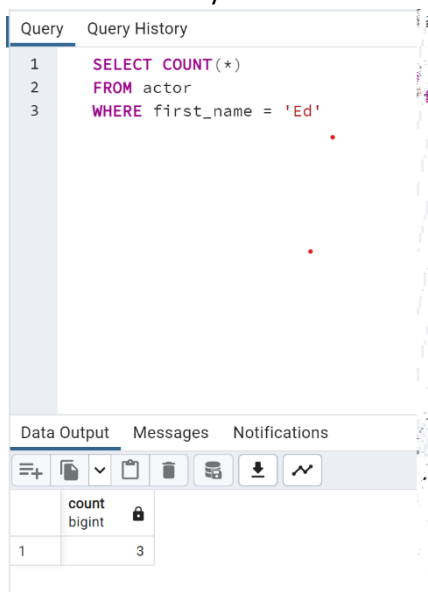# 3.1: Intro to Relational Databases

1. 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.
   - ❖ By using the filter option and selecting the name "Ed", we got the below 3 results.

actor_id	first_name	last_name	last_update
3	Ed	Chase	47:57.6
136	Ed	Mansfield	47:57.6
179	Ed	Guiness	47:57.6

2. 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?

   Yes we got the same result as in excel.

3. Did you find it easier to use Excel or the SQL statement and database to count the number of "Eds"? Provide an explanation for your answer in your text document.
   - ❖ As for this exercise, I found the excel way easier, as I am pretty clear and also because the data volume was not too much.

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STEP 3

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

   *SELECT * FROM payment LIMIT 10;*

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

   *SELECT * FROM information_schema.tables*
   WHERE table_schema = 'public'
   AND table_type = 'BASE TABLE'

   - ❖ Actor
   - ❖ Store
   - ❖ Address
   - ❖ Category
   - ❖ City
   - ❖ Country
   - ❖ Customer
   - ❖ Film_actor
   - ❖ Film_category
   - ❖ Inventory
   - ❖ Language
   - ❖ Rental
   - ❖ Staff
   - ❖ Payment
   - ❖ Film

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3. **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?**

    ❖ **We can use the below query to display just the table names, or look into Schemas as in the screenshots below.**

    SELECT Table_Name FROM information_schema.tables
    WHERE table_schema = 'public'
    AND table_type = 'BASE TABLE'

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

    SELECT rental_duration AS "rented for (in days)", COUNT(*) AS "number of films"
    FROM film
    GROUP BY 1
    ORDER BY 2

    We can see that maximum number of films (212) have been rented for 6 days. 203 films were rented for 4 and 5 days and the least number of films (191) were rented for 5 days or a week.

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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 : Would be used by the *Marketing Department* to study past trends maybe based on which language movies have done in the past and formulate a strategy for future. This can also be used by the *Customer Service Department* to study customer feedbacks & suggestions received and based on that work on the future service delivery.

OLTP: Would be used by the *Inventory Department*, to update the daily records for film issuances and returns. It could also be used by the *Finance Department* to update the profits and losses from different films.

STEP 5

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

  - ❖ *Since by definition, structured data is organised in tables of rows and columns, thus we can say that this invoice is form of Unstructured Data.*

- **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.**

TRANSACTION DETAILS

INVOICE	ITEM	QTY	DESCRIPTION	PRICE	SUB TOTAL
2019001	001	01	New Video Collection Licencing	$730	$730

CUSTOMER DETAILS

TITLE	FIRST NAME	LAST NAME	ADDRESS	STATE
Mr.	Timothy	Walker	40 Sheila LA Sparks	NV

MERCHANT DETAILS

STORE NAME	ACCOUNT NAME	ACCOUNT NUMBER	STORE ADDRESS	STATE
OAKLANDERS SOUND STUDIO	MIKO SANTO	4929331000575422	4826 NORMA AVENUE ANDERSON	TEXAS