

INTRODUCTION

This project harnessed MySQL's analytical power and SQL techniques (like joins), along with critical thinking, to uncover valuable insights for tackling business challenges within an online bookstore's stock and sales data. The main focus of the analysis was to understand how sales performed based on category, the revenue generated, what customers preferred, and when orders were placed.

KEY FEATURES:

- 1. TIME BASED ORDER ANALYSIS.
- 2. ORDERS MANAGEMENT.
- 3. REVENUE ANALYSIS.
- 4. MOST POPULAR BOOKS BASED ON PRICE, ORDER.

PROJECT GOALS

- 1. Understand Customer Preferences: Pinpoint popular book genres, preferred formats (e.g., hardcover, paperback, ebook), and peak browsing/purchase times to better align our offerings with customer interests.
- 2. Optimize Sales Strategies: Provide data-backed suggestions to improve sales during slower periods and increase the sales of popular and high-earning titles and genres.
- 3. Improve Operational Efficiency: Gain insights into order patterns to optimize our warehouse operations, inventory levels, and potentially even content acquisition planning.
- 4. Drive Revenue Growth: Identify opportunities to increase overall revenue through targeted recommendations, adjustments to our book selection and pricing, and improvements to the overall customer experience.

DATA DESCRIPTION

This document outlines the schema for the tables used in a Book Sales ordering system database. The database includes 3 csv format datasheets- Customers, Orders, Books.

1://CUSTOMERS:

- This table stores information about each customer data.
- . Columns:
 - Customer_id (INT, PRIMARY KEY): A unique identifier assigned to each individual customer within the database. This serves as the primary key for this table.
 - Name (VARCHAR): each customer name has been recorded here.
 - Email and Phone: Each customer email id and Phone no has been noted here which is unique.
 - City (VARCHAR): this explain customers are from which city.
 - Country (VARCHAR): customers belong to which country, that has been noted.

2. ORDERS:

- This table stores header-level information for each customer order placed. Each row represents a single, complete order.
- . Columns:
 - Order_id (INT, PRIMARY KEY): A unique identifier assigned to each customer order. This serves as the primary key for this table.
 - Order_Date (DATE): The date on which the order was placed.
 - Customer_id (INT, FOREIGN KEY): this serves as a foreign key to the table referencing customers table.
 - Book_id(INT, FOREIGN KEY): this serves as a foreign key to the table referencing books table.
 - Quantity (INT): the quantity of orders from each customers.
 - . Total amount (INT): the total amount by sales is written here.

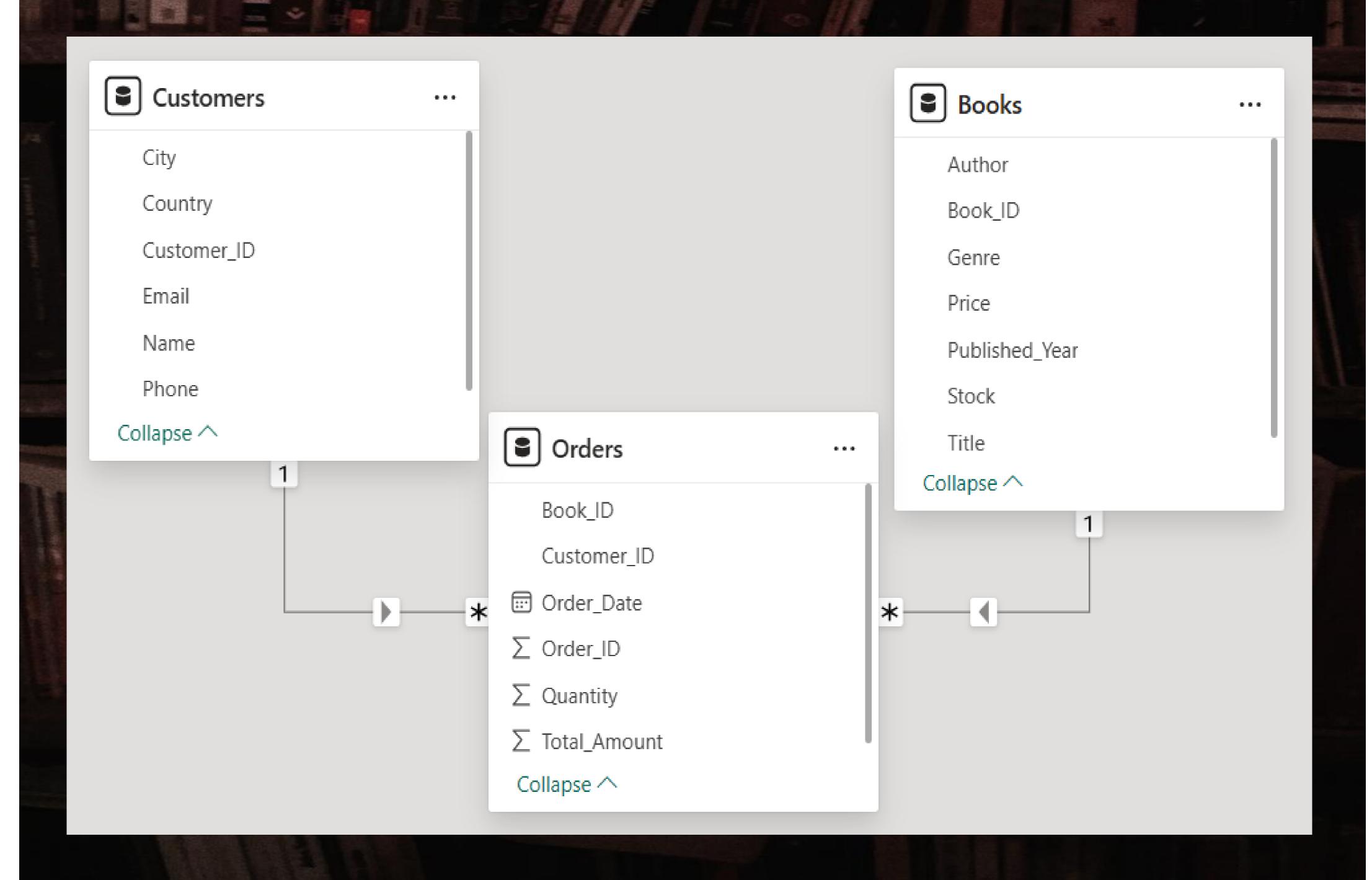
3. BOOKS:

- . This table stores header-level information for each books stock
- . Columns:
- Book_id(INT, PRIMARY KEY): A unique identifier for each book.
- Author name (VARCHAR): All author names have been mentioned here.
- . Genre (VARCHAR): Each author's genre has been mentioned here.
- Published year (DATE): The year on which book was written.
- Price (INT): the price of each book from each authors.
- . Stock (INT): the book stocks for individual authors is here.

DATA SCHEMA

A relational database with 3 tables managing book orders, order types, genres.

Relationships: Customer_id, Book_id are primary keys of one table and foreign keys of ORDERS table. Foreign keys ensure data links and integrity. Data schema is prepared in data model view of Power BI



KEY PERFORMANCE INDICATORS

☐ Fiction Sales Percentage: Track the proportion of total revenue generated by fiction books.
□ November Sales Growth: Measure the percentage increase in revenue during November compared to the previous month or year.
☐ Canadian Customer Revenue Contribution: Monitor the percentage of total revenue originating from Canadian customers.
☐ Loyalty Program Enrollment Rate: Track the number of customers signing up for the loyalty program.
Repeat Customer Rate: Measure the percentage of customers who have placed more than one order.
Stockout Rate (Bestsellers): Monitor how frequently best-selling books are out of stock.
☐ Top Author/Book Sales Contribution: Track the percentage of total revenue generated by the top-performing authors and individual book titles.
Overall Revenue Growth: Measure the percentage increase in total revenue over specific periods.
☐ Customer Acquisition Cost (Canada): Analyze the cost of acquiring new customers in the Canadian market.
☐ Average Order Value (Loyal Customers): Track the average amount spent per order by loyalty program members or repeat customers.
Inventory Turnover Rate (Bestsellers): Measure how quickly best-selling books are sold and replaced.

