Training Exercise - 1

Database, User, Table & Records Operations

- Create a user with only database create access right

```
postgres=# create user jinay with createdb password '123';
CREATE ROLE
postgres=#
```

- Create a user with superuser access rights.

```
postgres=# create user shah with superuser password '123';
CREATE ROLE
postgres=#
```

- Create a user with database creation, superuser and role creation access rights.

```
postgres=# create user js with createdb superuser createrole password '123';
CREATE ROLE
postgres=#
```

- Drop any one of the users which you have created.

```
postgres=# drop user js;
DROP ROLE
postgres=#
```

- Alter any one user's password with your desired password.

```
postgres=# alter user shah with password '456';
ALTER ROLE
postgres=#
```

- Create a database.

```
postgres=# create database test;
CREATE DATABASE
postgres=#
```

- Delete a database which is created.

```
postgres=# drop database test;
DROP DATABASE
postgres=#
```

NOTE : All the below operations are to be performed in the terminal prompt of PosgreSQL and pgAdmin.

- Create a database and add a table employee with specified fields.
  - Employee ID
  - Name

- Email
- Phone no
- Designation
- Department
- Birth Date
- Join Date

```
postgres=# create database employeedb;
CREATE DATABASE
postgres=# \c
You are now connected to database "postgres" as user "postgres".
postgres=# \c employeedb;
You are now connected to database "employeedb" as user "postgres".
employeedb=# create table employee(employeeID serial primary key,name varchar
(100),email varchar(100),phone_no varchar(15),designation varchar(100),depart
ment varchar(100),birth_date date,join_date date);
CREATE TABLE
employeedb=#
```

- Modify the table and add two fields as following.
  - Level
  - Qualification
  - Join Date

```
employeedb=# alter table employee add column qualification varchar(100),add c
olumn level int;
ALTER TABLE
employeedb=#
```

- Modify a table and Delete a column from the table.

```
employeedb=# alter table employee drop column level;
ALTER TABLE
employeedb=#
```

- Insert 10 records with unique employee ids in the employee table.

```
employeedb=# insert into employee (name,email,phone_no,designation,departmen
t,birth_date,join_date,qualification) values ('John Doe', 'john@example.com'
, '1234567890', 'Software Engineer', 'Engineering', '1990-01-01', '2020-01-0
1', 'Bachelor'),('Jane Smith', 'jane@example.com', '0987654321', 'HR Manager
', 'Human Resources', '1985-05-15', '2018-06-01', 'Master'),('Alice Johnson'
, 'alice@example.com', '9876543210', 'Marketing Specialist', 'Marketing', '1
992-11-30', '2019-03-15', 'Bachelor'),('Bob Williams', 'bob@example.com', '0
123456789', 'Financial Analyst', 'Finance', '1988-07-20', '2017-09-10', 'Mas
ter'),('Emma Brown', 'emma@example.com', '6789012345', 'Customer Support Rep
resentative', 'Customer Service', '1995-03-05', '2021-07-20', 'Bachelor'),('
Michael Davis', 'michael@example.com', '5678901234', 'Product Manager', 'Pro
duct Management', '1983-09-10', '2016-02-28', 'PhD'),('Sophia Garcia', 'soph
ia@example.com', '4567890123', 'Operations Manager', 'Operations', '1987-12-
25', '2015-11-15', 'Bachelor'),('William Rodriguez', 'william@example.com',
'3456789012', 'Software Developer', 'Engineering', '1991-06-15', '2022-01-10
', 'Master'),('Olivia Martinez', 'olivia@example.com', '2345678901', 'Sales
Representative', 'Sales', '1994-04-20', '2020-08-05', 'Bachelor'),('David Lo
pez', 'david@example.com', '1234567890', 'IT Specialist', 'Information Techn
ology', '1986-08-30', '2019-05-25', 'Bachelor');
INSERT 0 10
```

```
employeedb=# select * from employee;
 employeeid |       name       |        email        |  phone_no  |          designation          |      department       | birth_date |
 join_date  | qualification
------------+------------------+---------------------+------------+-------------------------------+-----------------------+------------+
---------------
          1 | John Doe         | john@example.com    | 1234567890 | Software Engineer             | Engineering           | 1990-01-01 |
 2020-01-01 | Bachelor
          2 | Jane Smith       | jane@example.com    | 0987654321 | HR Manager                    | Human Resources       | 1985-05-15 |
 2018-06-01 | Master
          3 | Alice Johnson    | alice@example.com   | 9876543210 | Marketing Specialist          | Marketing             | 1992-11-30 |
 2019-03-15 | Bachelor
          4 | Bob Williams     | bob@example.com     | 0123456789 | Financial Analyst             | Finance               | 1988-07-20 |
 2017-09-10 | Master
          5 | Emma Brown       | emma@example.com    | 6789012345 | Customer Support Representative | Customer Service      | 1995-03-05 |
 2021-07-20 | Bachelor
          6 | Michael Davis    | michael@example.com | 5678901234 | Product Manager               | Product Management    | 1983-09-10 |
 2016-02-28 | PhD
          7 | Sophia Garcia    | sophia@example.com  | 4567890123 | Operations Manager            | Operations            | 1987-12-25 |
 2015-11-15 | Bachelor
          8 | William Rodriguez | william@example.com | 3456789012 | Software Developer            | Engineering           | 1991-06-15 |
 2022-01-10 | Master
          9 | Olivia Martinez  | olivia@example.com  | 2345678901 | Sales Representative          | Sales                 | 1994-04-20 |
 2020-08-05 | Bachelor
         10 | David Lopez      | david@example.com   | 1234567890 | IT Specialist                 | Information Technology | 1986-08-30 |
 2019-05-25 | Bachelor
(10 rows)
```

