BLG317E Database Systems Term Project Report

Members

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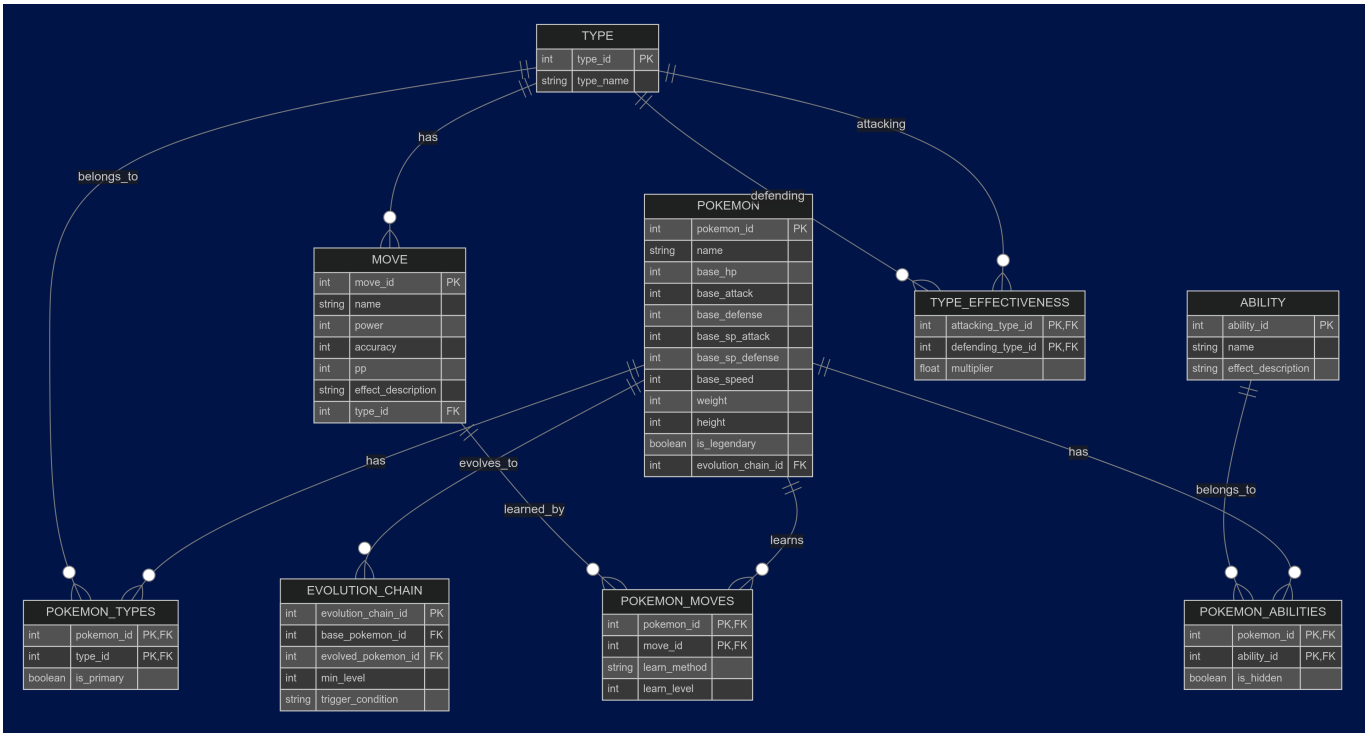
Database Structure

Overview

Our database consists of Pokemon data, incluuding information about their height, weight, types, moves and abilities. It is sourced from an open source project, PokeAPI.

