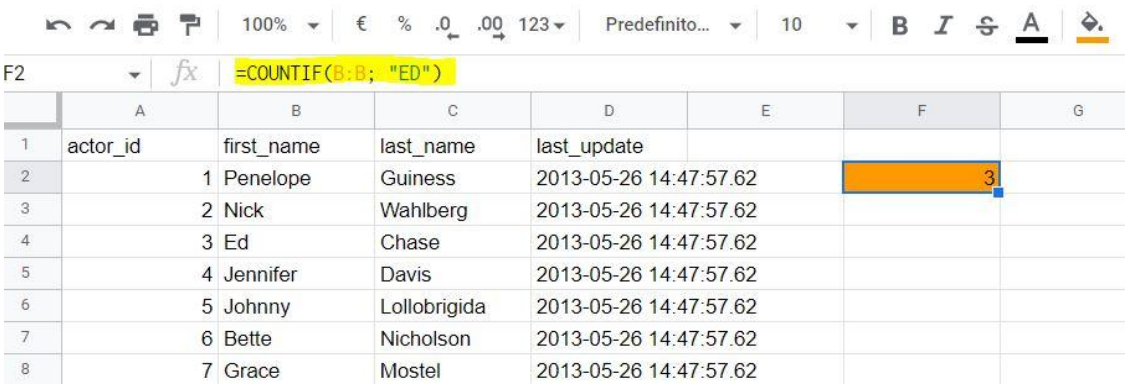
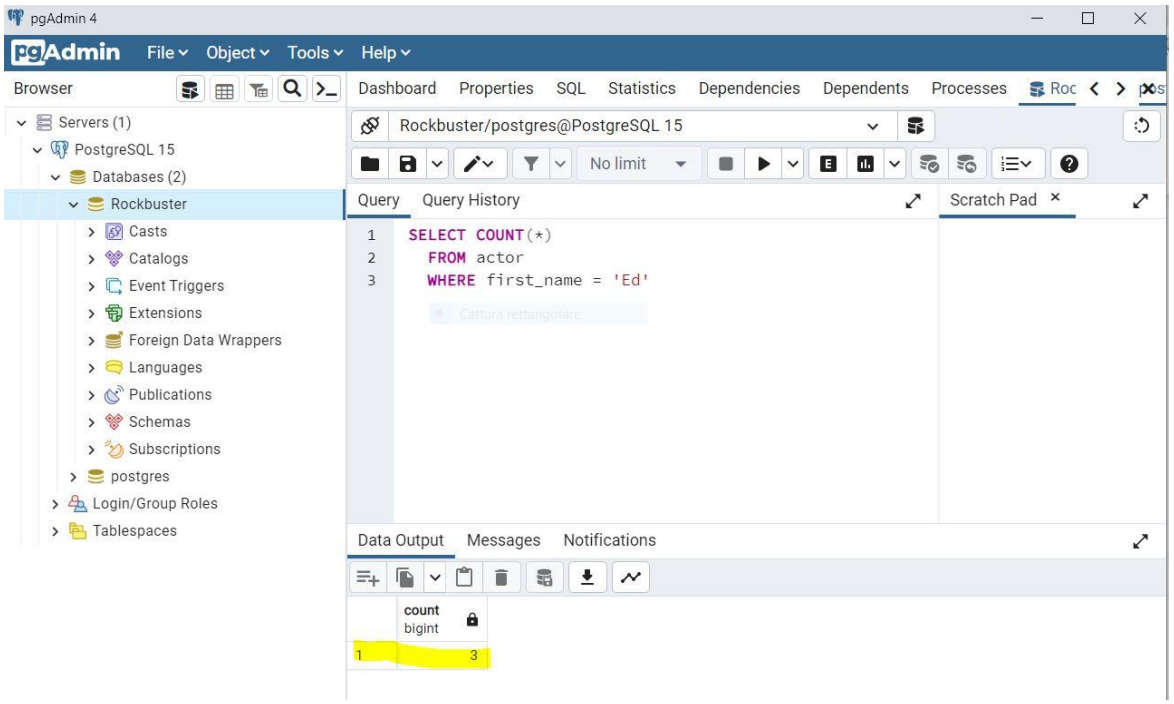
**STEP 2**

1) 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."
    a) I used the "Countif" function and the result was 3. There are three actors whose first name is "Ed" .




| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | actor_id | first_name | last_name | last_update | | | |
| 2 | 1 | Penelope | Guiness | 2013-05-26 14:47:57.62 | | 3 | |
| 3 | 2 | Nick | Wahlberg | 2013-05-26 14:47:57.62 | | | |
| 4 | 3 | Ed | Chase | 2013-05-26 14:47:57.62 | | | |
| 5 | 4 | Jennifer | Davis | 2013-05-26 14:47:57.62 | | | |
| 6 | 5 | Johnny | Lollobrigida | 2013-05-26 14:47:57.62 | | | |
| 7 | 6 | Bette | Nicholson | 2013-05-26 14:47:57.62 | | | |
| 8 | 7 | Grace | Mostel | 2013-05-26 14:47:57.62 | | | |

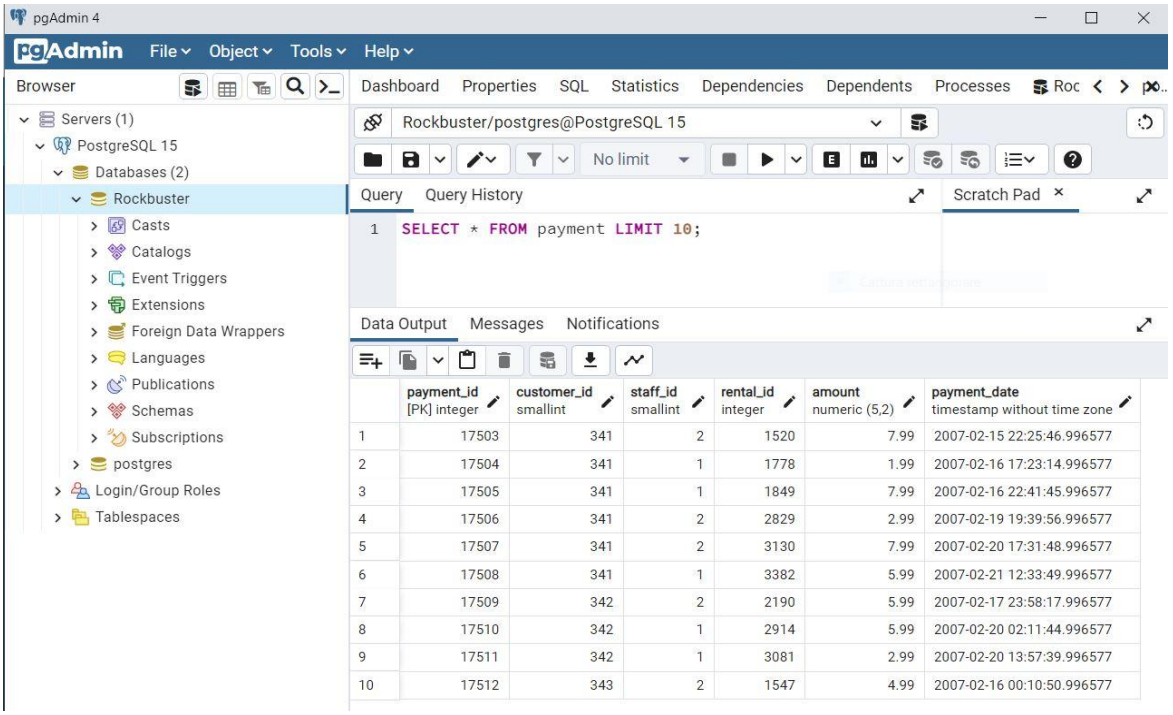
2) Launch pgAdmin 4, open the Query Tool, copy-paste the SQL statement below into the Query Editor, and execute it.
    a) The result was three again, as per below screenshot:



3) 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.
    - The answer in both cases is three, as we can see from the screenshots. Excel was simpler for me to use than pgAdmin 4 because all I needed to do was apply a straightforward function.