- Update all the records together. Update only one field.

```
employeedb=# update employee set qualification='fresher';
UPDATE 10
employeedb=#
```

- Delete a single record from a table.

```
employeedb=# delete from employee where employeeid=1;
DELETE 1
employeedb=#
```

- Delete all the records from a table using Delete.

```
employeedb=# delete from employee;
DELETE 9
employeedb=#
```

- Delete all the records from a table without using Delete.

```
employeedb=# truncate table employee;
TRUNCATE TABLE
employeedb=#
```

NOTE: Below operations to be done from pgAdmin GUI.

- Create a table using the Create script in pgAdmin.

```sql
CREATE TABLE department (
    department_id SERIAL PRIMARY KEY,
    department_name VARCHAR(100) NOT NULL,
    location VARCHAR(255),
    manager_name VARCHAR(100)
);
```

- Insert 10 records using the Insert script in pgAdmin.

```sql
INSERT INTO department (department_name, location, manager_name)
VALUES
  ('Sales', 'New York', 'John Smith'),
  ('Marketing', 'Los Angeles', 'Alice Johnson'),
  ('Finance', 'Chicago', 'Michael Brown'),
  ('Engineering', 'San Francisco', 'David Lee'),
  ('Human Resources', 'Boston', 'Emily Wilson'),
  ('IT', 'Seattle', 'Daniel Miller'),
  ('Operations', 'Dallas', 'Sophia Taylor'),
  ('Customer Service', 'Houston', 'Matthew Martinez'),
  ('Research and Development', 'Atlanta', 'Olivia Thomas'),
  ('Legal', 'Washington D.C.', 'William Anderson');
```

