Pokémon trainer database

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Business Pitch

Avid players of Pokémon could use a Pokémon Trainer database in order to help them play the game by giving them useful information of the names of the important trainers, what games they are from, and the type of Pokémon they use. **A "Pokedex" for trainers.**

- Pokémon GO popularity
- 20th Anniversary
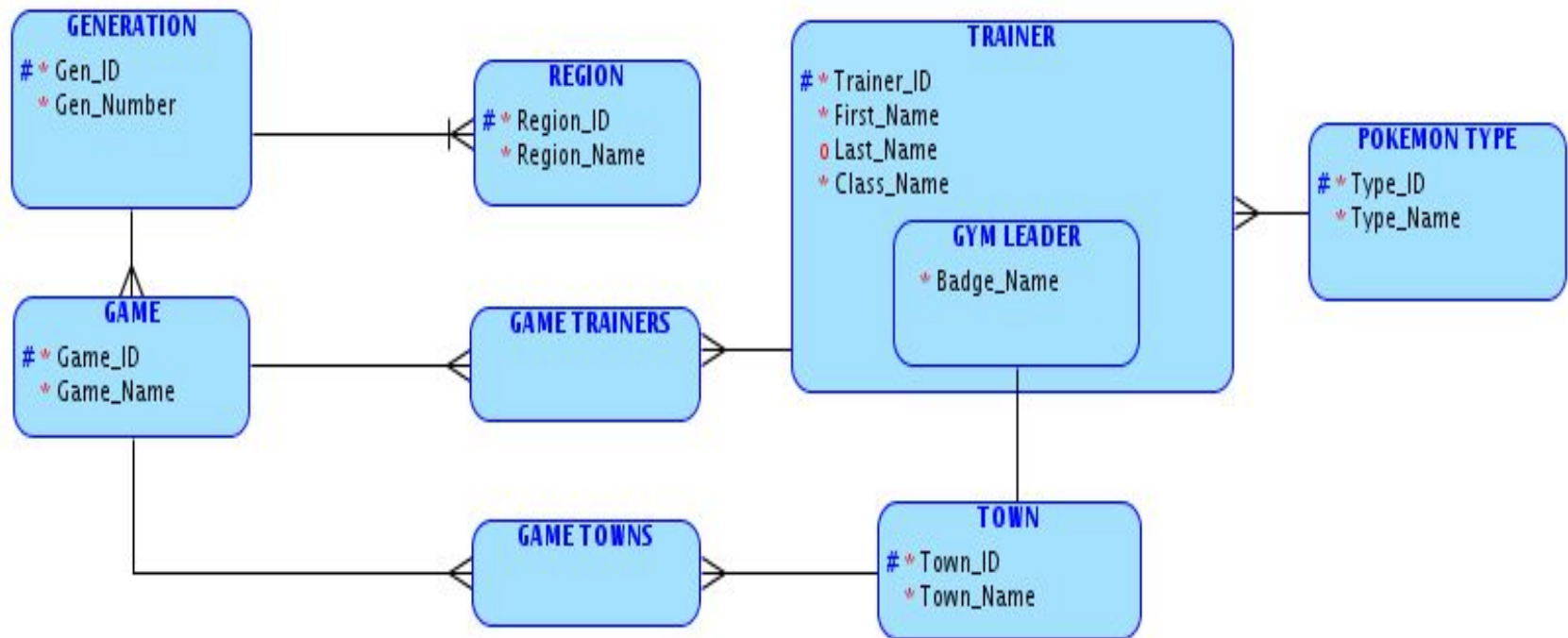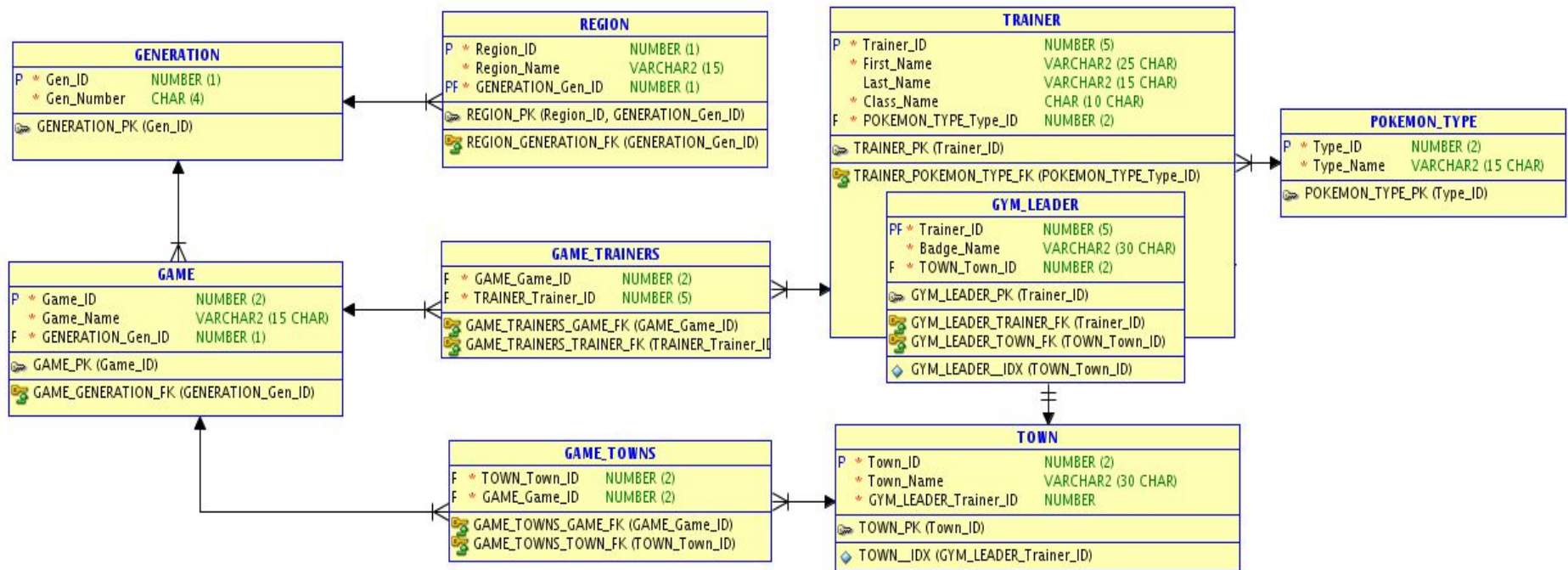- Release of Pokémon Sun and Moon

