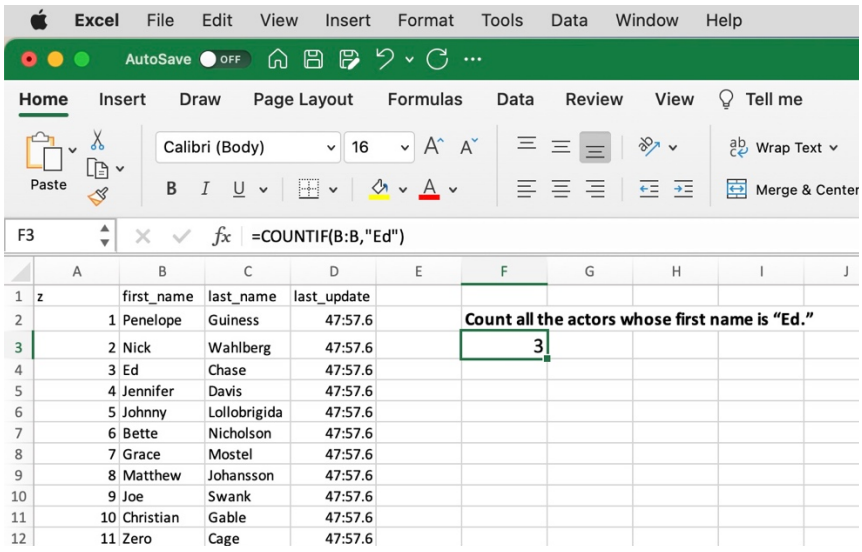
Task 3.1: Intro to Relational Databases

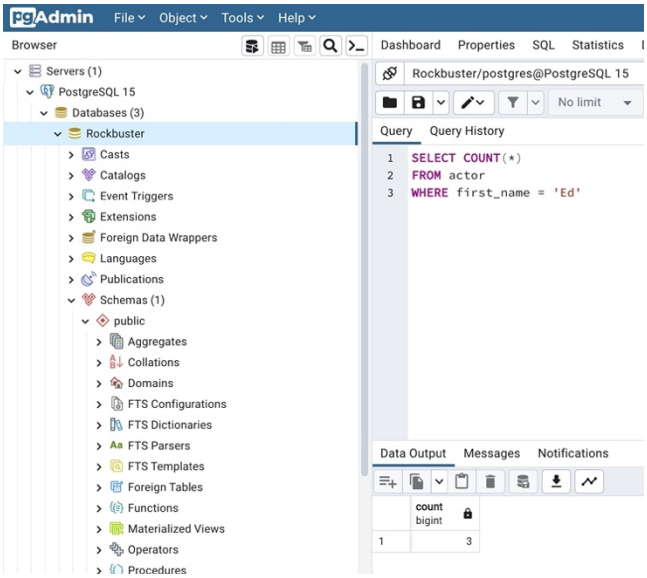
Compare and contrast spreadsheets and databases by following these steps:

- Download the Rockbuster "actor.csv" file and open it in Excel. Drawing on what you've learned in previous Achievements, use the appropriate functions in Excel to count all the actors whose first name is "Ed." Write down the result in a text document.



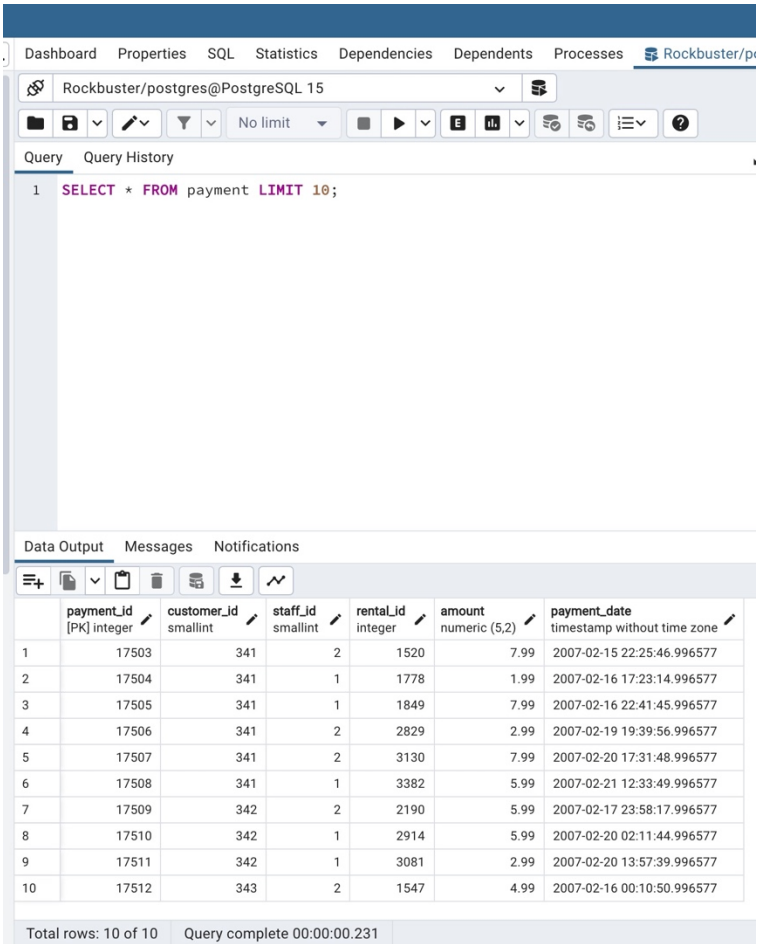
	A	B	C	D
1	z	first_name	last_name	last_update
2	1	Penelope	Guiness	47:57.6
3	2	Nick	Wahlberg	47:57.6
4	3	Ed	Chase	47:57.6
5	4	Jennifer	Davis	47:57.6
6	5	Johnny	Lollobrigida	47:57.6
7	6	Bette	Nicholson	47:57.6
8	7	Grace	Mostel	47:57.6
9	8	Matthew	Johansson	47:57.6
10	9	Joe	Swank	47:57.6
11	10	Christian	Gable	47:57.6
12	11	Zero	Cage	47:57.6

