

BLG317E Database Systems Term Project Report

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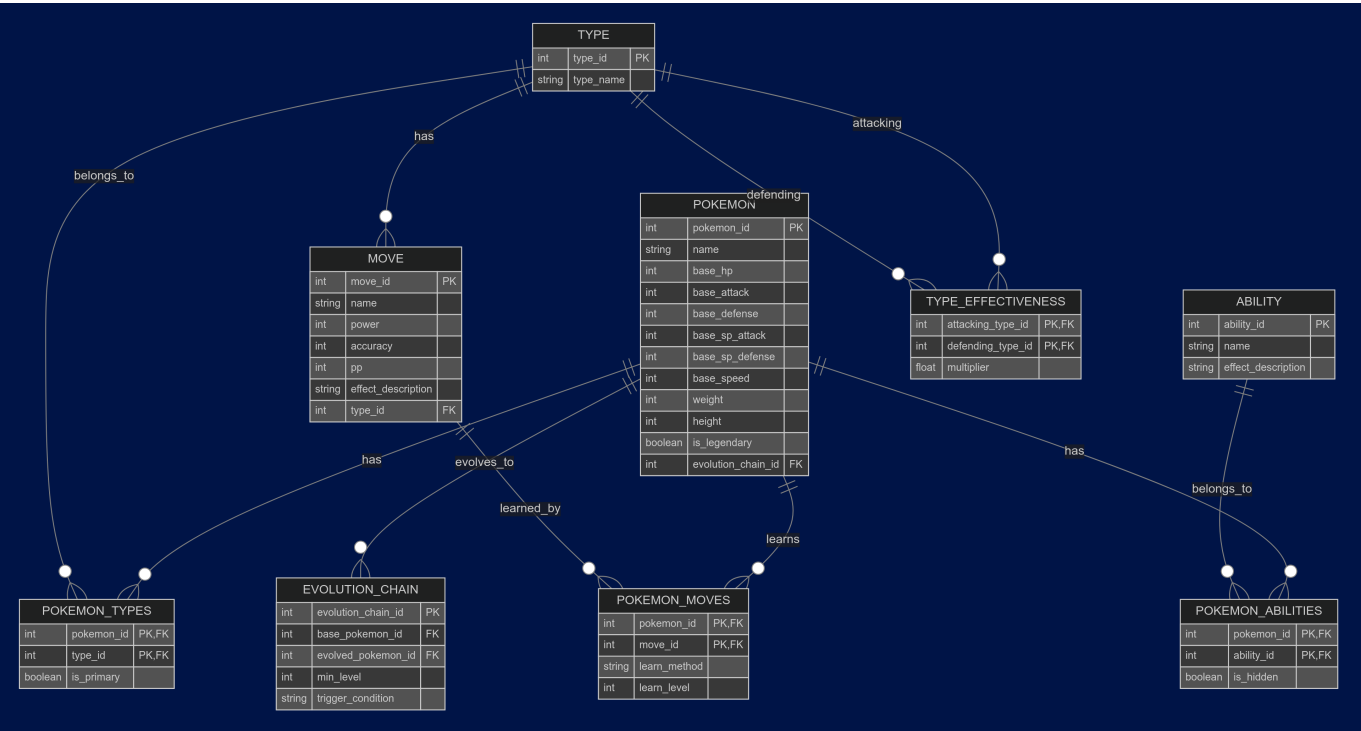
Frontend - SQL Queries

Database Structure

Overview

Our database consists of Pokemon data, including 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

itüDatabase Project

Team Members

Search Pokemon...

ID	Name	Weight	Height	
3	venusaur	1000	20	...
4	charmander	85	6	...
5	charmeleon	190	11	...
6	charizard	905	17	...
7	squirtle	90	5	...
8	wartortle	225	10	...
9	blastoise	855	16	...
10	caterpie	29	3	...
11	metapod	99	7	...
12	butterfree	320	11	...

0 of 1306 row(s) selected.

Rows per page10Page 1 of 131

Add Pokémon

Viewing a Pokemon

Pokémon Details

Name:

Utku's Pokemon

Weight (kg):

999

Height (m):

10

Types:

steel

fire

Abilities:

Moves:

pound

Type: normal

Power: 40

Accuracy: 100%

PP: 35

scratch

Type: normal

Power: 40

Accuracy: 100%

PP: 35

pin-missile

Type: bug

Power: 25

Accuracy: 95%

PP: 20

Edit

Adding a Pokemon

Create New Pokémon

Name:

Utku's Pokemon

Weight (kg):

999

Height (m):

10

Types:

normal

fighting

flying

poison

ground

rock

bug

ghost

steel

fire

water

grass

electric

psychic

ice

dragon

dark

fairy

stellar

unknown

shadow

Moves:

pound

karate-chop

double-slap

comet-punch

mega-punch

pay-day

fire-punch

ice-punch

thunder-punch

scratch

vice-grip

guillotine

razor-wind

swords-dance

cut

gust

wing-attack

whirlwind

fly

bind

slam

vine-whip

stomp

double-kick

mega-kick

jump-kick

rolling-kick

sand-attack

headbutt

horn-attack

fury-attack

horn-drill

tackle

body-slam

wrap

take-down

thrash

double-edge

tail-whip

poison-sting

twineedle

pin-missile

leer

bite

growl

roar

sing

supersonic

sonic-boom

disable

acid

ember

flamethrower

mist

water-gun

hydro-pump

surf

Create

Cancel

Editing a Pokemon

Pokémon Details

Name:

Utku's Pokemon edited

Weight (kg):

999

Height (m):

1011

Types:

steel

fire

Abilities:

Moves:

pound

Type: normal

Power: 40

Accuracy: 100%

PP: 35

scratch

Type: normal

Power: 40

Accuracy: 100%

PP: 35

pin-missile

Type: bug

Power: 25

Accuracy: 95%

PP: 20

Update

Cancel

Deleting a Pokemon

A screenshot of a web application showing a table with columns 'Height', 'Weight', and 'Actions'. The table contains rows for Pokemon with IDs 1011, 3, 0, 10, and 123. A context menu is open over the row with ID 3, displaying the following options: 'Copy Pokemon name', 'View Pokemon', and 'Delete Pokemon'. A mouse cursor is pointing at the 'Delete Pokemon' option.

Searching for a Pokemon

poke				
Id	ID	Name	Weight	Height
10282		Utku's Pokemon edited	999	1011
10164		slowpoke-galar	360	12
79		slowpoke	360	12
0 of 3 row(s) selected.				
			Rows per page	10
			Page 1 of 1	

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_defense_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);
```