Business Rules

1. **The primary goal here is to create a database of the most important trainers in the Pokemon handheld games.** Due to the scope of our project, we are going to focus just on Gym leaders and expand to Elite 4 and Champions if time allows it this semester.
2. **Each Generation of Pokemon games has multiple games.** Each of these games can differ in some aspects, so there needs to be a way to distinguish exactly which game each trainer is a part of.
3. **Every trainer is skilled in a certain type of Pokemon.** Thus, each trainer must have a pokemon type associated with them in the database.
4. **The gym leaders each "rule over" a town by themselves.** The town they are from should be known.

Logical Model has appeared!

Relational Model has appeared!

Trainer Inserts

```sql
85  INSERT INTO TRAINER(TRAINER_ID, FIRST_NAME, LAST_NAME, CLASS_NAME, POKEMON_TYPE_Type_ID)
86    VALUES(50036,'Lenora', null, 'Gym Leader', 1);
87  INSERT INTO TRAINER(TRAINER_ID, FIRST_NAME, LAST_NAME, CLASS_NAME, POKEMON_TYPE_Type_ID)
88    VALUES(50037,'Burgh', null, 'Gym Leader', 12);
89  INSERT INTO TRAINER(TRAINER_ID, FIRST_NAME, LAST_NAME, CLASS_NAME, POKEMON_TYPE_Type_ID)
90    VALUES(50038,'Elesa', null, 'Gym Leader', 3);
91
92  UPDATE Trainer
93  SET POKEMON_TYPE_Type_ID = 4
94  WHERE Trainer_Id = 50038;
95
96  INSERT INTO TRAINER(TRAINER_ID, FIRST_NAME, LAST_NAME, CLASS_NAME, POKEMON_TYPE_Type_ID)
97    VALUES(50039,'Clay', null, 'Gym Leader', 9);
98  INSERT INTO TRAINER(TRAINER_ID, FIRST_NAME, LAST_NAME, CLASS_NAME, POKEMON_TYPE_Type_ID)
99    VALUES(50040,'Skyla', null, 'Gym Leader', 10);
100 INSERT INTO TRAINER(TRAINER_ID, FIRST_NAME, LAST_NAME, CLASS_NAME, POKEMON_TYPE_Type_ID)
101   VALUES(50041,'Brycen', null, 'Gym Leader', 6);
102 INSERT INTO TRAINER(TRAINER_ID, FIRST_NAME, LAST_NAME, CLASS_NAME, POKEMON_TYPE_Type_ID)
103   VALUES(50042,'Drayden', null, 'Gym Leader', 15);
104 INSERT INTO TRAINER(TRAINER_ID, FIRST_NAME, LAST_NAME, CLASS_NAME, POKEMON_TYPE_Type_ID)
105   VALUES(50043,'Iris', null, 'Gym Leader', 15);
106 INSERT INTO TRAINER(TRAINER_ID, FIRST_NAME, LAST_NAME, CLASS_NAME, POKEMON_TYPE_Type_ID)
107   VALUES(50044,'Cheren', null, 'Gym Leader', 1);
```
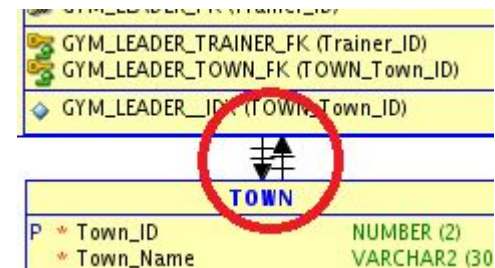
Gym Leader and Towns Inserts

```
187   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(30024,'Mind Badge', 23);
188   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(30025,'Rain Badge', 24);
189   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(40027,'Coal Badge', 25);
190   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(40028,'Forest Badge', 26);
191   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(40029,'Cobble Badge', 27);
192   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(40030,'Fen Badge', 28);
193   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(40031,'Relic Badge', 29);
194   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(40032,'Mine Badge', 30);
195   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(40033,'Icicle Badge', 31);