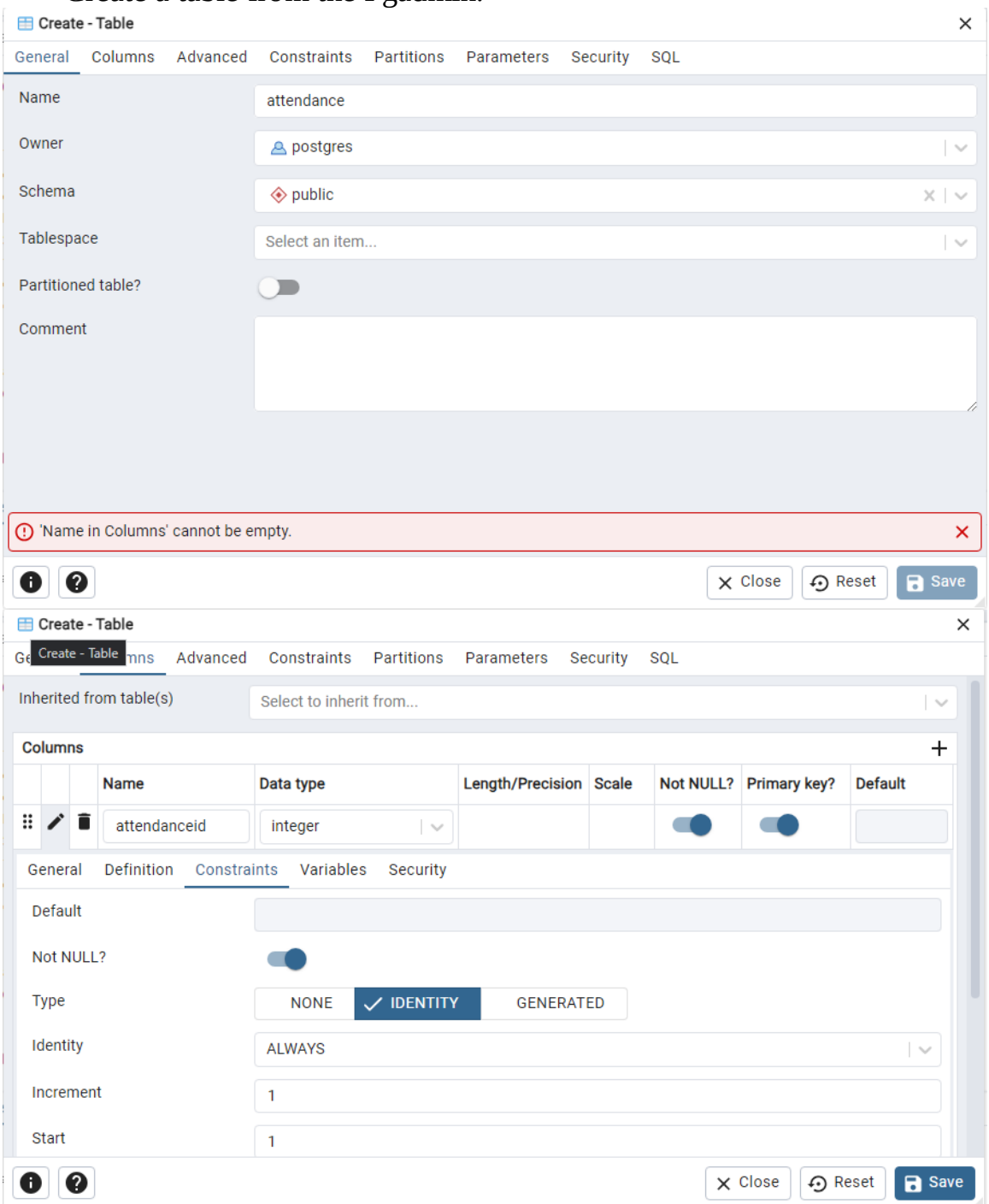
- Update a record using the Update script in pgAdmin.

```sql
UPDATE department
SET location='India'
WHERE department_name='IT';
```

