

Pokémon Database

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Outline

Our database is a model of the Pokémon (short for “Pocket Monsters”) world, created by Nintendo. In the Pokémon universe, players (“trainers”) collect quirky monsters and pit them in battle against other trainers, usually keeping a team of six at a time. Each monster has one or two particular types (water, grass, fire, etc.) and has its own unique skill set and statistics. The world is also filled with various locations that are traveled through in the game, where Pokémon can be encountered. In addition, trainers are scattered throughout the world, and they have different types of Pokémon that they typically carry.

One possible goal in the game is to catch all the Pokémon. Our database would help model the Pokédex system that gives the player information on the Pokémon caught, the Pokémon seen, the locations in the game, etc. This database encompasses the Generation I games (Red/Blue/Yellow) in the region of Kanto, which has 151 species of Pokémon.

Database Outline

Our database has four main entities: Pokémon, moves, trainers, and locations. The Pokémon table holds rows of Pokémon, which have a Pokédex number (Pokémon ID) (which is already determined by the game, so it is not auto-incrementing, since each number has a specific Pokémon associated with it), a species name, and at least one type. Each Pokémon must have a Pokédex number and a name, which must be unique. The primary key is the Pokédex number. An optional description may be included. The ID and name are required.

There are many moves that are available for Pokémon to learn. Each move has an ID that is auto-incrementing and a move name. Both of these keys cannot be null. Some moves can have a base damage, and have a number of times they can be used before needing to be replenished (power points). An optional description can include additional effects of a move. Each move must have a type, and only one type (described later). The primary key is the move ID, and the move name must be unique.

The Kanto region in Pokémon has many cities, towns, and routes. In these locations, wild or tame Pokémon can be found. Each location has an ID that is auto-incrementing and a location name, which must be unique. An optional description may be included. The primary key is the ID. The ID and location name cannot be null.

Trainer classes are found throughout the game, and these trainers challenge the player to battles throughout the game. Some examples include Bug Catchers, Fishermen, and Hikers. Each class has an ID

(auto-incrementing), a name (that is unique), and an optional description. The ID and name cannot be null.

In Generation I, there are 15 types, which are similar to elemental types (such as fire, ice, ground, etc.). Each type has an ID number that is auto-incrementing, and a type name. The ID number is the primary key, and the type name must be unique.

One relationship, mentioned earlier, is the many-to-one relationship between moves and types, where each type can have many moves, but each move can have only one type.

Another relationship is the many-to-many relationship between Pokémon and types. Each Pokémon has at least one type, and a maximum of two types. Each type can have many different Pokémon. This relationship is represented by a separate table where each row has a Pokémon ID and a type ID; the combination of the Pokémon ID and type ID makes up the primary key.

Some Pokémon evolve into others, while others do not evolve at all. We can represent this as a one-to-many relationship, where one Pokémon can have many predecessors. For example, Charizard has Charmeleon and Charmander as its predecessors. The table for this relationship has keys representing the evolved Pokémon ID and a predecessor Pokémon ID. The combination of the two keys is the primary key.

Pokémon can learn many moves, and moves can be learned by many Pokémon. This many-to-many relationship is represented by another table, and the keys are the Pokémon ID and the move ID, and the combination of the two makes up the primary key. As an example, Bulbasaur can learn the move Leech Seed. A Pokémon must be able to learn some set of moves (even Magikarp can learn two moves).

Many Pokémon can be found at many locations, and this many-to-many relationship is shown in a table with two keys: Pokémon ID and location ID. The combination makes up the primary key. Some Pokémon cannot be found in any locations (the rare Mew can only be obtained through a special Nintendo event and is not otherwise found in any in-game locations), and some locations may not have Pokémon.

Trainer classes typically have some types of Pokémon that they usually carry. For instance, Bug Catcher trainers usually have Bug and Poison Pokémon types. Other trainer classes may also have Bug or Poison types. This many-to-many relationship has the trainer ID and type ID as keys, and the primary key is the combination of the two.