Entity Relationship Diagram (ERD)



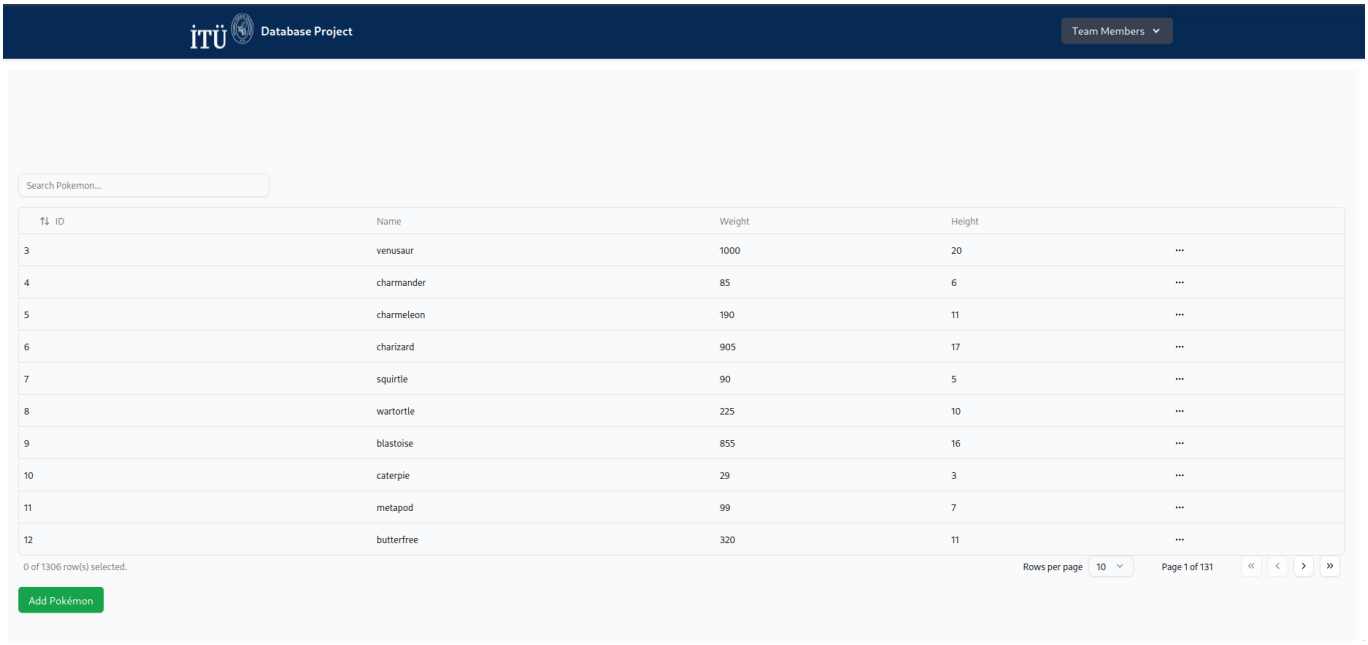
Application

The web app is built with the following stack:

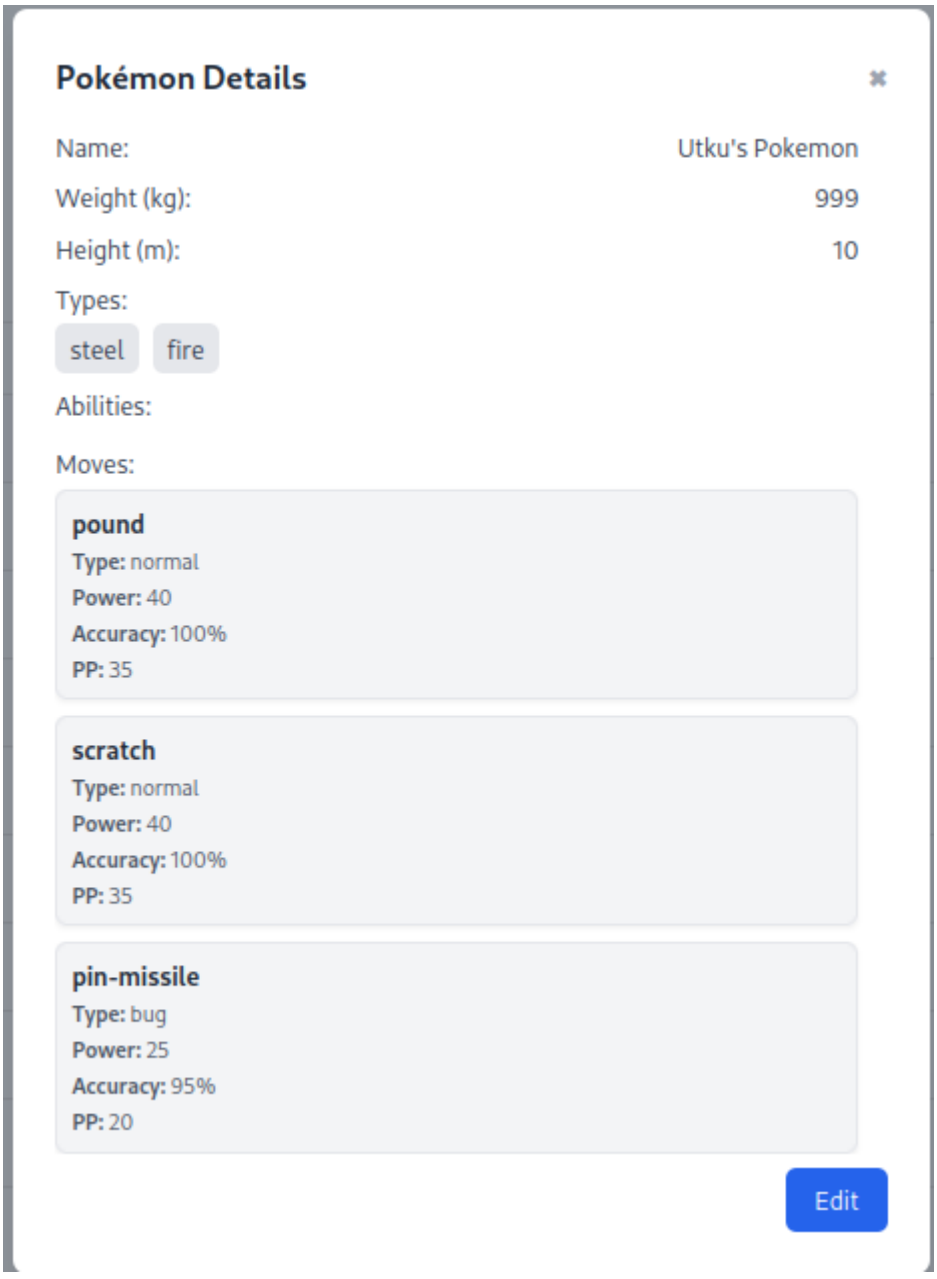
- **Frontend:** Vite + React + shadcn
- **Backend:** NestJS
- **Database:** PostgreSQL