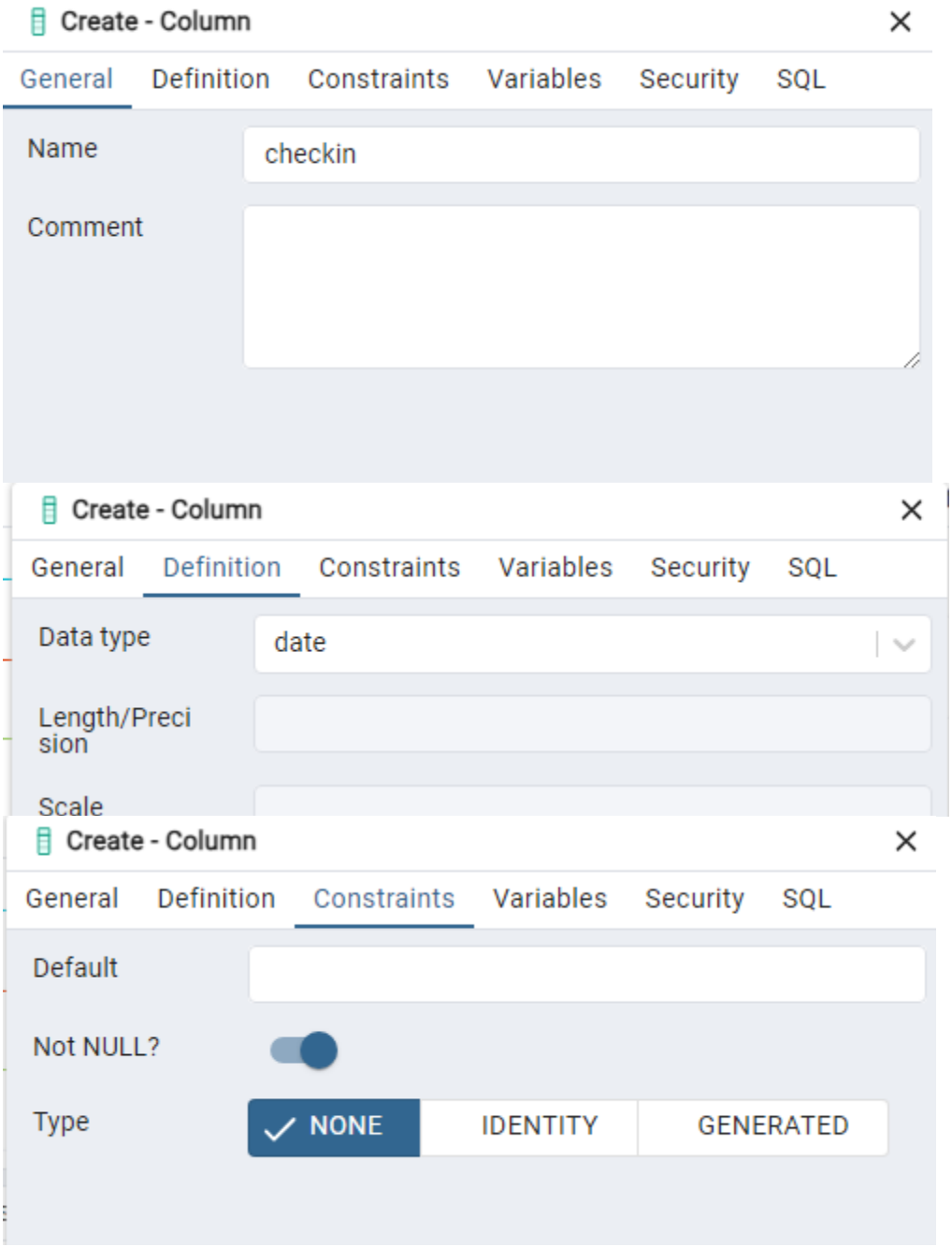
- Delete a record using the Delete script in pgAdmin.

```
DELETE FROM department
WHERE department_name='Sales';
```

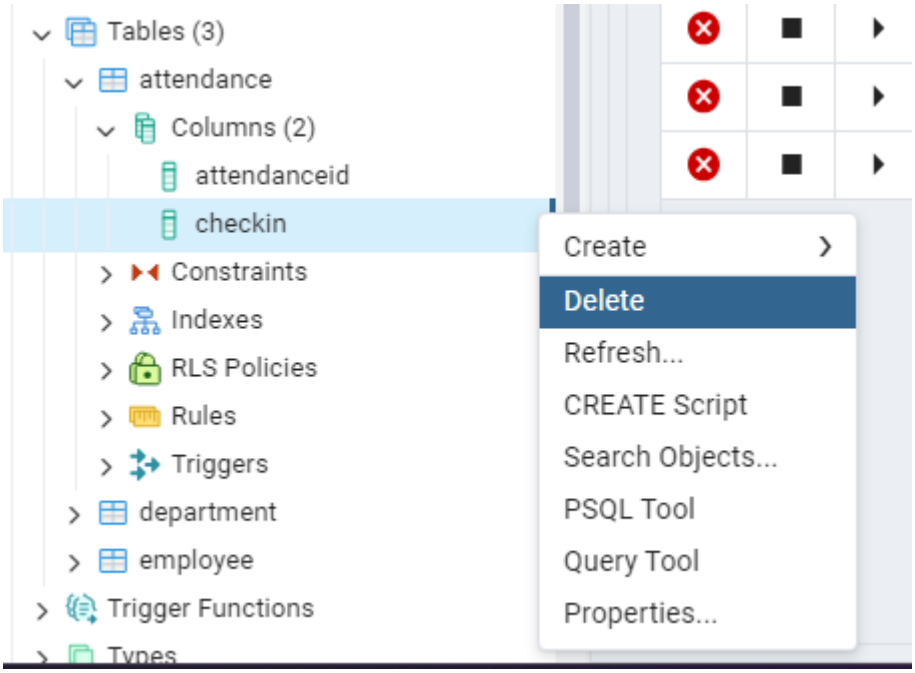
- Create a table from the Pgadmin.



