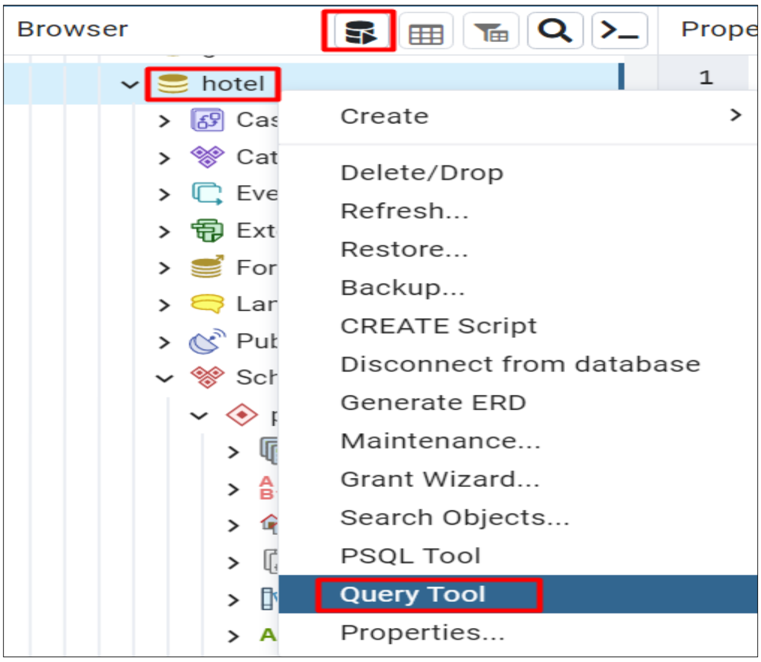
Lab: Basic CRUD

This document defines the **lab assignments** for the [PostgreSQL course @ Software University.](https://softuni.bg)

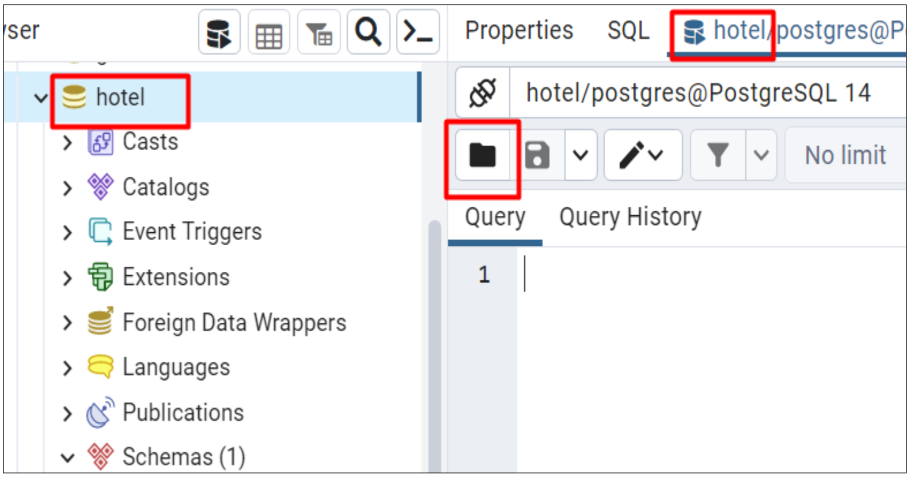
Initial Steps:

Download the file **`hotel_db.sql`** from your Resources section.

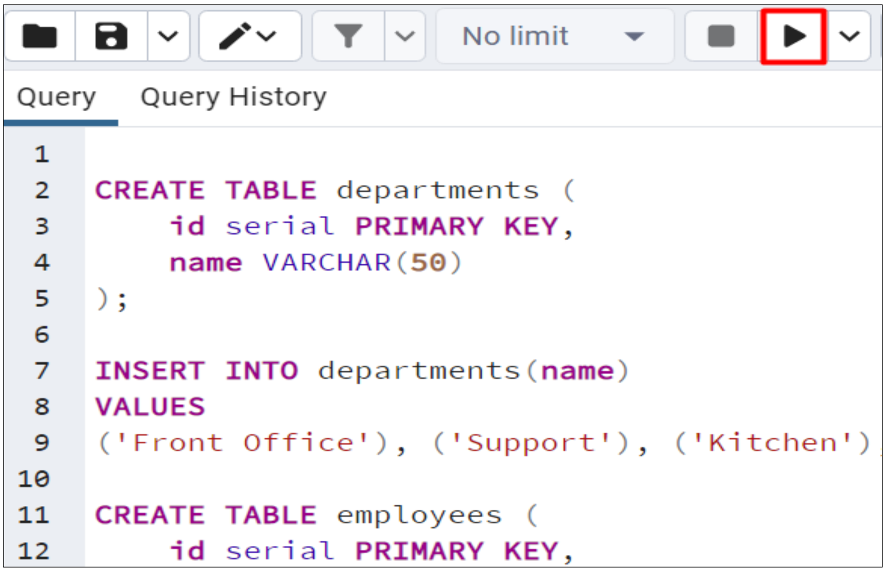
Create a database "**`hotel`**" and open its **Query Tool**. You can use either the **Query icon** or **Query Tool** from the drop-down menu. Make sure you have selected your database **`hotel`.**



