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.

ER Diagram

See page 14.

Database Schema

See page 15.

Table Creation Queries

Our table creation queries consist of two parts: one file (pokedb_create.sql) to create the tables, and a second file (pokedb_prepopulate.sql) to populate the database.

```
-- ------------------------------------------------------------------------
--          Pokémon Database
--          Generation I (Red/blue/yellow/green)
--          Kanto region
-- ------------------------------------------------------------------------
DROP TABLE IF EXISTS `pokemon_types`;
DROP TABLE IF EXISTS `pokemon_predecessor`;
DROP TABLE IF EXISTS `pokemon_moves`;
DROP TABLE IF EXISTS `pokemon_location`;
DROP TABLE IF EXISTS `trainer_pkmntypes`;
DROP TABLE IF EXISTS `trainer_class`;
DROP TABLE IF EXISTS `moves`;
DROP TABLE IF EXISTS `locations`;
DROP TABLE IF EXISTS `pokemon`;
DROP TABLE IF EXISTS `types`;

-- ------------------------------------------------------------------------
--          `pokemon_db`.`types`
--          Pokémon types in Generation I
-- ------------------------------------------------------------------------
CREATE TABLE `types` (
          `type_id` int(11) NOT NULL AUTO_INCREMENT,
          `type_name` varchar(255) NOT NULL,
          PRIMARY KEY (`type_id`),
          UNIQUE KEY (`type_name`)
) ENGINE=InnoDB;

-- ------------------------------------------------------------------------
--          `pokemon_db`.`pokemon`
--          Pokémon species in Generation I
-- ------------------------------------------------------------------------
CREATE TABLE `pokemon` (
          `pokemon_id` int(11) NOT NULL,
          `name` varchar(255) NOT NULL,
          `description` varchar(255),
          PRIMARY KEY (`pokemon_id`),
          UNIQUE KEY (`name`)
) ENGINE=InnoDB;

-- ------------------------------------------------------------------------
--          `pokemon_db`.`locations`
--          Locations in the Kanto region
-- ------------------------------------------------------------------------
```

```
CREATE TABLE `locations` (
	`location_id` int(11) NOT NULL AUTO_INCREMENT,
	`location_name` varchar(255) NOT NULL,
	`description` varchar(255),
	PRIMARY KEY (`location_id`),
	UNIQUE KEY (`location_name`)
) ENGINE=InnoDB;

-- ----------------------------------------------------------------------
--	`pokemon_db`.`moves`
--	Pokémon moves in Generation I
-- ----------------------------------------------------------------------
CREATE TABLE `moves` (
	`move_id` int(11) NOT NULL AUTO_INCREMENT,
	`move_name` varchar(255) NOT NULL,
	`type` int(11) NOT NULL,
	`base_dmg` int(11) DEFAULT NULL,
	`power_pts` int(11),
	`description` varchar(255),
	PRIMARY KEY (`move_id`),
	UNIQUE KEY (`move_name`),
	FOREIGN KEY (`type`) REFERENCES `types` (`type_id`)
		ON DELETE CASCADE
		ON UPDATE CASCADE
) ENGINE=InnoDB;

-- ----------------------------------------------------------------------
--	`pokemon_db`.`trainer_class`
--	Trainer classes encountered in Generation I games
-- ----------------------------------------------------------------------
CREATE TABLE `trainer_class` (
	`class_id` int(11) NOT NULL AUTO_INCREMENT,
	`class_name` varchar(255) NOT NULL,
	`description` varchar(255),
	PRIMARY KEY (`class_id`),
	UNIQUE KEY (`class_name`)
) ENGINE=InnoDB;

-- ----------------------------------------------------------------------
--	`pokemon_db`.`trainer_pkmntypes`
--	Trainers and Pokémon types typically owned by trainer classes
--	Many-to-many (trainer and Pokemon types)
-- ----------------------------------------------------------------------
CREATE TABLE `trainer_pkmntypes` (
	`trainer_id` int(11) NOT NULL,
	`type_id` int(11) NOT NULL,
	PRIMARY KEY (`trainer_id`, `type_id`),
	FOREIGN KEY (`trainer_id`) REFERENCES `trainer_class` (`class_id`)
```

```
                ON DELETE CASCADE
                ON UPDATE CASCADE,
        FOREIGN KEY (`type_id`) REFERENCES `types` (`type_id`)
                ON DELETE CASCADE
                ON UPDATE CASCADE
) ENGINE=InnoDB;

-- ----------------------------------------------------------------------------
--      `pokemon_db`.`pokemon_location`