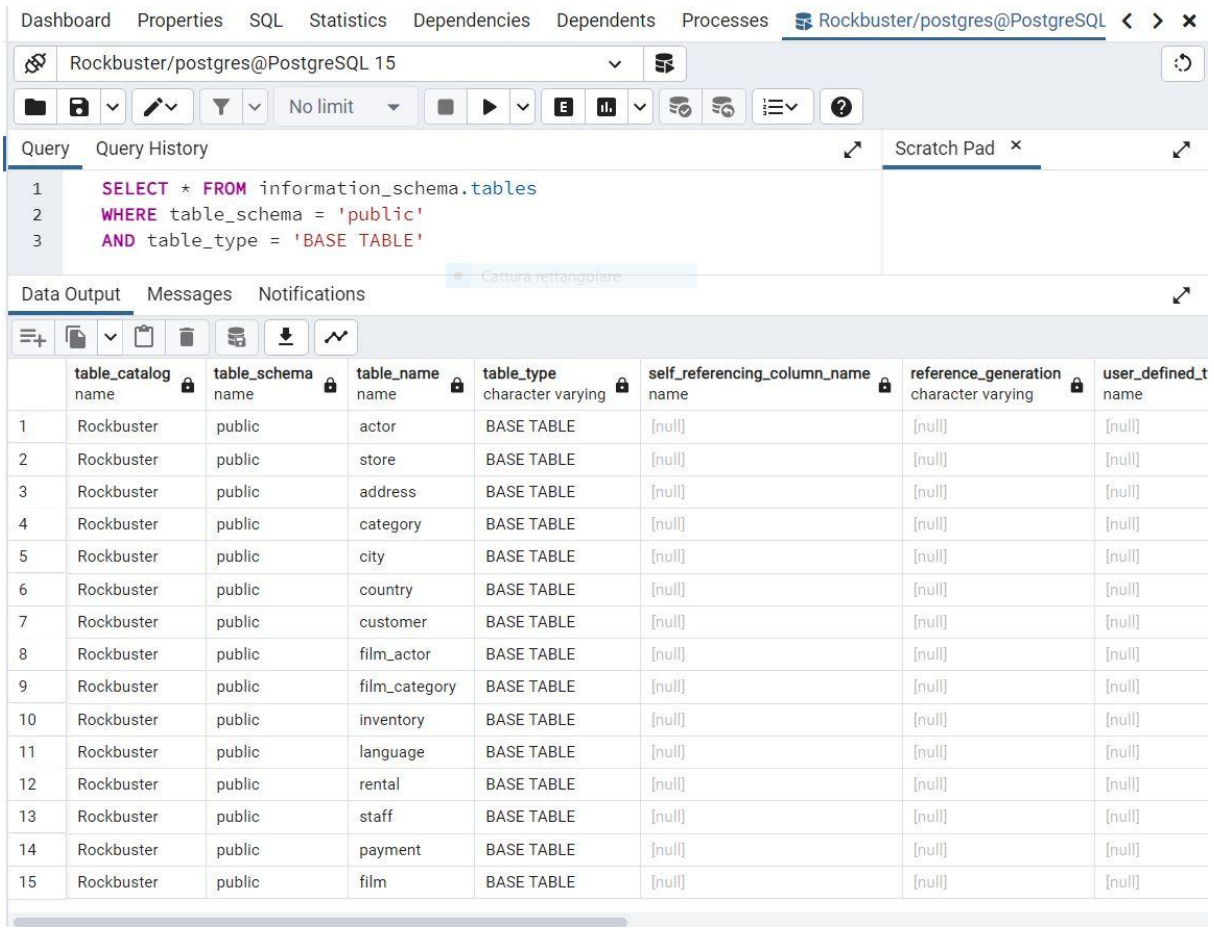
**STEP 3**

1) Under the “table_name” column, what are the names of the tables that are available in the Rockbuster database? (List all names.)
    a) Unfortunately, as can we see from the below screenshot, there are no names available as there is no “table_name” column at all:



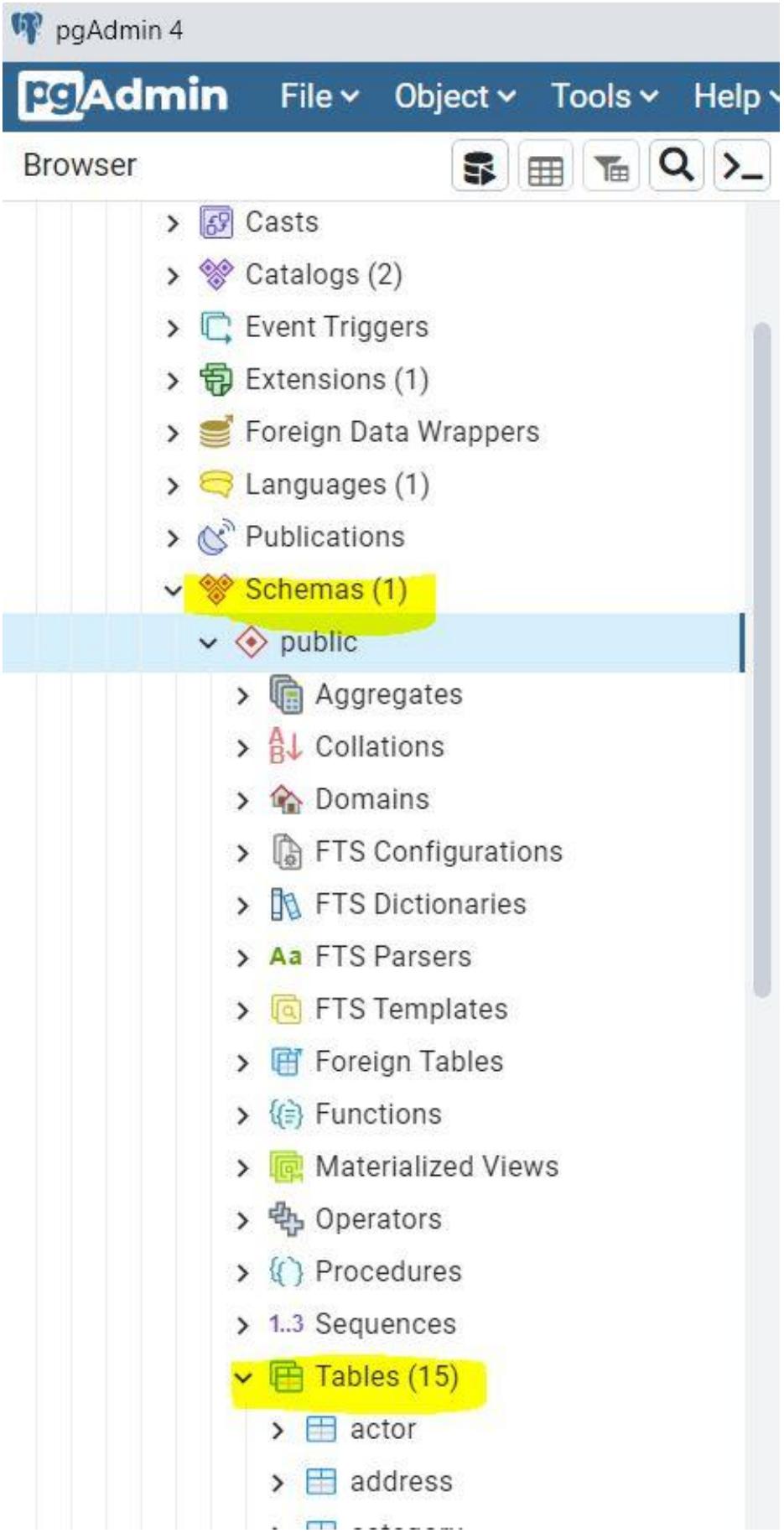

| | payment_id [PK] integer | customer_id smallint | staff_id smallint | rental_id integer | amount numeric (5,2) | payment_date timestamp without time zone |
|---|---|---|---|---|---|---|
| 1 | 17503 | 341 | 2 | 1520 | 7.99 | 2007-02-15 22:25:46.996577 |
| 2 | 17504 | 341 | 1 | 1778 | 1.99 | 2007-02-16 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 |

2) Under the “table_name” column, what are the names of the tables that are available in the Rockbuster database? (List all names.)
    a) As per screenshot below, the tables available are:
        i) actor, store, address, category, city, country, customer, film_actor, film_category, inventory, language, rental, staff, payment, film