196   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(40034,'Beacon Badge', 32);
197   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(50035,'Trio Badge', 33);
198   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(50036,'Basic Badge', 34);
199   INSERT INTO GYM_LEADER(TRAINER_ID, BADGE_NAME, TOWN_TOWN_ID) VALUES(40037,'Insect Badge', 35);
```

```
INSERT INTO TOWN(TOWN_ID, TOWN_NAME, GYM_LEADER_Trainer_ID)
VALUES(45,'Lumiose City',60051);
INSERT INTO TOWN(TOWN_ID, TOWN_NAME, GYM_LEADER_Trainer_ID)
VALUES(46,'Laverre City',60052);
INSERT INTO TOWN(TOWN_ID, TOWN_NAME, GYM_LEADER_Trainer_ID)
VALUES(47,'Anistar City',60053);
INSERT INTO TOWN(TOWN_ID, TOWN_NAME, GYM_LEADER_Trainer_ID)
VALUES(48,'Snowbelle City',60054);
INSERT INTO TOWN(TOWN_ID, TOWN_NAME, GYM_LEADER_Trainer_ID)
VALUES(49,'Aspertia City',50044);
INSERT INTO TOWN(TOWN_ID, TOWN_NAME, GYM_LEADER_Trainer_ID)
VALUES(50,'Virbank City',50045);
INSERT INTO TOWN(TOWN_ID, TOWN_NAME, GYM_LEADER_Trainer_ID)
VALUES(51,'Humilau City',50046);
```

Redundancy

```
GYM_LEADER_TRAINER_FK (Trainer_ID)
GYM_LEADER_TOWN_FK (TOWN_Town_ID)
GYM_LEADER_ID (TOWN_Town_ID)

TOWN
P  * Town_ID       NUMBER (2)
   * Town_Name     VARCHAR2 (30
```

Inserts

```
465  --Pewter City
466  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (01,01); --Red
467  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (01,02); --Blue
468  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (01,03); --Yellow
469  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (01,04); --Gold
470  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (01,05); --Silver
471  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (01,06); --Crystal
472  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (01,10); --FireRed
473  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (01,11); --LeafGreen
474  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (01,15); --HeartGold
475  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (01,16); --SoulSilver
476
477  --Cerulean Town
478  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (02,01); --Red
479  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (02,02); --Blue
480  INSERT INTO GAME_TOWNS(TOWN_Town_ID, GAME_Game_ID) VALUES (02,03); --Yellow
```

```
861  --Koga
862  INSERT INTO GAME_TRAINERS(GAME_GAME_ID,TRAINER_TRAINER_ID) VALUES(01, 10005); --Red
863  INSERT INTO GAME_TRAINERS(GAME_GAME_ID,TRAINER_TRAINER_ID) VALUES(02, 10005); --Blue
864  INSERT INTO GAME_TRAINERS(GAME_GAME_ID,TRAINER_TRAINER_ID) VALUES(03, 10005); --Yellow
865  INSERT INTO GAME_TRAINERS(GAME_GAME_ID,TRAINER_TRAINER_ID) VALUES(10, 10005); --FireRed
866  INSERT INTO GAME_TRAINERS(GAME_GAME_ID,TRAINER_TRAINER_ID) VALUES(11, 10005); --LeafGreen
867
868  --Sabrina
869  INSERT INTO GAME_TRAINERS(GAME_GAME_ID,TRAINER_TRAINER_ID) VALUES(01, 10006); --Red
870  INSERT INTO GAME_TRAINERS(GAME_GAME_ID,TRAINER_TRAINER_ID) VALUES(02, 10006); --Blue
871  INSERT INTO GAME_TRAINERS(GAME_GAME_ID,TRAINER_TRAINER_ID) VALUES(03, 10006); --Yellow
```

