








3.1: Intro to Relational Databases

Step 2: Compare and contrast spreadsheets and databases

- ❖ Excel- 3 records of the first name with ED found
- ❖ SQL statement and database count for ED is 3

Data output		Messages	Notification
			
			
	count		
	bigint		
			
1	3		

2b: Check that your answer matches your answer from step 2a. Was it easier to use Excel or the SQL statement and database to count the number of “Eds”? Explain your answer in the same text document.

- ❖ Yes, both answers match. It was easier to use the SQL statement and database to count the number of “Eds” than Excel because with excel I had to go through the processes of filtering to get the answer while typing just the SQL statement brings out the data counts.

Step 3: 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

Total rows: 10 of 10 Query complete 00:00:00.597

3b: Under the “table_name” column, what are the names of the tables that are available in the Rockbuster database? (List all names.)

- ❖ Payment, Film, actor, address, category, city, country, customer, film_actor, film_category, Inventory, language, rental, staff, store.

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

3c: 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?

- ❖ On the left side where we have the browser, click on the servers -database-Rockbusters-Schemas- Tables (When you click on “Tables” one can see the list of all table names) – right click on each table and select view/edit data to see data.

3d: Analyze the rental duration distribution. How many days are most films rented for?

- ❖ Most films are rented for 6 days. Please see the reference below.

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

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)
 - Answering business questions like which country or city rented the most film last year
 - Analyzing the rental duration like how many days are most films rented for?
- ❖ OLTP (Online Transaction Processing)
 - Record transactions across their different payment methods.
 - Storing new customer order details.

Step 5:

5a: Does the invoice contain structured or unstructured data? Write an explanation for your answer.

- ❖ It contains structured data as the information can be easily categorized into a table.

5b: 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 and the values from the invoice in each column. You're focusing, here, on a high-level structuring of your data.

❖ **Transaction Table**

	Invoice number	Item NUMBER	Quantity	Description	Price
1	2019001	001	01	New video collection licensing	\$730

❖ **Customer Table**

Gender	First name	Last name	Address	City	State
Male	Timothy	Walker	40 Sheila la	Sparks	Nevada