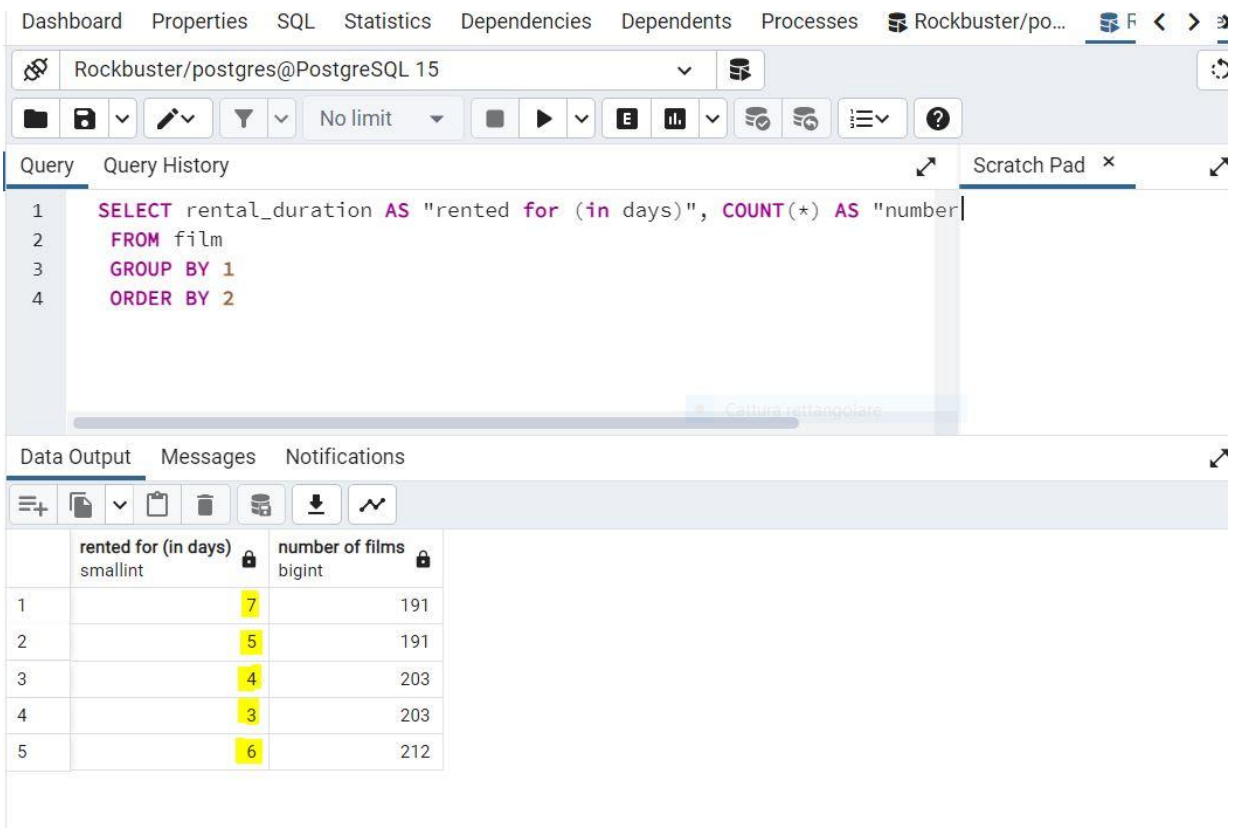



| | table_catalog name | table_schema name | table_name name | table_type character varying | self_referencing_column_name name | reference_generation character varying | user_defined_t name |
|---|---|---|---|---|---|---|---|
| 1 | Rockbuster | public | actor | BASE TABLE | [null] | [null] | [null]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

3) 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?
    a) We can fund all the table names listed on the right, under “Schemas”, “public” and then “Tables.” See the screenshot below.


pgAdmin 4
pgAdmin
File
Object
Tools
Help
Browser
Casts
Catalogs (2)
Event Triggers
Extensions (1)
Foreign Data Wrappers
Languages (1)
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

4) Analyze the rental duration distribution. How many days are most films rented for?
    a) See screenshot below.




**STEP 4**

1) 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) The marketing team may use an OLAP system to retrieve information on orders from the past year in order to look for trends over time and determine which genres and films are most popular. It might also be used to keep track of how many units were sold last month or how many things are still in stock so that new orders can be placed.
    b) Instead, the accounting and finance departments can track financial transactions using an OLTP system. It might also be used to record and update other interactions, such as saving new client order details and updating customer data.

**STEP 5**

1) Does the invoice contain structured or unstructured data? Write an explanation for your answer.
    a) Unstructured data lacks a predefined structure, whereas structured data is frequently organized in tables with rows and columns. Since some information is arranged in tables and some is not, this invoice has both.

- 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).

### Transaction

| Invoice number | Item | Quantity | Description | Price | Total Spent |
|---|---|---|---|---|---|
| 2019001 | 001 | 1 | New Video Collecting Licensing | 730$ | 730$ |

### Customer

| Title | First Name | Surname | Address | City | State |
|---|---|---|---|---|---|
| Mr | Timothy | Walker | 40 Sheila La | Sparks | NV |

### Merchant

| Account number | Name | Account Name | Address | City | State |
|---|---|---|---|---|---|
| 4929 3310 0057 5422 | Oaklanders Sound Studio | Miko Santo | 4826 Norma Avenue | Anderson | Texas |