- Launch pgAdmin 4, open the Query Tool, copy-paste the following SQL statement into the Query Editor, and execute it. This statement will count all the instances of an actor with a first name "Ed" in the "actor" table. Copy the result from the **Data Output** window into your text document. Does your answer match the result from your earlier Excel count?



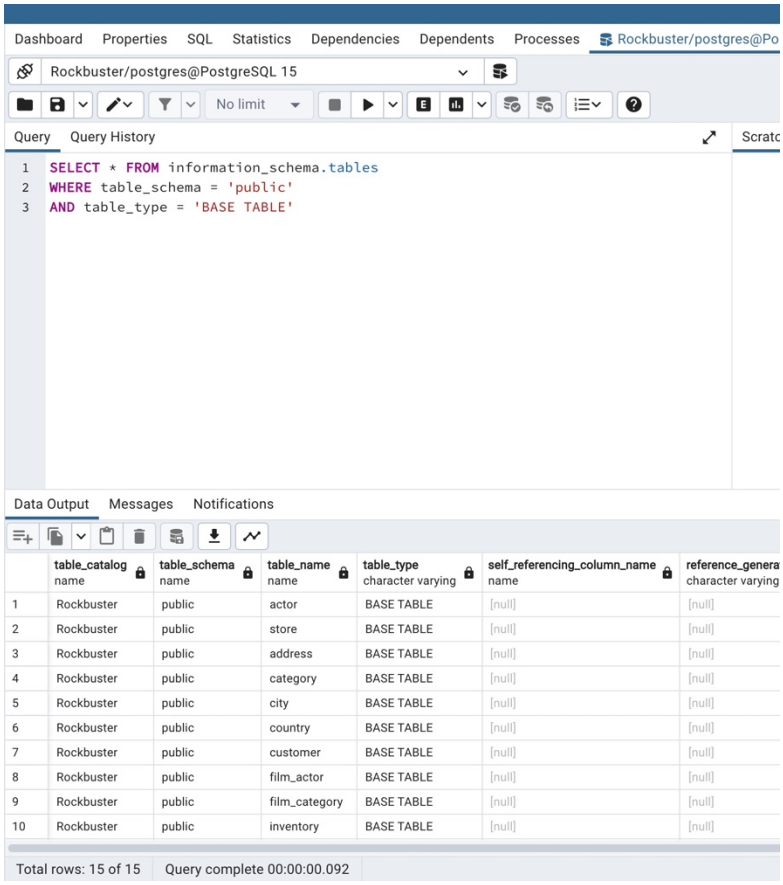
To answer the next set of questions, you'll be pasting the queries provided into the Query Editor in pgAdmin 4. Note down your answers in your running text document.

- Execute the following query and list the names of the columns in the payment table.