--      Pokémon found in locations in the Kanto region
--      Many-to-many (location and Pokémon species)
-- ----------------------------------------------------------------------------
CREATE TABLE `pokemon_location` (
        `pid` int(11) NOT NULL,
        `lid` int(11) NOT NULL,
        PRIMARY KEY (`pid`, `lid`),
        FOREIGN KEY (`pid`) REFERENCES `pokemon` (`pokemon_id`)
                ON DELETE CASCADE
                ON UPDATE CASCADE,
        FOREIGN KEY (`lid`) REFERENCES `locations` (`location_id`)
                ON DELETE CASCADE
                ON UPDATE CASCADE
) ENGINE=InnoDB;

-- ----------------------------------------------------------------------------
--      `pokemon_db`.`pokemon_moves`
--      Moves learned by Pokemon species
--      Many-to-many (moves and Pokémon species)
-- ----------------------------------------------------------------------------
CREATE TABLE `pokemon_moves` (
        `mid` int(11) NOT NULL,
        `pid` int(11) NOT NULL,
        PRIMARY KEY (`mid`, `pid`),
        FOREIGN KEY (`mid`) REFERENCES `moves` (`move_id`)
                ON DELETE CASCADE
                ON UPDATE CASCADE,
        FOREIGN KEY (`pid`) REFERENCES `pokemon` (`pokemon_id`)
                ON DELETE CASCADE
                ON UPDATE CASCADE
) ENGINE=InnoDB;

-- ----------------------------------------------------------------------------
--      `pokemon_db`.`pokemon_predecessor`
--      Pokémon and their predecessors
--      One-to-many relationship (one Pokémon can have many predecessors)
-- ----------------------------------------------------------------------------
CREATE TABLE `pokemon_predecessor` (
        `evolution_pid` int(11) NOT NULL,
```

```
	`predecessor_pid` int(11) NOT NULL,
	PRIMARY KEY (`evolution_pid`, `predecessor_pid`),
	FOREIGN KEY (`evolution_pid`) REFERENCES `pokemon` (`pokemon_id`)
		ON DELETE CASCADE
		ON UPDATE CASCADE,
	FOREIGN KEY (`predecessor_pid`) REFERENCES `pokemon` (`pokemon_id`)
		ON DELETE CASCADE
		ON UPDATE CASCADE
) ENGINE=InnoDB;

-- ----------------------------------------------------------------------
--	`pokemon_db`.`pokemon_types`
--	Pokémon and their types
--	Many-to-many relationship (Pokémon can have 1-2 types, and types can have
--		many Pokémon)
-- ----------------------------------------------------------------------
CREATE TABLE `pokemon_types` (
	`pid` int(11) NOT NULL,
	`tid` int(11) NOT NULL,
	PRIMARY KEY (`pid`, `tid`),
	FOREIGN KEY (`pid`) REFERENCES `pokemon` (`pokemon_id`)
		ON DELETE CASCADE
		ON UPDATE CASCADE,
	FOREIGN KEY (`tid`) REFERENCES `types` (`type_id`)
		ON DELETE CASCADE
		ON UPDATE CASCADE
) ENGINE=InnoDB;

-- ----------------------------------------------------------------------
--	Pokemon Database
--	Prepopulating tables with data from the very beginning of games
-- ----------------------------------------------------------------------

-- ----------------------------------------------------------------------
--	Prepopulating `types`
--	(Bulbasaur, Squirtle, Charmander, Rattata, etc.)
-- ----------------------------------------------------------------------
INSERT INTO types (type_name) VALUES ("grass");
INSERT INTO types (type_name) VALUES ("water");
INSERT INTO types (type_name) VALUES ("fire");
INSERT INTO types (type_name) VALUES ("normal");
INSERT INTO types (type_name) VALUES ("flying");
INSERT INTO types (type_name) VALUES ("poison");
INSERT INTO types (type_name) VALUES ("bug");

-- ----------------------------------------------------------------------
--	Prepopulating `pokemon`
-- ----------------------------------------------------------------------
```

```
INSERT INTO pokemon (pokemon_id, name, description) VALUES (1, "Bulbasaur", "A strange seed was planted on its back at birth. This plant sprouts and grows with this Pokemon.");
INSERT INTO pokemon (pokemon_id, name, description) VALUES (4, "Charmander", "Obviously prefers hot places. When it rains, steam is said to spout from the top of its tail.");
INSERT INTO pokemon (pokemon_id, name, description) VALUES (7, "Squirtle", "After birth, its back swells and hardens into a shell. Powerfully sprays foam from its mouth.");
