### **Lab 6- Foreign Constraint in PostgreSQL**

Below is a lab exercise to practice foreign key integrity constraints in PostgreSQL:

**Connect to PostgreSQL:**

* Open the PostgreSQL command-line interface or use a graphical client like pgAdmin.

**Create Parent and Child Tables:**

* Create two sample tables, departments and employees, where employees has a foreign key that references departments:

CREATE TABLE departments (

id INTEGER PRIMARY KEY,

name VARCHAR(100) NOT NULL

);

CREATE TABLE employees (

id INTEGER PRIMARY KEY,

name VARCHAR(100) NOT NULL,

department\_id INT NOT NULL,

FOREIGN KEY (department\_id) REFERENCES departments(id)

);

**Insert Data with Valid Foreign Key References:**

* Insert some sample data into the departments and employees tables:

INSERT INTO departments VALUES (10,'Sales');

INSERT INTO employees VALUES (101,'John Doe', 10);

**Insert Data with Invalid Foreign Key Reference:**

* Try inserting data with an invalid foreign key reference to see how PostgreSQL handles it:

INSERT INTO employees (id, name, department\_id) VALUES (102, 'Jane Smith', 20);

* You should receive an error message indicating that the foreign key constraint has been violated.

**Update Data with Valid Foreign Key References:**

* Update the data in the employees table to ensure that the foreign key references are valid:

UPDATE employees SET department\_id = 10 WHERE name = 'Jane Smith';

**View Data:**

* Retrieve and view the data from the departments and employees tables:

SELECT \* FROM departments;

SELECT \* FROM employees;

By performing these operations, you can familiarize yourself with the implementation and handling of foreign key integrity constraints in PostgreSQL. You can execute these commands in the PostgreSQL command-line interface or any PostgreSQL client tool.