

.1 Intro to Relational Databases by Rich Bradley

1. PostgreSQL installed and Achievement 3 project brief downloaded.

2. Download Rockbuster “actor.csv” file.

a. In Excel I used the countif function and the formula is =COUNTIF(B2:B201,”Ed”) the answer was 3.

b. Launch pgAdmin4, copy and paste the data output.

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer displays the database structure, with the 'customer' table selected under the 'rental' schema. The main pane shows the Query Editor with the following SQL query:

```
1 SELECT COUNT(*)
2 FROM actor
3 WHERE first_name = 'Ed'
4
```

Below the query editor, the Data Output tab shows the results of the query:

count
3

The status bar at the bottom indicates the current location: Servers > PostgreSQL 15 > Databases > Rockbuster > Schemas > public > Tables > customer. The cursor is at line 3, column 27.

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

pgAdmin 4

File Object Tools Help

Object Explorer

- > category
- > city
- > country
- > customer
- > film
- > film_actor
- > film_category
- > inventory
- > language
- > payment
- > rental
 - Columns (7)
 - rental_id
 - rental_date
 - inventory_id
 - customer_id
 - return_date
 - staff_id
 - last_update
 - > Constraints
 - > Indexes
 - > RLS Policies
 - > Rules

Dashboard Properties SQL Statistics Dependencies Dependents Processes

Rockbuster/postgres@PostgreSQL 15

Query Query History

```
1 SELECT * FROM payment LIMIT 10;
```

Scratch Pad

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
5	17507	341	2	3130	7.99	2007-02-20 17:31:40.996577
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

Servers > PostgreSQL 15 > Databases > Rockbuster > Schemas > public > Tables > payment 083 Ln 1, Col 34

pgAdmin 4

File Object Tools Help

Object Explorer

- > Foreign Data Wrappers
- > Languages
- > Publications
- > Schemas (1)
 - public
 - Aggregates
 - Collations
 - Domains
 - FTS Configurations
 - FTS Dictionaries
 - FTS Parsers
 - FTS Templates
 - Foreign Tables
 - Functions
 - Materialized Views
 - Operators
 - Procedures
 - Sequences
 - Tables (15)
 - actor
 - address
 - category
 - city
 - country

Dashboard Properties SQL Statistics Dependencies Dependents Processes

Rockbuster/postgres@PostgreSQL 15

Query Query History

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

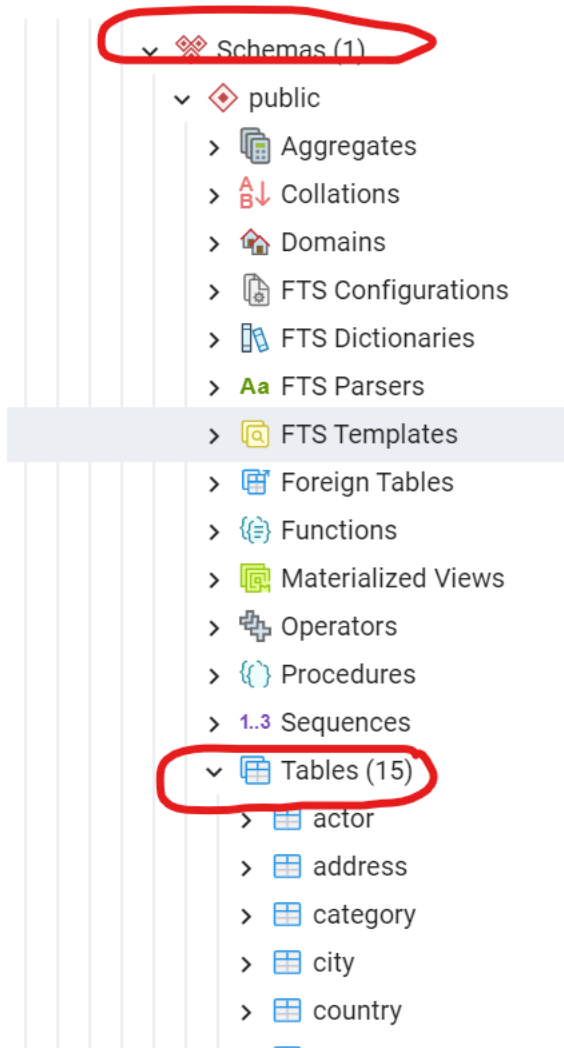
Scratch Pad

Data Output Messages Notifications

	table_catalog name	table_schema name	table_name name	table_type character varying	self_referencing_column_name name	re cl
1	Rockbuster	public	actor	BASE TABLE	[null]	[i
2	Rockbuster	public	store	BASE TABLE	[null]	[i
3	Rockbuster	public	address	BASE TABLE	[null]	[i
4	Rockbuster	public	category	BASE TABLE	[null]	[i
5	Rockbuster	public	city	BASE TABLE	[null]	[i

Total rows: 15 of 15 Query complete 00:00:00.073 Ln 3, Col 33

Another way to list all the table names instead of the statement above is to click on the Schemas, then Tables and open the list of table names. See screenshot.



The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer shows the database structure, with the 'rental' table selected under the 'Columns (7)' section. The main pane displays a SQL query:

```

1 SELECT rental_duration AS "rented for (in days)", CO
2 FROM film
3 GROUP BY 1
4 ORDER BY 2

```

Below the query, the Data Output tab shows the results of the query. The results are displayed in a table with two columns: 'rented for (in days)' (smallint) and 'number of films' (bigint). The table contains 5 rows of data.

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

At the bottom, the status bar indicates 'Total rows: 5 of 5' and 'Query complete 00:00:00.093'.

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.

a. OLAP

- i. For handling lots of data READ operations
- ii. Analytical and data mining system
- iii. Used for answering questions like how many units were sold and how many items were left in stock.

b. OLTP

- i. For handling lots of data insertion deletion and updating.
- ii. Transactional
- iii. Used for recording and updating interactions like storing new customer order details or updating order shipment status.

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

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

i. The invoice contains structured data. All the information on this invoice can be organized in tables of rows and columns, easy to manipulate, retrieve relevant information. It is basically can be part of a contact list.

b. Organize and store the information on the invoice in a database, create a table.

Customer

_Name

Bus Name Street_Address City State Invoice # Item Qty Descript Price Acct #

Customer _Name	Bus Name	Street_Address	City	state	invoice	item	qty
Miko Santo	Oaklanders Sound Studio	4826 Norma Avenue	Anderson	TX	2019001	001	01

descript	price	Acct
New Video Collection Licensing	\$730.00	4929 3310 0057 5422