INSERT INTO pokemon (pokemon_id, name, description) VALUES (10, "Caterpie", "Its short feet are tipped with suction pads that enable it to tirelessly climb slopes and walls.");
INSERT INTO pokemon (pokemon_id, name, description) VALUES (11, "Metapod", "This Pokemon is vulnerable to attack while its shell is soft, exposing its weak and tender body.");
INSERT INTO pokemon (pokemon_id, name, description) VALUES (13, "Weedle", "Often found in forests, eating leaves. It has a sharp venomous stinger on its head.");
INSERT INTO pokemon (pokemon_id, name, description) VALUES (14, "Kakuna", "Almost incapable of moving, this Pokemon can only harden its shell to protect itself from predators.");
INSERT INTO pokemon (pokemon_id, name, description) VALUES (16, "Pidgey", "A common sight in forests and woods. It flaps its wings at ground level to kick up blinding sand.");
INSERT INTO pokemon (pokemon_id, name, description) VALUES (19, "Rattata", "Bites anything when it attacks. Small and very quick, it is a common sight in many places.");
INSERT INTO pokemon (pokemon_id, name, description) VALUES (21, "Spearow", "Eats bugs in grassy areas. It has to flap its short wings at high speed to stay airborne.");

-- ----------------------------------------------------------------------
--        Prepopulating `locations`
-- ----------------------------------------------------------------------
INSERT INTO locations (location_name, description) VALUES ("Pallet Town", "A fairly new and quiet town. It's a small and pretty place.");
INSERT INTO locations (location_name, description) VALUES ("Route 1", "A country road full of greenery and rough paths.");
INSERT INTO locations (location_name, description) VALUES ("Viridian City", "A beautiful city that is enveloped in green year-round.");
INSERT INTO locations (location_name, description) VALUES ("Route 2", "A path that winds and bends from the forest's entrance.");
INSERT INTO locations (location_name) VALUES ("Viridian Forest");
INSERT INTO locations (location_name, description) VALUES ("Route 3", "A road where many rocks have fallen from the sky to create craters.");

-- ----------------------------------------------------------------------
--        Prepopulating `moves`
-- ----------------------------------------------------------------------
INSERT INTO moves (move_name, type, power_pts, description) VALUES ("Growl", (SELECT type_id FROM `types` WHERE type_name = "normal"), 40, "Lowers the target's Attack by one stage.");
INSERT INTO moves (move_name, type, base_dmg, power_pts) VALUES ("Tackle", (SELECT type_id FROM `types` WHERE type_name = "normal"), 35, 35);
INSERT INTO moves (move_name, type, power_pts, description) VALUES ("Leech Seed", (SELECT type_id FROM `types` WHERE type_name = "grass"), 10, "Leeches 1/16 of the target's HP each turn.");
INSERT INTO moves (move_name, type, base_dmg, power_pts) VALUES ("Scratch", (SELECT type_id FROM `types` WHERE type_name = "normal"), 40, 35);
```

```
INSERT INTO moves (move_name, type, base_dmg, power_pts, description) VALUES ("Ember", (SELECT type_id FROM `types` WHERE type_name = "fire"), 40, 25, "10% chance to burn the target.");
INSERT INTO moves (move_name, type, power_pts, description) VALUES ("Tail Whip", (SELECT type_id FROM `types` WHERE type_name = "normal"), 30, "Lowers the Defense of all opposing adjacent Pokémon by one stage.");
INSERT INTO moves (move_name, type, base_dmg, power_pts, description) VALUES ("Bubble", (SELECT type_id FROM `types` WHERE type_name = "water"), 20, 30, "10% chance to lower the target's Speed by one stage.");
INSERT INTO moves (move_name, type, power_pts, description) VALUES ("String Shot", (SELECT type_id FROM `types` WHERE type_name = "bug"), 40, "Lowers the target's Speed by one stage.");
INSERT INTO moves (move_name, type, base_dmg, power_pts, description) VALUES ("Poison Sting", (SELECT type_id FROM `types` WHERE type_name = "poison"), 15, 35, "20% chance to poison the target.");
INSERT INTO moves (move_name, type, base_dmg, power_pts) VALUES ("Gust", (SELECT type_id FROM `types` WHERE type_name = "normal"), 40, 35);
