**INTRODUCTION TO RELATIONAL DATABASE**

**Step 2**

**Compare the spreadsheets and databases by following the steps below:**

**➢ Download the Rockbuster “actor.csv” file and open it in Excel. ➢**

**Use the appropriate functions in Excel to count all the actors whose first name is “Ed.” Write down the result.**

Graphical user interface, application, table, Excel

Description automatically generated

**➢ Launch pgAdmin 4, open the Query Tool, copy-paste the SQL statement into**

**the Query Editor, and execute it.**

**SELECT COUNT(\*)**

**FROM actor**

**WHERE first\_name = 'Ed'**

Graphical user interface, text, application, Word

Description automatically generated

* **Copy the result that tells you the number of times the first name “Ed” appears in the “actor” table from the Data Output window into your text document from step 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”? Provide an explanation for your answer in the same text document.**

It is very easy to use the SQL Statement to count the actors with just issuing a statement. In the excel spreadsheet, extra attention must be taken when selecting the column to execute the task.

**Step 3**

**To answer the next set of questions, you’ll be pasting the queries provided into the Query Editor in pgAdmin 4. Note down your answers in your running text document.**

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

**SELECT \* FROM payment LIMIT 10;**

**Text

Description automatically generated**

* **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'**

List of table names: actor, store, address, category, city, country, customer, film\_actor, film\_category, inventory, language, rental, staff, payment and film

Graphical user interface, application, table, Excel

Description automatically generated

* **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?**

**Graphical user interface, application

Description automatically generated**

* **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**

Graphical user interface, text, application

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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.**

* Marketing department can use **OLAP** for market research analysis, sales forecasting, promotions analysis, customer analysis, and market/customer segmentation.
* Inventory & Procurements can use **OLTP**, with movies being rented out, returning thus the need to insert or update records in the system.

**Step 5**

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

**Take a moment to familiarize yourself with data in the invoice, then note down the answers to the questions below.**

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

The data in the invoice is structured. We can clearly see that this is predefined data which can be categorized into rows and columns in a table for example, Item, Quantity, Description etc.

* **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.**

**Customer**

Title

First

Last

Gender Address

City

State

Name Name

State Abbreviation

Mr.

Timothy Walker Male

40 Sheila La Sparks Nevada

NV

**Transaction**

Invoice No. Item

Quantity

Description

Currency

Price

2019001

001

01

New Video Collection $ US Dollar Licensing

730

**Merchant**

Name

Address City

State State Abbreviation

Account name

Account no.

Oaklanders Sound Studio

4826

Norma Avenue

Anderson Texas TX

Miko Santo

4929 3310 0057 5422