

### 3.1: INTRO TO RELATIONAL DATABASES

#### STEP 2

The image shows two screenshots side-by-side. The top screenshot is of an Excel spreadsheet. The formula bar at the top shows the formula `=COUNTIF(B:B;"Ed")`. The spreadsheet has columns A through H. Column A contains actor IDs (1-10), column B contains first names, column C contains last names, and column D contains last update timestamps. The cell F1 is highlighted in yellow and contains the number 3. The bottom screenshot is of the pgAdmin interface. The left sidebar shows a tree view of the database structure, with 'Rockbuster' selected. The main pane shows a SQL query: `SELECT COUNT(*) FROM actor WHERE first_name = 'Ed'`. The 'Data Output' tab at the bottom shows a single row with the count 3.

	A	B	C	D	E	F	G	H
1	actor_id	first_name	last_name	last_update		3		
2	1	Penelope	Guinness	26.05.13 14:47				
3	2	Nick	Wahlberg	26.05.13 14:47				
4	3	Ed	Chase	26.05.13 14:47				
5	4	Jennifer	Davis	26.05.13 14:47				
6	5	Johnny	Lollobrigida	26.05.13 14:47				
7	6	Bette	Nicholson	26.05.13 14:47				
8	7	Grace	Mostel	26.05.13 14:47				
9	8	Matthew	Johansson	26.05.13 14:47				
10	9	Joe	Swank	26.05.13 14:47				
11	10	Christian	Gable	26.05.13 14:47				

```
SELECT COUNT(*)
FROM actor
WHERE first_name = 'Ed'
```

count
3

*Did you find it easier to use Excel or the SQL statement and database to count the number of “Eds”?*

- In both Excel and PostgreSQL, the answer is 3. Personally, the Excel felt easier and more comfortable just because it is something I am already familiar with.

### STEP 3

List the names of the columns in the payment table.

Data Output Messages Notifications						
	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

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

- "actor", "store", "address", "category", "city", "country", "customer", "film\_actor", "film\_category", "inventory", "language", "rental", "staff", "payment", "film"

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?

- Another way to look for "table\_name" column would be to head to the console menu on the left and under 'Rockbuster' click on 'Schemas'. Then click on 'Public' and then 'Tables'.

How many days are most films rented for?

Query Query History	
<pre>1 SELECT rental_duration AS "rented for (in days)", COUNT (*) AS "number of films" 2 FROM film 3 GROUP by 1 4 ORDER by 2</pre>	
Data Output Messages Notifications	
rented for (in days) smallint	number of films bigint
1	7
2	5
3	4
4	3
5	6

The films are rented for between 3 to 7 days.

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## STEP 4

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*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	OLTP
Marketing – To see what has been popular in the past to know what genres to promote more.	Accounting – To track past and future sales transactions.
Operations – To check for KPIs such as rental times.	Customer Care – To track information details of current and new customers.

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## STEP 5

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*Does the invoice contain structured or unstructured data?*

- The invoice contains structural data. Although it is not fully formatted in tabular form. The data can be extracted and formatted into columns and rows.

*Organize and store the information on the invoice in a database*

Invoice Number	First Name	Surname	Address	City	State	Item Number	Item Description	QTY	Price
2019001	Timothy	Walker	40 Sheila La	Sparks	NV	001	New Video Collection Licensing	1	\$ 730