INSERT INTO moves (move_name, type, power_pts, description) VALUES ("Sand Attack", (SELECT type_id FROM `types` WHERE type_name = "normal"), 15, "Lowers the target's Accuracy by one stage.");
INSERT INTO moves (move_name, type, base_dmg, power_pts) VALUES ("Peck", (SELECT type_id FROM `types` WHERE type_name = "flying"), 35, 35);
INSERT INTO moves (move_name, type, power_pts, description) VALUES ("Harden", (SELECT type_id FROM `types` WHERE type_name = "normal"), 30, "Boosts the user's Defense by one stage.");

-- -----------------------------------------------------------------------------
--        Prepopulating `trainer_class`
-- -----------------------------------------------------------------------------
INSERT INTO trainer_class (class_name, description) VALUES ("Bug Catcher", "Young children in hats carrying nets.");
INSERT INTO trainer_class (class_name, description) VALUES ("Lass", "Young girls in school uniforms.");
INSERT INTO trainer_class (class_name, description) VALUES ("Youngster", "Young boys wearing caps and shorts.");

-- -----------------------------------------------------------------------------
--        Prepopulating `trainer_pkmntypes`
-- -----------------------------------------------------------------------------
INSERT INTO trainer_pkmntypes (trainer_id, type_id) VALUES ((SELECT class_id FROM trainer_class WHERE class_name = "Bug Catcher"), (SELECT type_id FROM types WHERE type_name = "bug"));
INSERT INTO trainer_pkmntypes (trainer_id, type_id) VALUES ((SELECT class_id FROM trainer_class WHERE class_name = "Bug Catcher"), (SELECT type_id FROM types WHERE type_name = "poison"));
INSERT INTO trainer_pkmntypes (trainer_id, type_id) VALUES ((SELECT class_id FROM trainer_class WHERE class_name = "Lass"), (SELECT type_id FROM types WHERE type_name = "normal"));
INSERT INTO trainer_pkmntypes (trainer_id, type_id) VALUES ((SELECT class_id FROM trainer_class WHERE class_name = "Lass"), (SELECT type_id FROM types WHERE type_name = "flying"));
INSERT INTO trainer_pkmntypes (trainer_id, type_id) VALUES ((SELECT class_id FROM trainer_class WHERE class_name = "Youngster"), (SELECT type_id FROM types WHERE type_name = "normal"));
INSERT INTO trainer_pkmntypes (trainer_id, type_id) VALUES ((SELECT class_id FROM trainer_class WHERE class_name = "Youngster"), (SELECT type_id FROM types WHERE type_name = "flying"));

-- -----------------------------------------------------------------------------
```

```
--          Prepopulating `pokemon_location`
-- ----------------------------------------------------------------------------
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Rattata"), (SELECT location_id FROM locations WHERE location_name = "Route 1"));
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Rattata"), (SELECT location_id FROM locations WHERE location_name = "Route 2"));
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Caterpie"), (SELECT location_id FROM locations WHERE location_name = "Viridian Forest"));
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Weedle"), (SELECT location_id FROM locations WHERE location_name = "Route 2"));
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Weedle"), (SELECT location_id FROM locations WHERE location_name = "Viridian Forest"));
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Pidgey"), (SELECT location_id FROM locations WHERE location_name = "Route 1"));
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Pidgey"), (SELECT location_id FROM locations WHERE location_name = "Route 2"));
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Pidgey"), (SELECT location_id FROM locations WHERE location_name = "Route 3"));
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Spearow"), (SELECT location_id FROM locations WHERE location_name = "Route 3"));
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Metapod"), (SELECT location_id FROM locations WHERE location_name = "Viridian Forest"));
INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Kakuna"), (SELECT location_id FROM locations WHERE location_name = "Viridian Forest"));

-- ----------------------------------------------------------------------------