Statistics

Tables	Rows
TRAINER	60
GYM LEADER	51
POKEMON TYPE	19
GAME_TRAINERS	238
TOWN	51
GAME_TOWNS	238
GAME	26
GENERATION	7
REGION	7
9	697

GYM LEADER and GAME TOWNS should have the same number since one Leader per Town. As observed, both have 51 rows.

Note that this is *not* necessarily true for GAME TRAINERS and GAME_TOWNS.

Query 1, 2 & 3

```
1159  --List the 8 Kanto gym leaders
1160  SELECT distinct t.First_Name
1161    FROM TRAINER t
1162      INNER JOIN GYM_LEADER gl ON t.Trainer_ID = gl.Trainer_ID
1163      INNER JOIN GAME_TRAINERS gt ON gl.Trainer_ID = gt.TRAINER_Trainer_ID
1164      INNER JOIN GAME g ON gt.GAME_Game_ID = g.GAME_ID
1165      INNER JOIN GENERATION gen ON g.GENERATION_Gen_ID = gen.Gen_ID
1166      INNER JOIN REGION r ON gen.Gen_ID = r.GENERATION_Gen_ID
1167  WHERE
1168    Region_Name = 'Kanto';
```

	FIRST_NAME
1	Misty
2	Koga
3	Erika
4	Giovanni
5	Brock
6	Lt Surge
7	Blaine
8	Sabrina

```
1170  --What Pokemon Type does Giovanni use?
1171  SELECT t.First_Name, pt.Type_Name
1172    FROM Trainer t
1173      INNER JOIN POKEMON_TYPE pt ON t.POKEMON_TYPE_Type_ID = pt.TYPE_ID
1174  WHERE
1175    First_Name = 'Giovanni';
```

	FIRST_NAME	TYPE_NAME
1	Giovanni	Ground

```
1177  --What games are Maylene in?
1178  SELECT t.First_Name, g.Game_Name
1179    FROM TRAINER t
1180      INNER JOIN GAME_TRAINERS gt ON t.Trainer_ID = gt.TRAINER_Trainer_ID
1181      INNER JOIN GAME g ON gt.GAME_Game_ID = g.Game_ID
1182  WHERE
1183    First_Name = 'Maylene';
```

	FIRST_NAME	GAME_NAME
1	Maylene	Diamond
2	Maylene	Pearl
3	Maylene	Platinum

Query 4, 5, & 6

```
1185    --List all the trainers that use Bug type or Water type
1186  ⊟ SELECT t.First_Name, pt.Type_Name
1187      FROM Trainer t
1188          INNER JOIN POKEMON_TYPE pt ON t.POKEMON_TYPE_Type_ID = pt.TYPE_ID
1189      WHERE
1190        Type_Name IN('Bug', 'Water');
```

	FIRST_NAME	TYPE_NAME
1	Misty	Water
2	Marlon	Water
3	Crasher Wake	Water
4	Juan	Water
5	Wallace	Water
6	Viola	Bug
7	Burgh	Bug
8	Bugsy	Bug

```
1192    --Who are all the trainers with last names?
1193    SELECT *
1194    FROM TRAINER
1195    WHERE Last_Name IS NOT NULL;
1196
1197    --Any name starting with F
1198    SELECT *
1199    FROM TRAINER
1200    WHERE First_Name LIKE 'F%';
```

	TRAINER_ID	FIRST_NAME	LAST_NAME	CLASS_NAME	POKEMON_TYPE_TYPE_ID
1	10001	Brock	Harrison	Gym Leader	13
2	10009	Blue	Oak	Gym Leader	19
3	33324	Arron	Dominion	Scientist	16
4	97853	Kitty	Pryde	Student	14

