SQL Query Report(Lab 4)

1. Create Tables and insert the data.

```sql
CREATE TABLE pokemon(
    pokemon_id INT PRIMARY KEY,
    name VARCHAR(50),
    type VARCHAR(20),
    hp INT,
    attack INT,
    defense INT,
    speed INT
    );

    CREATE TABLE trainer(
        trainer_id INT PRIMARY KEY,
        first_name VARCHAR(30),
        last_name VARCHAR(30),
        city VARCHAR(30)
    );

    INSERT INTO pokemon(pokemon_id, name, type, hp, attack,
defense, speed)
    VALUES
    (1, 'Bulbasaur', 'Grass', 45, 49, 49, 45),
    (2, 'Ivysaur', 'Grass', 60, 62, 63, 60),
    (3, 'Venusaur', 'Grass', 80, 82, 83, 80),
    (4, 'Charmander', 'Fire', 39, 52, 43, 65),
    (5, 'Charmeleon', 'Fire', 58, 64, 58, 80),
    (6, 'Charizard', 'Fire', 78, 84, 78, 100),
    (7, 'Squirtle', 'Water', 44, 48, 65, 43),
    (8, 'Wartortle', 'Water', 59, 63, 80, 58),
    (9, 'Blastoise', 'Water', 79, 83, 100, 78),
    (10, 'Pikachu', 'Electric', 35, 55, 40, 90),
    (11, 'Raichu', 'Electric', 60, 90, 55, 110);

    INSERT INTO trainer(trainer_id, first_name, last_name,
city)
```

```
34.     VALUES
35.     (1, 'Ash', 'Ketchum', 'Pallet Town'),
36.     (2, 'Misty', 'Williams', 'Cerulean City'),
37.     (3, 'Brock', 'Harrison', 'Pewter City'),
38.     (4, 'Gary', 'Oak', 'Pallet Town'),
39.     (5, 'Erika', 'Green', 'Celadon City');
```

Output Tables :

pokemon_id	name	type	hp	attack	defense	speed
1	Bulbasaur	Grass	45	49	49	45
2	Ivysaur	Grass	60	62	63	60
3	Venusaur	Grass	80	82	83	80
4	Charmander	Fire	39	52	43	65
5	Charmeleon	Fire	58	64	58	80
6	Charizard	Fire	78	84	78	100
7	Squirtle	Water	44	48	65	43
8	Wartortle	Water	59	63	80	58
9	Blastoise	Water	79	83	100	78
10	Pikachu	Electric	35	55	40	90
11	Raichu	Electric	60	90	55	110
NULL	NULL	NULL	NULL	NULL	NULL	NULL

trainer_id	first_name	last_name	city
1	Ash	Ketchum	Pallet Town
2	Misty	Williams	Cerulean City
3	Brock	Harrison	Pewter City
4	Gary	Oak	Pallet Town
5	Erika	Green	Celadon City
NULL	NULL	NULL	NULL

2. Write a query to display the different types of Pokémon available in the pokemon table. Ensure that each type is listed only once.
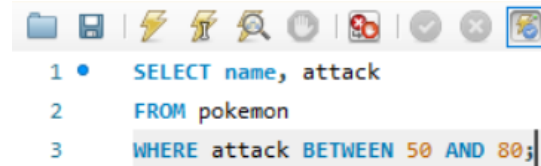
```
SELECT DISTINCT type
FROM pokemon;
```

Output:

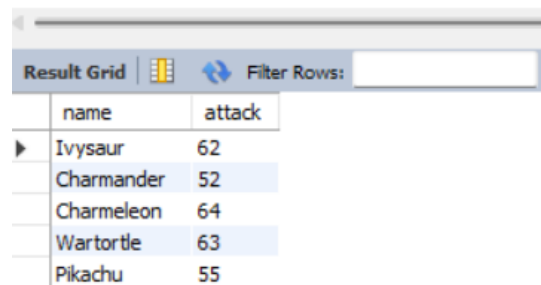| type |
|---|
| Grass |
| Fire |
| Water |
| Electric |

3. List all Pokémon whose attack stat is between 50 and 80, inclusive.

```sql
SELECT name, attack
FROM pokemon
WHERE attack BETWEEN 50 AND 80;
```
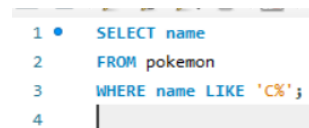
Output:

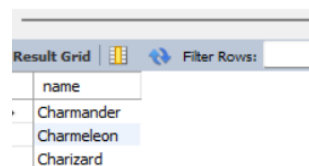| name	attack
Ivysaur	62
Charmander	52
Charmeleon	64
Wartortle	63
Pikachu	55

4. Find all Pokémon whose names start with the letter 'C'.

```sql
SELECT name
FROM pokemon
WHERE name LIKE 'C%';
```

Output:

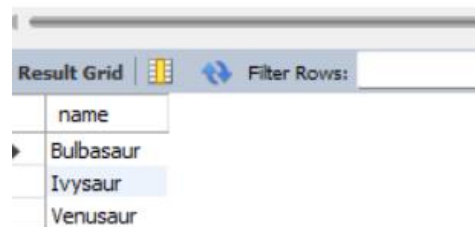| name |
|------|
| Charmander |
| Charmeleon |
| Charizard |

5. Find all Pokémon whose names contain 'saur' anywhere in their names.

```
SELECT name
FROM pokemon
WHERE name LIKE '%saur%';
```

Output :
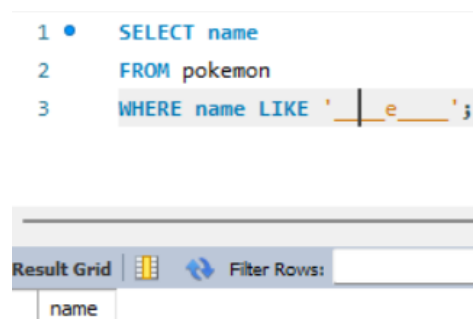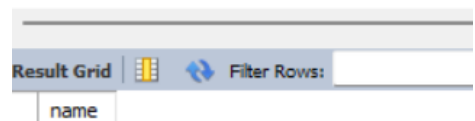

6. Find all Pokémon whose names have exactly 9 characters and the fifth character is 'e'.

```
SELECT name
FROM pokemon
WHERE name LIKE '____e____';
```

Output:

(No name with such structure)

If we set 'e' as the 6th character :

```
1 •     SELECT name
2       FROM pokemon
3       WHERE name LIKE '_____e____';
```

name
Charmeleon

7. Create a query to display the full names (first name and last name concatenated) of all trainers, along with their city.

```sql
SELECT CONCAT(first_name, ' ', last_name) AS full_name, city
FROM trainer;
```

Output:

```
1 •     SELECT CONCAT(first_name, ' ',last_name)
2       AS full_name, city
3       FROM trainer;
4
```

full_name	city
Ash Ketchum	Pallet Town
Misty Williams	Cerulean City
Brock Harrison	Pewter City
Gary Oak	Pallet Town
Erika Green	Celadon City

8. List all Pokémon sorted first by type in ascending order and then by attack stat in descending order.

```sql
SELECT name, type, attack
FROM pokemon
ORDER BY type ASC, attack DESC;
```

Output:

```
1 •    SELECT name, type, attack
2      FROM pokemon
3      ORDER BY type ASC, attack DESC;
```

name	type	attack
Raichu	Electric	90
Pikachu	Electric	55
Charizard	Fire	84
Charmeleon	Fire	64
Charmander	Fire	52
Venusaur	Grass	82
Ivysaur	Grass	62
Bulbasaur	Grass	49
Blastoise	Water	83
Wartortle	Water	63
Squirtle	Water	48

9. Create the trainer_pokemon Table.

```sql
CREATE TABLE trainer_pokemon (
    trainer_id INT,
    pokemon_id INT
);
```

10. Add a foreign key constraint on trainer_id referencing trainer(trainer_id) and another on pokemon_id referencing pokemon(pokemon_id).

```sql
ALTER TABLE trainer_pokemon
ADD CONSTRAINT fk_trainer
FOREIGN KEY (trainer_id) REFERENCES trainer(trainer_id);

ALTER TABLE trainer_pokemon
ADD CONSTRAINT fk_pokemon
FOREIGN KEY (pokemon_id) REFERENCES pokemon(pokemon_id);
```