--          Prepopulating `pokemon_moves`
-- ----------------------------------------------------------------------------
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Growl"), (SELECT pokemon_id FROM pokemon WHERE name = "Bulbasaur"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Tackle"), (SELECT pokemon_id FROM pokemon WHERE name = "Bulbasaur"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Leech Seed"), (SELECT pokemon_id FROM pokemon WHERE name = "Bulbasaur"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Growl"), (SELECT pokemon_id FROM pokemon WHERE name = "Charmander"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Scratch"), (SELECT pokemon_id FROM pokemon WHERE name = "Charmander"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Ember"), (SELECT pokemon_id FROM pokemon WHERE name = "Charmander"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Tackle"), (SELECT pokemon_id FROM pokemon WHERE name = "Squirtle"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Tail Whip"), (SELECT pokemon_id FROM pokemon WHERE name = "Squirtle"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Bubble"), (SELECT pokemon_id FROM pokemon WHERE name = "Squirtle"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Tackle"), (SELECT pokemon_id FROM pokemon WHERE name = "Caterpie"));
```

```
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"String Shot"), (SELECT pokemon_id FROM pokemon WHERE name = "Caterpie"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Harden"), (SELECT pokemon_id FROM pokemon WHERE name = "Metapod"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Harden"), (SELECT pokemon_id FROM pokemon WHERE name = "Kakuna"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Gust"), (SELECT pokemon_id FROM pokemon WHERE name = "Pidgey"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Sand Attack"), (SELECT pokemon_id FROM pokemon WHERE name = "Pidgey"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Tackle"), (SELECT pokemon_id FROM pokemon WHERE name = "Rattata"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Tail Whip"), (SELECT pokemon_id FROM pokemon WHERE name = "Rattata"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Peck"), (SELECT pokemon_id FROM pokemon WHERE name = "Spearow"));
INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name =
"Growl"), (SELECT pokemon_id FROM pokemon WHERE name = "Spearow"));

-- ----------------------------------------------------------------------------
--          Prepopulating `pokemon_predecessor`
-- ----------------------------------------------------------------------------
INSERT INTO pokemon_predecessor (evolution_pid, predecessor_pid) VALUES ((SELECT pokemon_id
FROM pokemon WHERE name = "Metapod"), (SELECT pokemon_id FROM pokemon WHERE name =
"Caterpie"));
INSERT INTO pokemon_predecessor (evolution_pid, predecessor_pid) VALUES ((SELECT pokemon_id
FROM pokemon WHERE name = "Kakuna"), (SELECT pokemon_id FROM pokemon WHERE name =
"Weedle"));

-- ----------------------------------------------------------------------------
--          Prepopulating `pokemon_types`
-- ----------------------------------------------------------------------------
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Bulbasaur"), (SELECT type_id FROM types WHERE type_name = "grass"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Bulbasaur"), (SELECT type_id FROM types WHERE type_name = "poison"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Charmander"), (SELECT type_id FROM types WHERE type_name = "fire"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Squirtle"), (SELECT type_id FROM types WHERE type_name = "water"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Caterpie"), (SELECT type_id FROM types WHERE type_name = "bug"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Metapod"), (SELECT type_id FROM types WHERE type_name = "bug"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Weedle"), (SELECT type_id FROM types WHERE type_name = "bug"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name =
"Weedle"), (SELECT type_id FROM types WHERE type_name = "poison"));
```

INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name = "Kakuna"), (SELECT type_id FROM types WHERE type_name = "bug"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name = "Kakuna"), (SELECT type_id FROM types WHERE type_name = "poison"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name = "Pidgey"), (SELECT type_id FROM types WHERE type_name = "normal"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name = "Pidgey"), (SELECT type_id FROM types WHERE type_name = "flying"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name = "Rattata"), (SELECT type_id FROM types WHERE type_name = "normal"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name = "Spearow"), (SELECT type_id FROM types WHERE type_name = "normal"));
INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name = "Spearow"), (SELECT type_id FROM types WHERE type_name = "flying"));

General Use Queries

For learning about a Pokemon, we have six queries combined together. A user selects a Pokemon by name, and gets the following results:

- SELECT pokemon_id FROM pokemon WHERE name = [nameInput];
- SELECT name FROM pokemon WHERE name = [nameInput];
- SELECT description FROM pokemon WHERE name = [nameInput];
- SELECT moves.move_name FROM moves INNER JOIN pokemon_moves ON pokemon_moves.mid = moves.move_id INNER JOIN pokemon ON pokemon.pokemon_id = pokemon_moves.pid WHERE pokemon.name = [nameInput];
- SELECT types.type_name FROM types INNER JOIN pokemon_types ON pokemon_types.tid = types.type_id INNER JOIN pokemon ON pokemon.pokemon_id = pokemon_types.pid WHERE pokemon.name = [nameInput];
- SELECT p1.name FROM pokemon p1 INNER JOIN pokemon_predecessor pp ON pp.predecessor_pid = p1.pokemon_id INNER JOIN pokemon p2 ON p2.pokemon_id = pp.evolution_pid WHERE p2.name = [nameInput];

Adding Pokemon involves typing in the correct Pokedex ID, the name, and an optional description.

- INSERT INTO pokemon (pokemon_id, name, description) VALUES ([numberInput], [nameInput], [descriptionInput]);

A Pokemon and its predecessors can be added.

- INSERT INTO pokemon_predecessor (evolution_pid, predecessor_pid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name = [evolutionName]), (SELECT pokemon_id FROM pokemon WHERE name = [predecessorName]);

Deleting Pokemon requires selecting the name of the Pokemon to delete.

- DELETE FROM pokemon WHERE name = [nameInput];

Types can be added by supplying a type name, and deleted by selecting the type name.

- INSERT INTO types (type_name) VALUES ([typeName]);
- DELETE FROM types WHERE name = [typeName];

Once a Pokemon and its type are added, users can associate the Pokemon with a type.

- INSERT INTO pokemon_types (pid, tid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name = [nameInput]), (SELECT type_id FROM types WHERE type_name = [typeName]));

Users can choose a move by name to learn about. This involves the following:

- SELECT move_name FROM moves WHERE move_name = [moveName];
- SELECT types.type_name FROM types INNER JOIN moves ON moves.type = types.type_id WHERE moves.move_name = [moveName];
- SELECT base_dmg FROM moves WHERE move_name = [moveName];
- SELECT power_pts FROM moves WHERE move_name = [moveName];
- SELECT description FROM moves WHERE move_name = [moveName];

Moves can be added by entering a name, selecting a type, entering a base damage, power points, and a description. Moves can be deleted by selecting the name. Moves can be updated by selecting the name and changing the base damage and power points.

- INSERT INTO moves (move_name, type, base_dmg, power_pts, description) VALUES ([moveName], (SELECT type_id FROM types WHERE type_name = [typeName]), [baseDmg], [powerPts], [moveDescription]);
- DELETE FROM moves WHERE move_name = [moveName];
- UPDATE moves SET base_dmg = [baseDmg], power_pts = [powerPts] WHERE name = [moveName];

Users can associate a Pokemon with a move by selecting the move name and the Pokemon name.

- INSERT INTO pokemon_moves (mid, pid) VALUES ((SELECT move_id FROM moves WHERE move_name = [moveName]), (SELECT pokemon_id FROM pokemon WHERE name = [pokemonName]));

Locations can be added by supplying a name and description, and the name can be selected for deletion.

- INSERT INTO locations (location_name, description) VALUES ([locationName], [locationDescription]);
- DELETE FROM locations WHERE location_name = [locationName];

Another option is to add a Pokemon sighting in a location. This requires that the Pokemon and location to be selected are already added to the database.

- INSERT INTO pokemon_location (pid, lid) VALUES ((SELECT pokemon_id FROM pokemon WHERE name = [nameInput]), (SELECT location_id FROM locations WHERE location_name = [locationInput]));

A user can also select a trainer class to get more information. This combines three queries:

- SELECT class_name FROM trainer_class WHERE name = [classInput];
- SELECT description FROM trainer_class WHERE name = [classInput];
- SELECT types.type_name FROM types INNER JOIN trainer_pkmntypes ON trainer_pkmntypes.type_id = types.type_id INNER JOIN trainer_class ON trainer_class.class_id = trainer_pkmntypes.trainer_id WHERE trainer_class.class_name = [classInput];

Users can add trainers by typing in a name and description. A type can be associated with a trainer. Select a trainer class name to delete it.