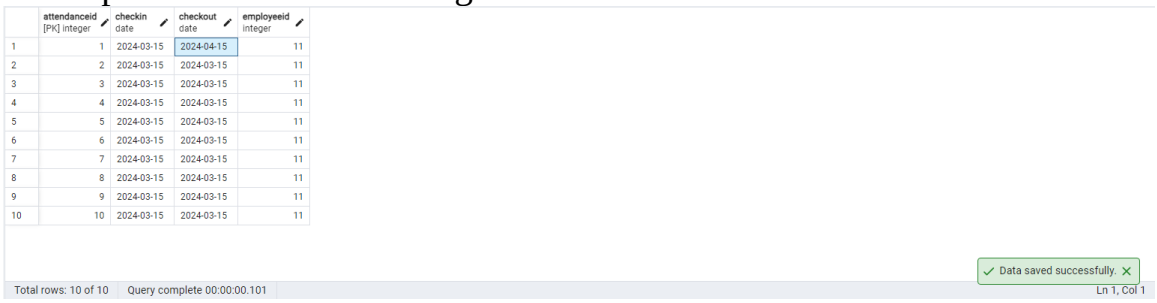
- Update a table and add a column from pgAdmin.



- Remove a column from a table from pgAdmin.

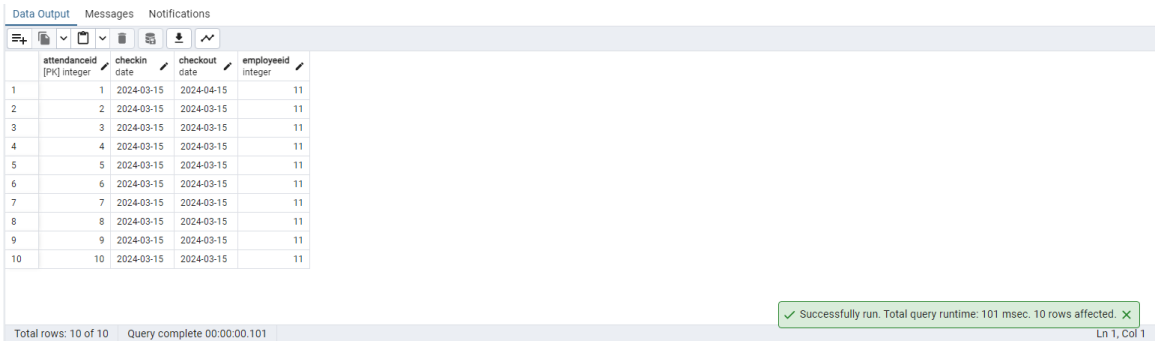


- Update record from the Pgadmin.



	attendanceid [PK] integer	checkin date	checkout date	employeeid integer
1	1	2024-03-15	2024-04-15	11
2	2	2024-03-15	2024-03-15	11
3	3	2024-03-15	2024-03-15	11
4	4	2024-03-15	2024-03-15	11
5	5	2024-03-15	2024-03-15	11
6	6	2024-03-15	2024-03-15	11
7	7	2024-03-15	2024-03-15	11
8	8	2024-03-15	2024-03-15	11
9	9	2024-03-15	2024-03-15	11
10	10	2024-03-15	2024-03-15	11

- View all the records of a table.



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4	4	2024-03-15	2024-03-15	11
5	5	2024-03-15	2024-03-15	11
6	6	2024-03-15	2024-03-15	11
7	7	2024-03-15	2024-03-15	11
8	8	2024-03-15	2024-03-15	11
9	9	2024-03-15	2024-03-15	11
10	10	2024-03-15	2024-03-15	11