### **Lab 9- Exclusion Constraint in PostgreSQL**

Below is a lab exercise to practice the exclusion integrity constraint in PostgreSQL:

**Connect to PostgreSQL:**

* Open the PostgreSQL command-line interface or use a graphical client like pgAdmin.
* You need to execute the following command once per database. This will install the btree\_gist extension, which defines the exclusion constraints on plain scalar data types.

CREATE EXTENSION btree\_gist

**Create a Table with an Exclusion Constraint:**

* Create a sample table named bookings with an exclusion constraint to prevent overlapping time intervals:

CREATE TABLE bookings (

id SERIAL PRIMARY KEY,

room\_number INTEGER NOT NULL,

start\_time TIMESTAMP NOT NULL,

end\_time TIMESTAMP NOT NULL,

EXCLUDE USING gist (room\_number WITH =, tsrange(start\_time, end\_time) WITH &&)

);

**Insert Data Violating the Exclusion Constraint:**

* Try inserting data that violates the exclusion constraint to see how PostgreSQL handles it:

INSERT INTO bookings (room\_number, start\_time, end\_time) VALUES (101, '2023-10-15 12:00:00', '2023-10-15 13:00:00');

INSERT INTO bookings (room\_number, start\_time, end\_time) VALUES (101, '2023-10-15 12:30:00', '2023-10-15 14:00:00');

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

**Insert Data Meeting Constraints:**

* Insert data that adheres to the exclusion constraint:

INSERT INTO bookings (room\_number, start\_time, end\_time) VALUES (102, '2023-10-15 13:00:00', '2023-10-15 14:00:00');

**View Data:**

* Retrieve and view the data from the bookings table:

SELECT \* FROM bookings;

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