Screenshots

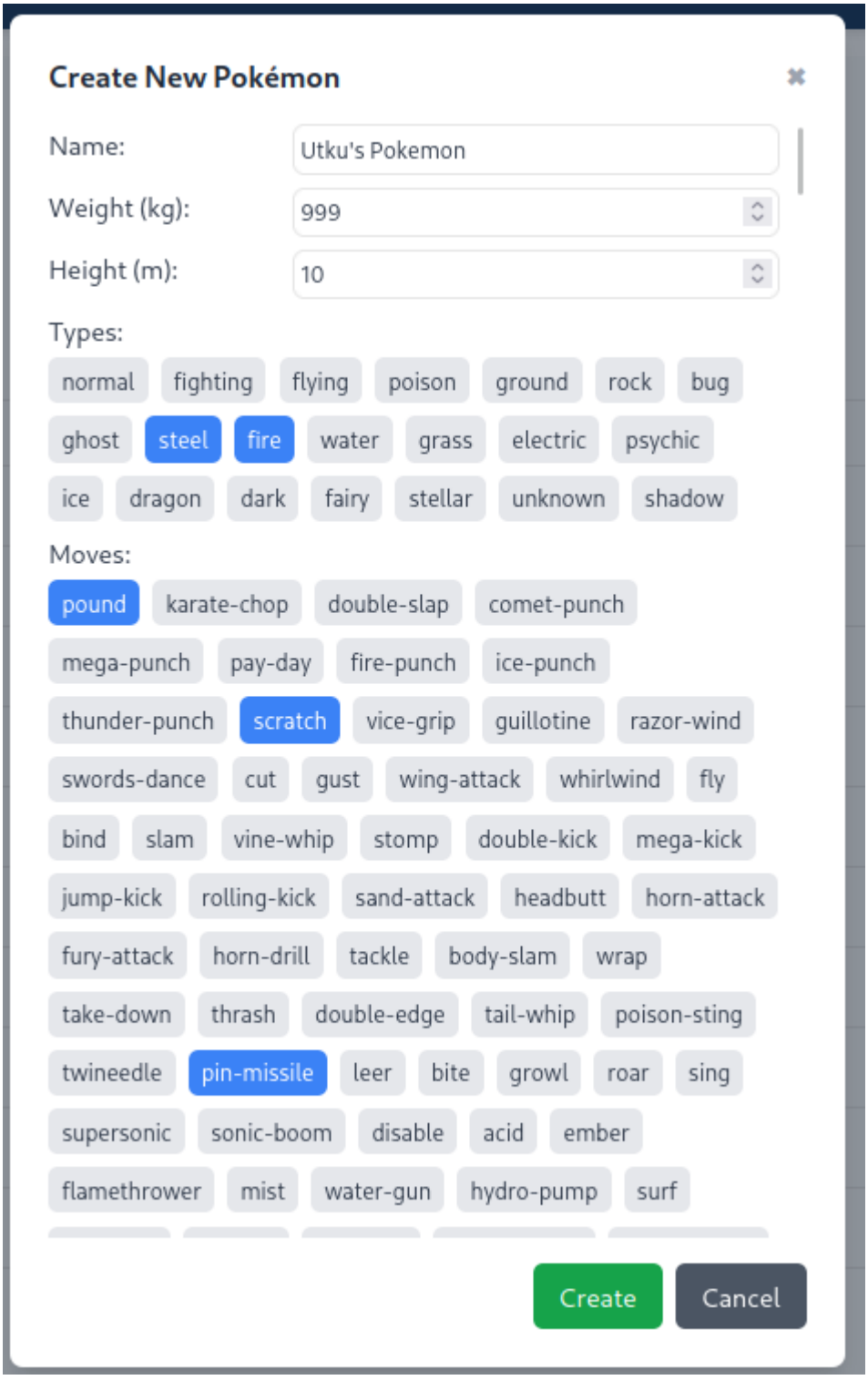
Main Page



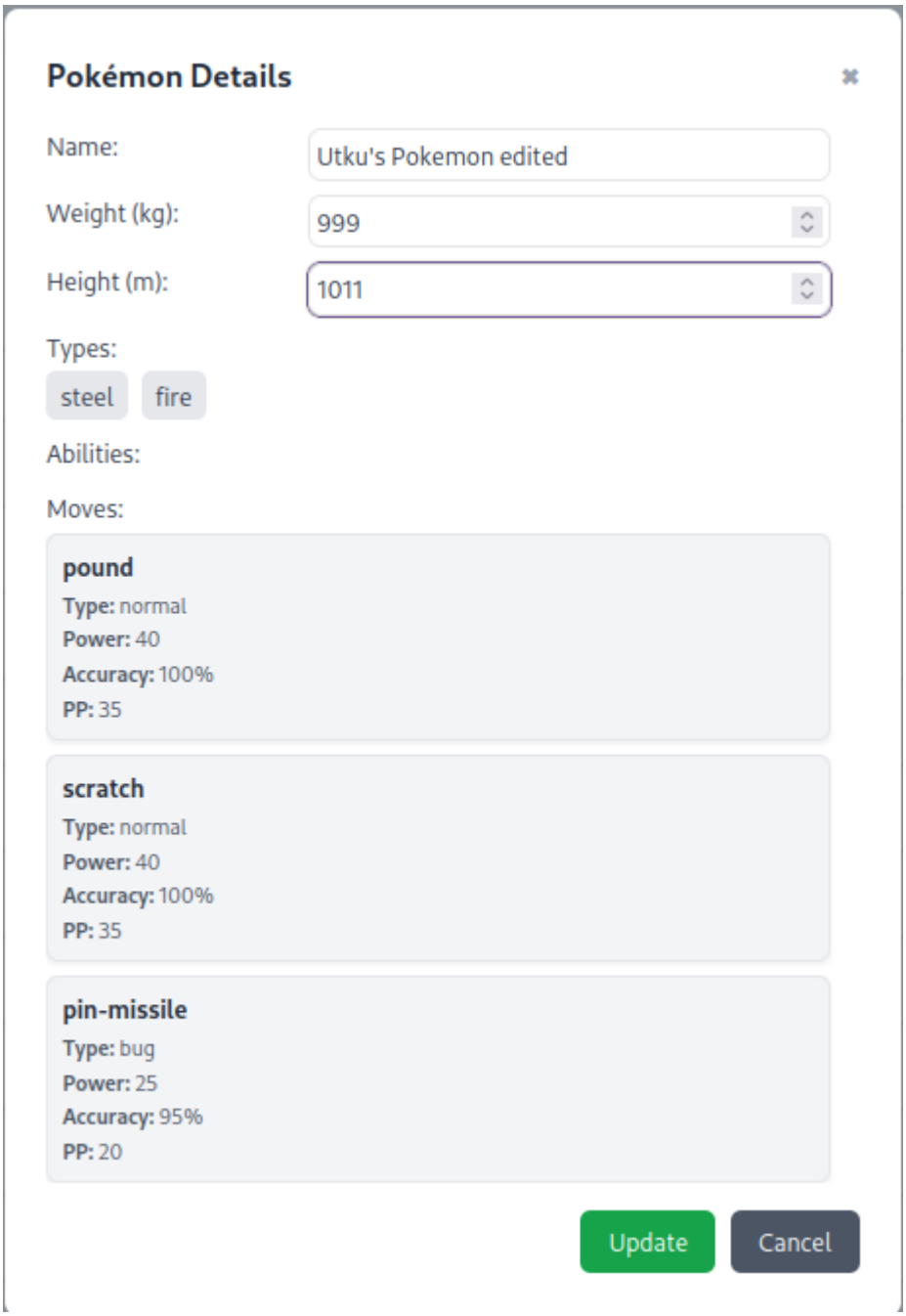
Viewing a Pokemon



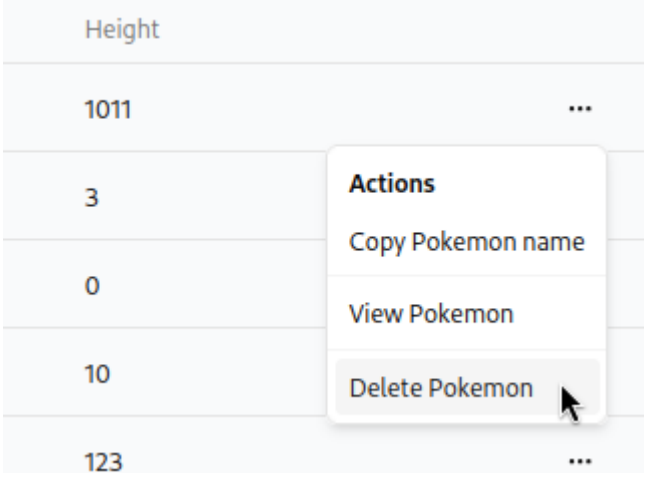
Adding a Pokemon



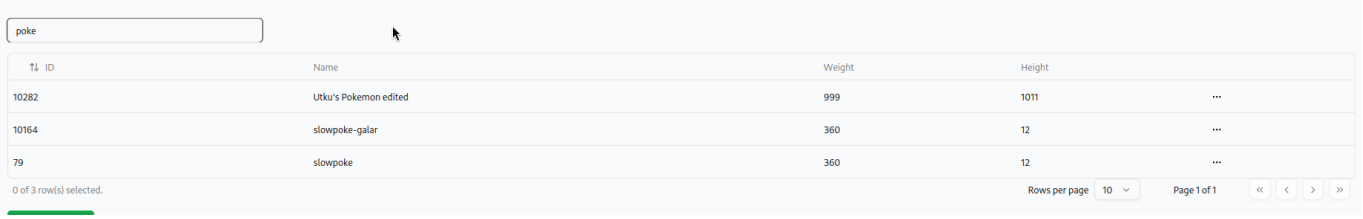
Editing a Pokemon



Deleting a Pokemon



Searching for a Pokemon



SQL Queries & CRUD Operations

ability/:

- all : returns all rows from the ABILITY table. `SELECT * FROM ability;`
- from_pokemon : returns the abilities which a specific pokemon has. `SELECT ability.ability_id, ability.name FROM ability JOIN pokemon_abilities ON ability.ability_id = pokemon_abilities.ability_id WHERE pokemon_abilities.pokemon_id = $1;`
- new : creates a new relation in the POKEMON_ABILITY table from the pokemon ID, ability ID and is hidden values. `INSERT INTO pokemon_abilities VALUES ($1, $2, $3);`

effectiveness/:

- all : returns all rows from the EFFECTIVENESS table. `SELECT * FROM type_effectiveness;`
- from_attack_type : returns the effectiveness values of a attacking pokemon type ID. `SELECT * FROM type_effectiveness WHERE attacking_type_id = $1;`
- from_attack_type : returns the effectiveness values of a defending pokemon type ID. `SELECT * FROM type_effectiveness WHERE defending_type_id = $1;`

move/:

- all : returns all rows from the MOVE table. Joins the TYPE table to also fetch the type of the move. `SELECT move.move_id, move.name, move.power, move.accuracy, move.pp, type.type_id, type.type_name FROM move JOIN type ON move.type_id = type.type_id;`
- from_pokemon : returns the moves which a specific pokemon has. `SELECT type.move_id, type.name FROM move JOIN pokemon_moves ON move.move_id = pokemon_moves.move_id WHERE pokemon_moves.pokemon_id = $1;`
- new : creates a new relation in the POKEMON_MOVE table from the pokemon ID, move ID and learn level values. `INSERT INTO pokemon_moves VALUES ($1, $2, $3);`

pokemon/:

- all : returns all rows from the POKEMON table. `SELECT * FROM pokemon;`
- delete : deletes a row from the POKEMON table, and all relations that this pokemon has with TYPE, MOVE and ABILITY tables. `DELETE FROM pokemon WHERE pokemon_id = $1; DELETE FROM`

`pokemon_types WHERE pokemon_id = $1; DELETE FROM pokemon_moves WHERE pokemon_id = $1; DELETE FROM pokemon_abilities WHERE pokemon_id = $1;`

- from_ability : returns the rows from the POKEMON table that has a specific ability which is specified by its ID. `SELECT pokemon.pokemon_id, name, height, weight FROM pokemon JOIN pokemon_abilities ON pokemon.pokemon_id = pokemon_abilities.pokemon_id WHERE pokemon_abilities.ability_id = $1;`
- from_move : returns the rows from the POKEMON table that has a specified move which is specified by its ID. `SELECT pokemon.pokemon_id, name, height, weight FROM pokemon JOIN pokemon_moves ON pokemon.pokemon_id = pokemon_moves.pokemon_id WHERE pokemon_moves.move_id = $1;`
- get : returns the row from the POKEMON table which has a specified pokemon ID. `SELECT * FROM pokemon WHERE pokemon_moves.move_id = $1;`
- get_max_id : returns the maximum of the ID values from the POKEMON table which will be used to generate a new and unique ID. `SELECT MAX(pokemon_id) FROM pokemon;`
- new : creates a new row in the POKEMONS table from the ID, name, weight and height properties. `INSERT INTO pokemon (pokemon_id, name, weight, height) VALUES ($1, $2, $3, $4);`
- update : updates the weight, height and name properties in the POKEMON table from an ID. `UPDATE pokemon SET (name = $2, height = $3, weight = $4) WHERE pokemon_id = $1;`

type/:

- all : returns all rows from the TYPE table rows. `SELECT * FROM type;`
- from_pokemon : returns the types which a specific pokemon has. `SELECT type.type_id, type.type_name FROM type JOIN pokemon_types ON type.type_id = pokemon_types.type_id WHERE pokemon_types.pokemon_id = $1;`
- new : creates a new relation in the POKEMON_TYPE table from the pokemon ID, type ID and is primary values. `INSERT INTO pokemon_types VALUES ($1, $2, $3);`