**Exercise 3.1**

**Step 1**

* **Download the Rockbuster “actor.csv” file and open it in Excel. Drawing on what you’ve learned in previous Achievements, use the appropriate functions in Excel to count all the actors whose first name is “Ed.” Write down the result in a text document.**
  + =COUNTIF(B2:B201,"Ed")
  + Result = 3
* **Launch pgAdmin 4, open the Query Tool, copy-paste the following SQL statement into the Query Editor, and execute it. This statement will count all the instances of an actor with the first name “Ed” in the “actor” table. Copy the result from the Data Output window into your text document.** 
  + A screenshot of a computer

    Description automatically generated
* **Does your answer match the result from your earlier Excel count?**
  + Yes
* **Did you find it easier to use Excel or the SQL statement and database to count the number of “Eds”? Explain your answer in your text document.**
  + I think SQL is a little more user-friendly. In that sense, it was easier to use SQL than Excel. In excel, you really have to know what each formula means and how to use it, whereas the formula format in SQL is a little more self-explanatory.

**Step 3**

* **Execute the following query( SELECT \* FROM payment LIMIT 10;) and list the names of the columns in the payment table.**
  + "payment\_id", "customer\_id”, "staff\_id”, "rental\_id", "amount", "payment\_date"
* **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?**
  + No, but all the table names can be seen in the sidebar menu
* **Analyze the rental duration distribution. How many days are most films rented for?**
  + Most films are rented for somewhere between 3 and 7 days, with 6 days being the most common length of time.

**Step 4**

* **Consider 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 two situations for each type of system.**
  + OLAP
    - **Sales/Marketing:** The sales department can use an OLAP system to analyze sales data and identify popular movie genres and rental trends over time. The marketing team can use an OLAP system to analyze rental patterns by location, helping them understand regional preferences and tailor marketing campaigns to specific areas.
    - **Performance Analysis:** The performance analysis team can use an OLAP system to analyze movie performance, such as rental rates and customer ratings. This helps them make decisions about acquiring new titles and renewing licenses.
  + OLTP
    - **Customer Account Management:**
      * Customer service can use an OLTP system to manage customer accounts in real-time, including updating personal information and viewing rental history, ensuring accurate and up-to-date data.
    - **Finance:**
      * The finance department can use an OLTP system to handle payments in real time, including processing charges and managing refunds.

**Step 5**

* **Does the invoice contain structured or unstructured data? Write an explanation for your answer.**
  + Structured data because it contains specific information in a predefined format.
* **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.**

|  |  |
| --- | --- |
| **invoice\_number** | 2019001 |
| **vendor\_name** | Oaklanders Sound Studio |
| **vendor\_address** | 4826 Norma Avenue  Anderson, TX |
| **customer\_first\_name** | Timothy |
| **customer\_last\_name** | Walker |
| **customer\_address** | 40 Sheila LA Sparks, NV |
| **item\_id** | 001 |
| **item\_description** | New Video Collection Licensing |
| **quantity** | 1 |
| **unit\_price** | $730.00 |
| **total** | $730.00 |
| **account\_first\_name** | Miko |
| **account\_last\_name** | Santo |
| **account\_number** | 4929 3310 0057 5422 |