Table Relationships

Objective: In no more than three pages, describe (in English) the relationships that exist among the tables in your database, and how you will represent them with foreign keys and linking tables.

For each relationship, you should not only address the implementation, but also explicitly state what type (1:1, 1:N, N:M) of relationship it is, what it's manner of participation for each involved table is (mandatory, optional), what the degree of participation is (e.g., 0 or more, 1 or more, between 1 and 4), and the deletion rule that will be applied when deleting from the parent table in the relationship.

Our Table Relationships

The Moves data table is a 1:1 relationship with the KnownMoves, ForgottenMoves, PokemasterRatings, RatingCounts, and Schedules tables. KnowMoves, ForgottenMoves, and PokemasterRatings are linking tables where MoveID will be used as a foreign key to connect specific moves with other information. Schedules will be optional participation (since a move may or may not be taught at a given time) along with ForgottenMoves, but besides those all other associated tables require mandatory participation. The degree of participation between Moves and KnownMoves is 1 to 4 and the deletion rule is cascade. The degree of participation between Moves and ForgottenMoves is 0 to N and the deletion rule is cascade. The degree of participation between Moves and PokemasterRatings is 1 to N and the deletion rule is restrict. The degree of participation between Moves and RatingCounts is 1 to 1 and the deletion rule is restrict. The degree of participation between Moves and Schedules is 0 to 5 and the deletion rule is deny.

The Pokedex table is a validation table which assures that PokemonTypes and OwnedPokemon are assigned legitimate pokemon.The Pokedex has a (1:N) relationship with PokemonTypes and OwnedPokemon. The relationship between the Pokedex and PokemonTypes are mandatory as all pokemon have a type and the relationship between Pokedex and OwnedPokemon is optional because all pokemon might not be owned.The degree of participation between the Pokedex and PokemonTypes is 1 or 2 because a pokemon can only have 1 or 2 types. Degree of participation between the Pokedex and OwnedPokemon is 0 or more because there is no limit to the number of a pokemon species that can be owned. The deletion rule for the Pokedex and PokemonTypes would be Cascade because if a pokemon were to become extinct the information on its types would no longer be needed. The deletion

rule for the Pokedex and OwnedPokemon would also be cascade, because the pokemon would need to be extinct to be removed from the pokedex.

Schedules is a data table that relates a move to when it is taught, the duration of the teaching time, and if it is currently being taught. The relationship between Schedules and Move is one Schedule to one move (1:1). This relationship is optional because a move does not have to be scheduled if it is deemed unpopular. The degree of participation between Schedules and Moves will be that each Schedule will have 1 move and cannot have more or less. The deletion type for Schedules would be (D)eny because Bill will have to choose to delete a move from the Schedules based on ratings/participation. Deny would also allow Bill to have access to old Schedules in case he wanted to revert. Schedules use MoveID as a foreign key within the table. The schedules table needs to know what moves are being taught.

RatingCounts is a 1:1 relationship with Moves. The type of participation for RatingCounts is mandatory as every single record in RatingCounts must be associated with a record in Moves. The degree of participation for RatingCounts and Moves is one to one. The deletion rule MoveID from the Moves table is the only foreign key in Rating Counts. The deletion rule for RatingCounts would be Nullify as a Moves record can exist without a record from RatingCounts.

Pokemasters table is a 1:1 relationship with OwnedPokemon, and PokemasterRatings tables. The type of participation for Pokemasters and OwnedPokemon is mandatory as it is necessary to own pokemon to be a pokemaster. The type of participation for Pokemasters and PokemasterRatings is mandatory even though no one have rated them yet, they still need a record to show that information. The degree of participation for Pokemasters and OwnedPokemon is 1:N. The degree of participation for Pokemasters and PokemasterRatings is 1:1. The deletion rule for Pokemasters vs OwnedPokemon is cascade because if a pokemaster retires then all the Pokemon are released. The deletion rule for Pokemasters vs PokemasterRatings is deny because even if a pokemaster retires but people will still want to keep a record of his rating.

PokemonTypes is a linking table with a 1:1 relationship between Pokedex and Types and the degree of participation is also 1:1. There is mandatory participation between both tables. The deletion rule between PokemonTypes and the other two tables associated is cascade so that if a pokemon’s type was ever used by another table, the database integrity would be enforced. TypeID and PokemonID would serve as foreign keys in this table.

KnownMoves is a linking table with a 1:1 relationship between OwnedPokemon and Moves and the degree of participation is also 1:1. There is mandatory participation between both tables. The deletion rule between KnownMoves and the other two tables associated is cascade so that if a pokemon's type was ever used by another table, the database integrity would be enforced. OwnedPokemonId and MoveID are going to be foreign keys that are being used to show a specific pokemon that is owned and their known moves.

ForgottenMoves is a linking table with a 1:1 relationship between OwnedPokemon and Moves and the degree of participation is also 1:1. There is mandatory participation between both tables. The deletion rule between ForgottenMoves and the other two tables associated is cascade so that if a pokemon's type was ever used by another table, the database integrity would be enforced. In this table, OwnedPokemonId and MoveID are going to be foreign keys that are being used to show a specific pokemon that is owned and their forgotten moves.

PokemasterRatings is a linking table with a 1:1 relationship between Pokemasters and Ratings and the degree of participation is also 1:1. There is mandatory participation between both tables. The deletion rule between PokemasterRatings and the other two tables associated is deny so that old ratings can be preserved. In this table, the PokemasterID and the MoveID are being used as foreign keys because we need a specific master and a move to give a star rating.

The OwnedPokemon table is a data table with a (1:1) relationship with the Pokemasters and Pokedex tables. The degree of participation between OwnedPokemon and Pokemasters is 1 OwnedPokemon to 1 Pokemaster. The degree of participation between OwnedPokemon and Pokedex is 1 OwnedPokemon to 1 Pokedex. An OwnedPokemon must have a Pokemaster and a Pokedex so both their relationships are mandatory. The deletion rule between OwnedPokemon and Pokemasters would be deny, because an OwnedPokemon getting removed would not mean that a Pokemaster should be removed. The deletion rule for the relationship of OwnedPokemon to Pokedex would also be deny because removing one OwnedPokemon would not remove that whole pokemons population. In this table, the PokemasterID and PokemonID are being used as foreign keys here.

The Types table is a validation table with a 1:1 relationship with the PokemonType table. The manner of participation is mandatory and the degree of participation is 1:1. The deletion rule between the Types table and the PokemonType table is cascade. There would be no foreign key in this table, but TypeID would serve as a foreign key in PokemonType.