Import the file by clicking on **Folder** icon.



Navigate to file **`hotel_db.sql`** and select it. Queries will be loaded. Press the **Play** icon to execute them. This way you will create all tables and populate them with bulk data.



```

CREATE TABLE departments (
     id serial PRIMARY KEY,
     name VARCHAR(50)
);

INSERT INTO departments(name)
VALUES
('Front Office'), ('Support'), ('Kitchen')

CREATE TABLE employees (
     id serial PRIMARY KEY,
```

Get familiar with the **hotel** database and its **tables**. You will use them in the following exercises to make queries and retrieve data.

Exercises from the following section should be submitted to Judge Contest (tasks 1 to 7).

1. Select and Display Employee Information by Concatenating Columns

Write a query to select all employees and retrieve information about their **id**, **first_name**, **last_name (as Full Name)**, and **job_title (as Job Title)**.

Example

id	Full Name	Job Title
1	John Smith	Manager
2	John Johnson	Customer Service
3	Smith Johnson	Porter
…	…	…

2. Select Employees by Filtering and Ordering

Write a query to select all employees (**id, first_name and last_name (as full_name), job_title, salary**) whose salaries are **higher than 1000.00**, **ordered by id.** Concatenate fields **first_name** and **last_name** into '**full_name**'.

Example

id	full_name	job_title	salary
3	Smith Johnson	Porter	1100
4	Peter Petrov	Front Desk Clerk	1100

5	Peter Ivanov	Sales	1500.23
…	…	…	…

3. Select Employees by Multiple Filters

Write a query to retrieve information about employees, who are in **department 4** and have a salary **higher or equal to 1000**. Order the information by **id**.

Example

id	first_name	last_name	job_title	department_id	salary
3	Smith	Johnson	Porter	4	1100
9	Nikolay	Ivanov	Housekeeping	4	1600

4. Insert Data into Employees Table

Insert new records into table **employees** by writing a query. Select all employees' info to check the new entries.

New values:

Samantha Young, Housekeeping, 4, 900

Roger Palmer, Waiter, 3, 928.33

Submit **both INSERT** and **SELECT** queries.

Example

id	first_name	last_name	job_title	department_id	salary
…	…	…	…	…	…
10	Samantha	Young	Housekeeping	4	900
11	Roger	Palmer	Waiter	3	928.33

5. Update Employees Salary

Update all employees' salaries whose **job_title** is "**Manager**" by **adding 100**.

Retrieve information from table **employees** for all **managers**.

Submit **both UPDATE** and **SELECT** queries.

Example

id	first_name	last_name	job_title	department_id	salary
1	John	Smith	Manager	1	1000

6. Delete from Table

Write a query to delete all employees from the **employees** table who are in department **2 or 1**. Then **select** all from table **employees** and order the information by **id**.

Submit **both DELETE** and **SELECT** queries.

Example

id	first_name	last_name	job_title	department_id	salary
3	Smith	Johnson	Porter	4	1100
6	Ivan	Petrov	Waiter	3	990
7	Jack	Jackson	Executive Chef	3	1800
9	Nikolay	Ivanov	Housekeeping	4	1600

7. Create a View for Top Paid Employee

Write a query to create a **view** that selects all information about the top-paid employee from the **employees** table in the **hotel** database. Call your view to check the results.

Submit **both CREATE VIEW** and **SELECT** queries.

Example

id	first_name	last_name	job_title	department_id	salary
8	Pedro	Petrov	Front Desk Supervisor	1	2100