

## 3.1: Intro to Relational Databases

### Step 2

- a) There are 3 actors with the name Ed.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	actor_id	first_name	last_name	last_update																	
4	3	Ed	Chase	47:57.6																	
138	136	Ed	Mansfield	47:57.6																	
180	179	Ed	Guinness	47:57.6																	
202																					

- b) SQL gave the same result

The screenshot shows the pgAdmin 4 interface. On the left, the 'Servers' tree is expanded to show the 'Rockbuster' database. The 'Query Editor' tab is active, displaying the following SQL query:

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

The 'Data Output' tab shows the result of the query:

count
3

For me it was easier to use the Excel Tool Filtrate.

### Step 3

Run the following query:

```
SELECT * FROM payment LIMIT 10
```

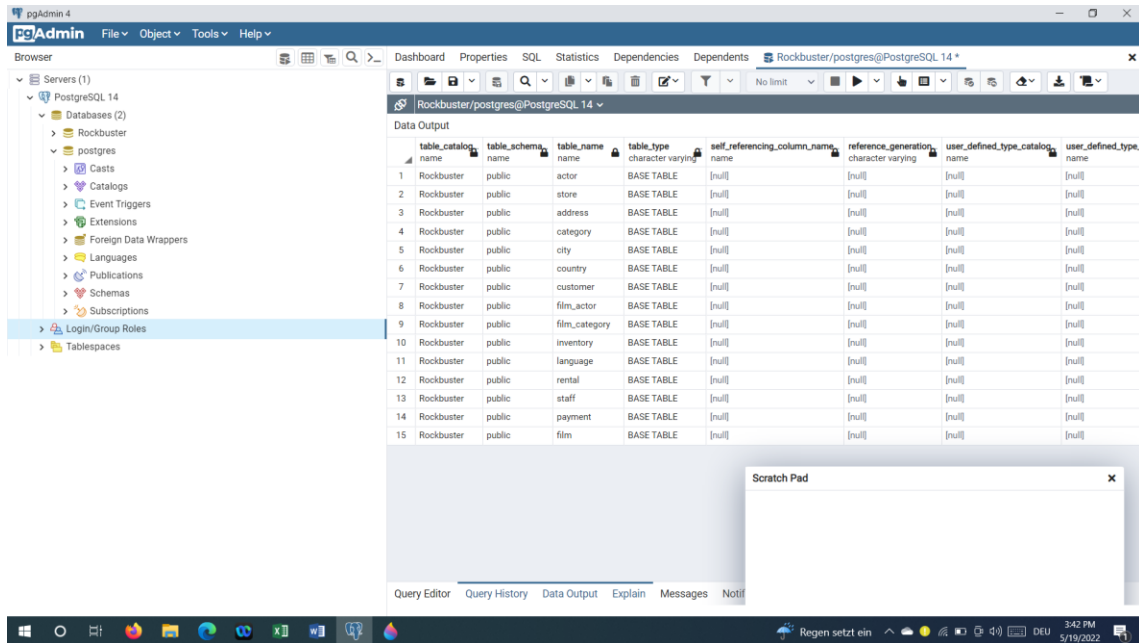
The screenshot shows the pgAdmin 4 interface. The 'Query Editor' tab is active, displaying the following SQL query:

```
SELECT * FROM payment LIMIT 10
```

The 'Data Output' tab shows the result of the query:

payment_id	customer_id	staff_id	rental_id	amount	payment_date
1	17503	341	2	1520	2007-02-15 22:25:46.996577
2	17504	341	1	1778	2007-02-16 17:23:14.996577
3	17505	341	1	1849	2007-02-16 22:41:45.996577
4	17506	341	2	2829	2007-02-19 19:39:56.996577
5	17507	341	2	3130	2007-02-20 13:31:48.996577
6	17508	341	1	3382	2007-02-21 12:33:49.996577
7	17509	342	2	2190	2007-02-17 23:58:17.996577
8	17510	342	1	2914	2007-02-20 02:11:44.996577
9	17511	342	1	3081	2007-02-20 13:57:39.996577
10	17512	343	2	1547	2007-02-16 00:10:50.996577

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



The screenshot shows the pgAdmin 4 interface. The left pane displays the database structure, with 'Rockbuster' selected under 'Databases (2)'. The main pane shows the results of a SQL query, displaying a table with 15 rows of data. The table has the following columns: table\_catalog, table\_schema, table\_name, table\_type, self\_referencing\_column\_name, reference\_generation, user\_defined\_type\_catalog, and user\_defined\_type\_name. The data is as follows:

table_catalog	table_schema	table_name	table_type	self_referencing_column_name	reference_generation	user_defined_type_catalog	user_defined_type_name
Rockbuster	public	actor	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	store	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	address	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	category	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	city	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	country	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	customer	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	film_actor	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	film_category	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	inventory	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	language	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	rental	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	staff	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	payment	BASE TABLE	[null]	[null]	[null]	[null]
Rockbuster	public	film	BASE TABLE	[null]	[null]	[null]	[null]

### Step 3

- Run the following query and list the name in the table\_column column

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

	table_catalog	table_schema	table_name	table_type	self_referencing_column_name	reference_generation	user_defined_type_catalog	user_defined_type_s
1	Rockbuster	public	actor	BASE TABLE	[null]	[null]	[null]	[null]
2	Rockbuster	public	store	BASE TABLE	[null]	[null]	[null]	[null]
3	Rockbuster	public	address	BASE TABLE	[null]	[null]	[null]	[null]
4	Rockbuster	public	category	BASE TABLE	[null]	[null]	[null]	[null]
5	Rockbuster	public	city	BASE TABLE	[null]	[null]	[null]	[null]
6	Rockbuster	public	country	BASE TABLE	[null]	[null]	[null]	[null]
7	Rockbuster	public	customer	BASE TABLE	[null]	[null]	[null]	[null]
8	Rockbuster	public	film_actor	BASE TABLE	[null]	[null]	[null]	[null]
9	Rockbuster	public	film_category	BASE TABLE	[null]	[null]	[null]	[null]
10	Rockbuster	public	inventory	BASE TABLE	[null]	[null]	[null]	[null]
11	Rockbuster	public	language	BASE TABLE	[null]	[null]	[null]	[null]
12	Rockbuster	public	rental	BASE TABLE	[null]	[null]	[null]	[null]
13	Rockbuster	public	staff	BASE TABLE	[null]	[null]	[null]	[null]
14	Rockbuster	public	payment	BASE TABLE	[null]	[null]	[null]	[null]
15	Rockbuster	public	film	BASE TABLE	[null]	[null]	[null]	[null]

- 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?

Database > Rockbuster > Schemas > Tables

### Step 3

- Run the following query, 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

Data Output			
	rented for (in days) smallint	number of films bigint	
1	7	191	
2	5	191	
3	4	203	
4	3	203	
5	6	212	

Most of the films are rented for 6 days.

#### Step 4

OLAP - Numbers of movies rented in last days, weeks, months – Marketing department

OLTP - Keeping data about transaction and payment, Transaction processing of renting a movie

#### Step 5

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

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

Structured data as it can be arranged in a table.

- ***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.***

Name	Invoice Number	Item	Quantity	Price
Timothy Walker	2019001	001	01	730 \$

Suppliers Name	Account Name	Account Nr.	City	State
Oaklanders	Miko Santo	4929331999575422	Anderson	Texas