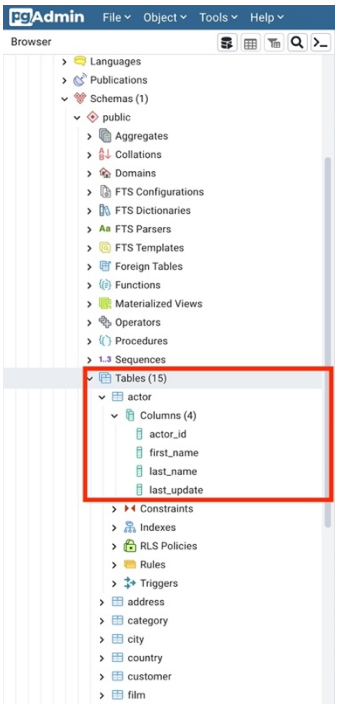
	payment_id [PK] integer	customer_id smallint	staff_id smallint	rental_id integer	amount numeric (5,2)	payment_date timestamp without time zone
1	17503	341	2	1520	7.99	2007-02-15 22:25:46.996577
2	17504	341	1	1778	1.99	2007-02-16 17:23:14.996577
3	17505	341	1	1849	7.99	2007-02-16 22:41:45.996577
4	17506	341	2	2829	2.99	2007-02-19 19:39:56.996577
5	17507	341	2	3130	7.99	2007-02-20 17:31:48.996577
6	17508	341	1	3382	5.99	2007-02-21 12:33:49.996577
7	17509	342	2	2190	5.99	2007-02-17 23:58:17.996577
8	17510	342	1	2914	5.99	2007-02-20 02:11:44.996577
9	17511	342	1	3081	2.99	2007-02-20 13:57:39.996577
10	17512	343	2	1547	4.99	2007-02-16 00:10:50.996577

- Under the “table_name” column, what are the names of the tables that are available in the Rockbuster database? (List all names.)

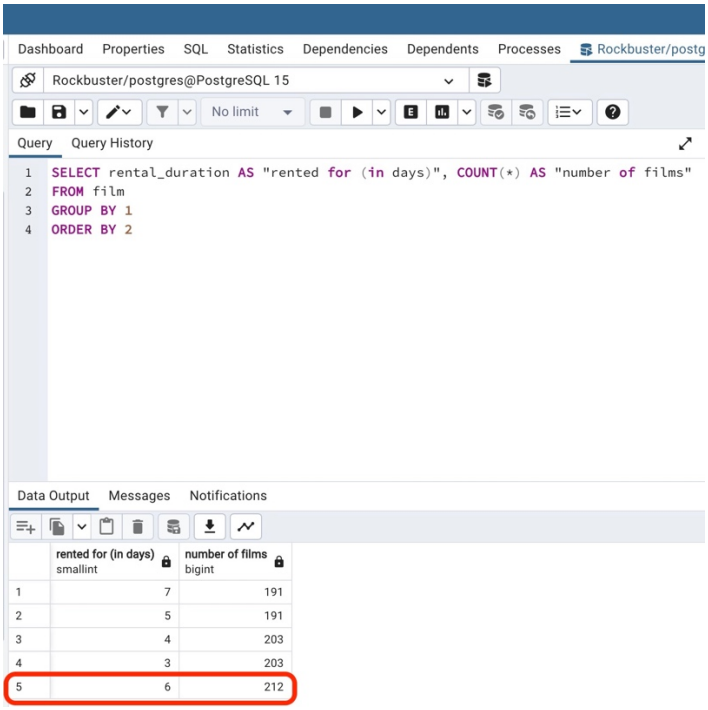


- Within the pgAdmin 4 console, can you think of another way to list all the table names in the database instead of the SQL statement above?

Yes, you can access them as shown.



- Analyze the rental duration distribution. How many days are most films rented for?



Step 4

Think about who in Rockbuster Stealth might want to use an OLAP or OLTP system for their data needs; for example, the sales department, which is interested in sales trends, would likely use an OLAP system. Describe at least 2 situations for each type of system.

OLAP (online analytical processing) System: Is better to be used when Rockbuster wants to know which movies categories/genres are most popular. It can also be used to know which films are the most sold.

OLTP (online transaction processing) System: It can be used to have accountability of rent/sales of films. Also it could help to recommend films to customers based on past purchases.

Step 5

Rockbuster Stealth has received an invoice for the licenses for its new video collection.

Take a moment to familiarize yourself with data in the invoice, then note down the answers to the questions below.

- Does the invoice contain structured or unstructured data? Write an explanation for your answer.

  It has a combination of both structured and unstructured data because it has some type of organization by having tables, but some of the information is not organized.

- Organize and store the information on the invoice in a database. Step one will be to create a table in the text document you've started (you can insert a table if you're using MS Word or Google Docs, for example). Make sure your table contains columns with the appropriate labels, as well as the values from the invoice in each column. You're focusing, here, on a high-level structuring of your data.

Merchant Information					
Name	Address	City	State	Account Name	Account Number
Oaklanders Sound Studio	4826 Norma Avenue	Anderson	Texas	Miko Santo	4929 3310 0057 5422

Customer Information					
Name	Last Name	Gender	Address	City	State
Timothy	Walker	Male	40 Sheila LA	Sparks	Nevada

Transaction Information					
Invoice	Item	Quantity	Description	Price	Total
2019001	001	01	New Video Collection Licensing	$730.00	$730.00