## CASE STUDY **ROCKBUSTER STEALTH**

## SUMMARY OF INVENTORY AND REVENUES

TOOLS: PostgreSQL, Excel, Tableau Public LANGUAGE: SQL



Rockbuster Stealth is a fictional brick-and-mortar movie rental company with stores around the world. The management plans to use existing movie licenses to launch an online video rental service. To make informed decisions, they need to know what is in the store and how the sales performed. Additionally, the marketing department wants to learn the company's most loyal customers.

In this query-based summary of inventory and revenues of an online video rental store, the SQL commands were implemented incrementally.

The data set is around 3MB and contains several files with film inventory, customers, and payments, among other variables. No source for this data was provided. 1 The goal of the project was achieved through exploration of the inventory and revenues of the stores using the relational database management system pgAdmin4 within PostgreSQL.



First, it was important to understand the relationships that exist in the Rockbuster database and get an overview of all the tables. The snowflake-type entity relationship diagram was extracted with DbVisualizer. The list of all the fact and dimension tables along with data types, keys, and column descriptions were collected in the data dictionary.

Then, by using the basic CRUD commands and writing simple queries for ordering, grouping, filtering, or summarizing the data, the process of understanding the data was easier. In the next steps, I used commands for the data cleaning process to find inconsistencies, missing values, or duplicates.

SQL queries were used to calculate descriptive statistics for selected columns.



## Fig. 2 Query to find missing values.

By writing queries and subqueries combined with joins between tables using their common keys, answers for more advanced business questions were found.

The marketing department was planning to award Rockbuster's most loyal customers, so several queries were implemented leading to finding the top 5 customers within the top 5 countries.

Additionally, the same questions were answered using the concept of CTE to learn the advantages of common table expressions over subqueries in complex problems.



Fig. 3 SQL query using CTE.

While working on the movie rental project, I found it very interesting to recognize the advantages and disadvantages of using functions available in Excel and SQL commands for queries to reach the same results in the data analysis process.

My findings for the Rockbuster's management board about the film inventory and revenues are presented with Excel charts. The answers for the marketing department are visualized in Tableau's storyboards.

The presentation with results is available <u>here</u>.



Fig. 4 SQL query results visualized with Excel charts.



Fig. 5 SQL query results visualized with Tableau and embedded into PowerPoint.