- INSERT INTO trainer_class (class_name, description) VALUES ([trainerName], [trainerDescription]);
- INSERT INTO trainer_pkmntypes (trainer_id, type_id) VALUES ((SELECT class_id FROM trainer_class WHERE class_name = [className]), (SELECT type_id FROM types WHERE type_name = [typeName]);
- DELETE FROM trainer_class WHERE class_name = [trainerName];

With these statements, it is possible to add to every table, including establishing relationships. We can also delete from tables, and can

Pokémon Database

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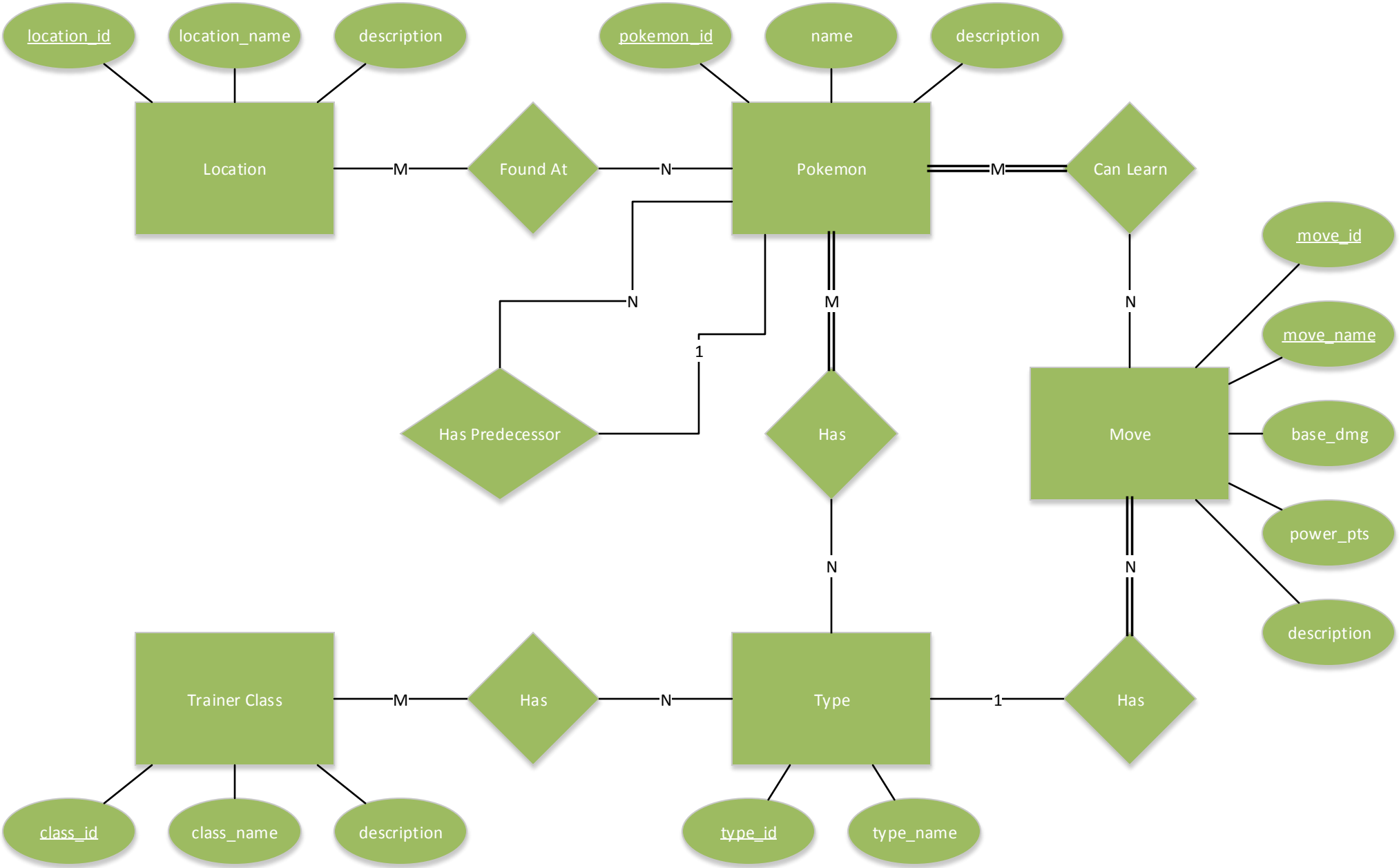

