the player role (since a pitcher still is a player), but it also has an attribute of ERA. The team entity contains a N to 1 relationship to players, N to 1 relationship to coaches, and a 1 to 1 relationship to manager. Finally, the team entity shares a N to 1 relationship called participates in to the game entity. Since a game is between 2 teams, it made sense to me to make the relationship N to 1. The relationship holds various attributes such as the date, a composite attribute of the team type, and the statistics related to the team for that specific game (runs, hits, errors). I decided to make these attributes part of the relationship because a single game would not be able to record the scores for each team, thus for each team that participates in the game, it will record the type and score for each. The game entity has an ID so that we know which empire was tied to which game, and it holds the pitcher ID’s (winning, losing, saved) and the winning team name.