



Bookstore Inventory Management – SQL Fundamentals Case Study

Overview

You have been hired by SQLNest Books, a growing online and offline bookstore, to help them analyze and manage their book inventory using SQL.

The company maintains a database containing details of every book in stock — including title, author, genre, price, page count, publication year, ratings, stock levels, and more.

As part of your role, you will write SQL queries to:

- Retrieve and filter books based on various conditions.
- Sort and limit results to identify top-selling or oldest titles.
- Use operators, wildcards, and range queries to find specific records.
- Work with DISTINCT, CASE statements, aggregations, and built-in functions to extract insights.
- Combine multiple result sets using UNION and UNION ALL.

- Calculate key metrics such as average price, total stock value, and create custom categorisations.

This case study will help you practice and master fundamental SQL skills without using advanced topics like JOINS, CTEs, or subqueries. It will focus solely on core SQL building blocks essential for every aspiring data professional.

The following are the problems to be solved:

A. Data Retrieval & Filtering

1. Retrieve all details of every book in the inventory.
 2. List the name, author, and price of each book available.
 3. Display the titles of books that are considered expensive according to company standards (above a certain price threshold).
 4. Identify books that are currently out of stock.
 5. Find the top 10 most expensive books in the catalog.
 6. Retrieve the five oldest books based on their publication year.
 7. Find books that have not yet been rated by customers.
 8. Show books where the publisher's information is available.
-

B. Working with Operators

1. Display each book's title, its listed price, and the price after applying a 10% tax.
 2. Identify books with a high page count but still priced affordably.
 3. Find books whose rating is different from the highest possible score.
 4. Retrieve books that are either not in English or are offered in a digital format.
-

C. Pattern Matching & Range Filtering

1. List books whose titles include a certain keyword, regardless of case.
2. Identify authors whose last names start with a specific two-letter prefix.

3. Find all books that fall under a selected set of genres.
 4. Retrieve books whose prices are within a specified range.
 5. List books published outside of a given year range.
-

D. Identifying Unique Values

1. Provide a list of all unique genres available in the catalog.
 2. Determine how many unique authors are represented in the database.
-

E. Aggregate Calculations

1. Calculate the total number of books in the inventory.
 2. Determine the average book price.
 3. Find the highest and lowest page counts among all books.
 4. Calculate the average customer rating for all rated books.
 5. Compute the total value of the current stock, based on price and quantity available.
-

F. Categorising with CASE

1. Categorize books into price bands such as "Budget", "Standard", or "Premium" based on pricing rules.
 2. Classify books as "Out of Stock", "Low Stock", or "In Stock" based on available quantity.
 3. Group books into "Classic", "Old", "Recent", or "New" categories depending on publication year.
-

G. Applying Built-in Functions

1. For a set of books, display the title, the author in uppercase, the title length, the first three characters of the ISBN, and a combined label containing the author and title.

2. Show the rounded, ceiling, and floor values of book prices along with the year the book was added to the catalog.
 3. Replace missing ratings with zero and missing publisher names with "Unknown" for display purposes.
-

H. Combining Results with UNION

1. Merge the list of all books in the two selected genres without duplicates.
 2. Merge the list of all books in the two selected genres while retaining duplicates.
 3. Combine books that are priced very low with books that have very high stock levels.
 4. Merge recent publications with books that have exceptionally high customer ratings.
 5. Merge lists of very low-priced and very high-priced books, then show the most expensive results from the combined list.
-

I. Mixed Practical Queries

1. List the top five longest books written in English.
2. Find books with particularly long titles, based on character count.
3. Identify books where the ISBN ends with a specific digit.
4. Retrieve books added to the catalog in the most recent two years.
5. Apply a discount to all Romance genre books and show the adjusted price.