	TRAINER_ID	FIRST_NAME	LAST_NAME	CLASS_NAME	POKEMON_TYPE_TYPE_ID
1	20010	Falkner	(null)	Gym Leader	10
2	30021	Flannery	(null)	Gym Leader	2
3	40031	Fantina	(null)	Gym Leader	14
4	89263	Felix	(null)	Breeder	13

Query 8

```
1211    --Who are the Gym Leaders of Gen VI and what are Pokemon Type do they possess?
1212  ⊟ SELECT distinct t.First_Name, pt.Type_Name
1213    FROM TRAINER t
1214       INNER JOIN POKEMON_TYPE pt ON t.POKEMON_TYPE_Type_ID = pt.Type_ID
1215       INNER JOIN GYM_LEADER gl ON t.Trainer_ID = gl.Trainer_ID
1216       INNER JOIN GAME_TRAINERS gt ON gl.Trainer_ID = gt.TRAINER_Trainer_ID
1217       INNER JOIN GAME g ON gt.GAME_Game_ID = g.Game_ID
1218       INNER JOIN GENERATION gen ON g.GENERATION_Gen_ID = gen.Gen_ID
1219    WHERE Gen_Number='VI';
```

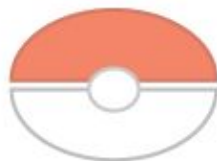|	FIRST_NAME	TYPE_NAME
1	Tate and Liza	Psychic
2	Norman	Normal
3	Brawly	Fighting
4	Wallace	Water
5	Ramos	Grass
6	Clement	Electric
7	Viola	Bug
8	Grant	Rock
9	Valerie	Fairy
10	Flannery	Fire
11	Wattson	Electric
12	Korrina	Fighting
13	Wulfric	Ice
14	Winona	Flying
15	Olympia	Psychic
16	Roxanne	Rock

Query 9

```sql
--What Pokemon types have the highest frequency?
WITH typeCount AS (
    SELECT t.POKEMON_TYPE_Type_ID, COUNT(t.POKEMON_TYPE_Type_Id) AS CountedTypes
    FROM TRAINER t
    GROUP BY t.POKEMON_TYPE_Type_ID)
, maxTypeCount AS (    SELECT t.POKEMON_TYPE_Type_ID, COUNT(t.POKEMON_TYPE_Type_Id) AS CountedTypes
    FROM TRAINER t
    GROUP BY t.POKEMON_TYPE_Type_ID)
SELECT *
FROM (
            SELECT pt.Type_Name
            FROM POKEMON_TYPE pt
                        INNER JOIN typeCount ON pt.Type_ID = typeCount.POKEMON_TYPE_Type_ID
                        INNER JOIN maxTypeCount ON pt.Type_ID = maxTypeCount.POKEMON_TYPE_Type_ID
            WHERE typeCount.CountedTypes = (SELECT MAX(maxTypeCount.CountedTypes) FROM maxTypeCount)
            --ORDER BY typeCount.CountedTypes DESC
            );
```

	TYPE_NAME
1	Rock
2	Electric
3	Water

Query 11

```
1262   --List all the trainers with a town, if they have one
1263   SELECT *
1264   FROM Trainer t
1265   LEFT OUTER JOIN TOWN tow ON t.Trainer_ID = tow.GYM_LEADER_TRAINER_ID;
```

	TRAINER_ID	FIRST_NAME	LAST_NAME	CLASS_NAME	POKEMON_TYPE_TYPE_ID	TOWN_ID	TOWN_NAME	GYM_LEADER_TRAINER_ID
55	60052	Valerie	(null)	Gym Leader	18	46	Laverre City	60052
56	60053	Olympia	(null)	Gym Leader	11	47	Anistar City	60053
57	60054	Wulfric	(null)	Gym Leader	6	48	Snowbelle City	60054
58	66666	Satan	(null)	Chef	2	(null)	(null)	(null)
59	89263	Felix	(null)	Breeder	13	(null)	(null)	(null)
60	97853	Kitty	Pryde	Student	14	(null)	(null)	(null)

Challenges

- Tedious

- Version / File conflicts in SQL

- Schedules

- Project ambition

References & Credits

Helpful Links
- ❖ WITH clause
- ❖ StackOverflow: Multiple WITH clauses?

Programs Used
Adobe Illustrator CS6
Dafont
Gimp 2.6
Google Images
Oracle SQL Developer

GAME OVER

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