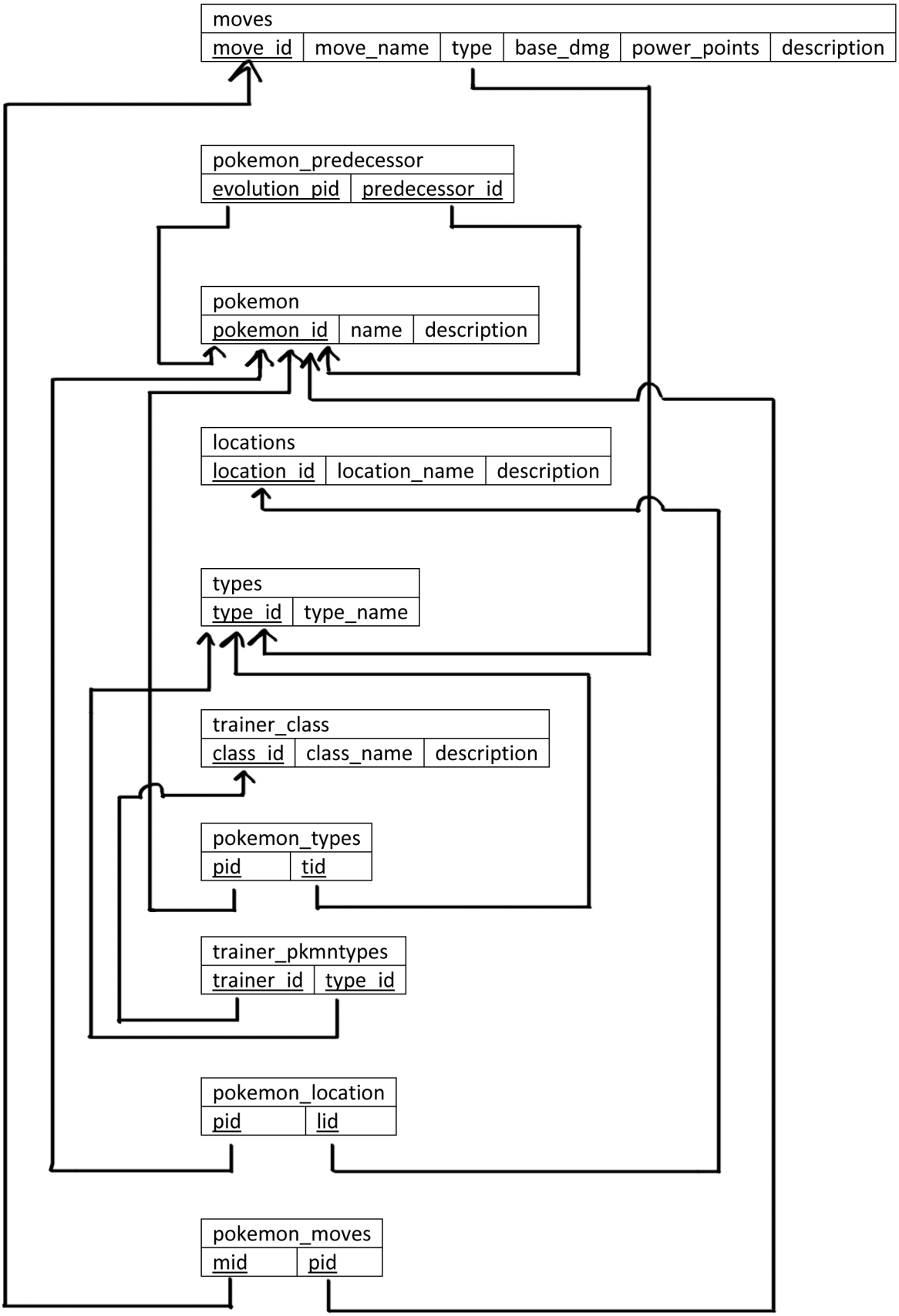
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