DATA ANALYSIS

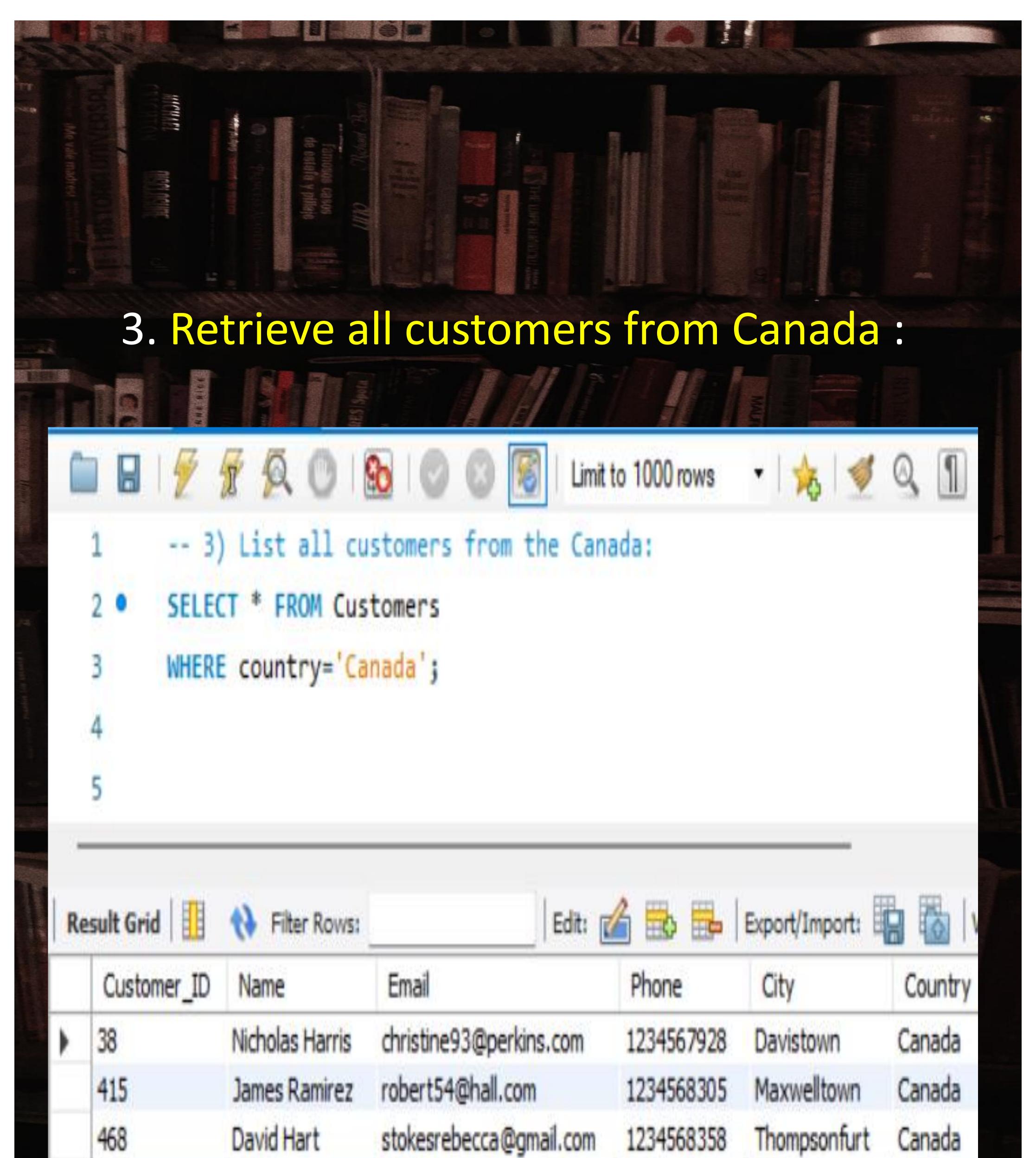
1. Retrieve all books in the fiction genre:

Res	Result Grid 🔢 🛟 Filter Rows: Edit: 🕍 🖶 Export/Import: 🖫 🐷 Wrap Cell Content: 🔣							
	Book_ID	Title	Author	Genre	Published_Year	Price	Stock	
	327	Implemented zero-defect product	Kim Lee	Fiction	1984	21.40	29	
	329	Multi-tiered dedicated encryption	Jacob Fischer	Fiction	1973	38.49	27	
	331	Profit-focused systematic project	Dennis Hooper	Fiction	1936	15.36	89	
	342	Digitized regional monitoring	Kenneth Finley	Fiction	1969	17.11	84	
	362	Profit-focused multimedia throughput	Andrea Lucas	Fiction	1933	29.43	64	
	366	Re-contextualized national secured line	Robert Wilson	Fiction	1922	13.10	4	
	367	Universal analyzing support	Eric Taylor	Fiction	1940	29.32	35	
	372	Realigned mobile focus group	Michael Jackson	Fiction	1905	17.73	42	
	373	Exclusive dynamic approach	Michelle Mercado	Fiction	1911	39.09	49	
	403	Persevering incremental strategy	David Miller	Fiction	1928	15.01	82	
	406	De-engineered methodical capacity	James Gonzalez	Fiction	2006	35.79	50	
	408	Decentralized tertiary customer lovalty	William Roberts	Fiction	1946	10.07	2	

2. Retrieve all books published after 1950:

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 - 1 -- Find books published after the year 1950:
 - 2 SELECT * FROM Books
- 3 WHERE Published_year>1950;
- 5

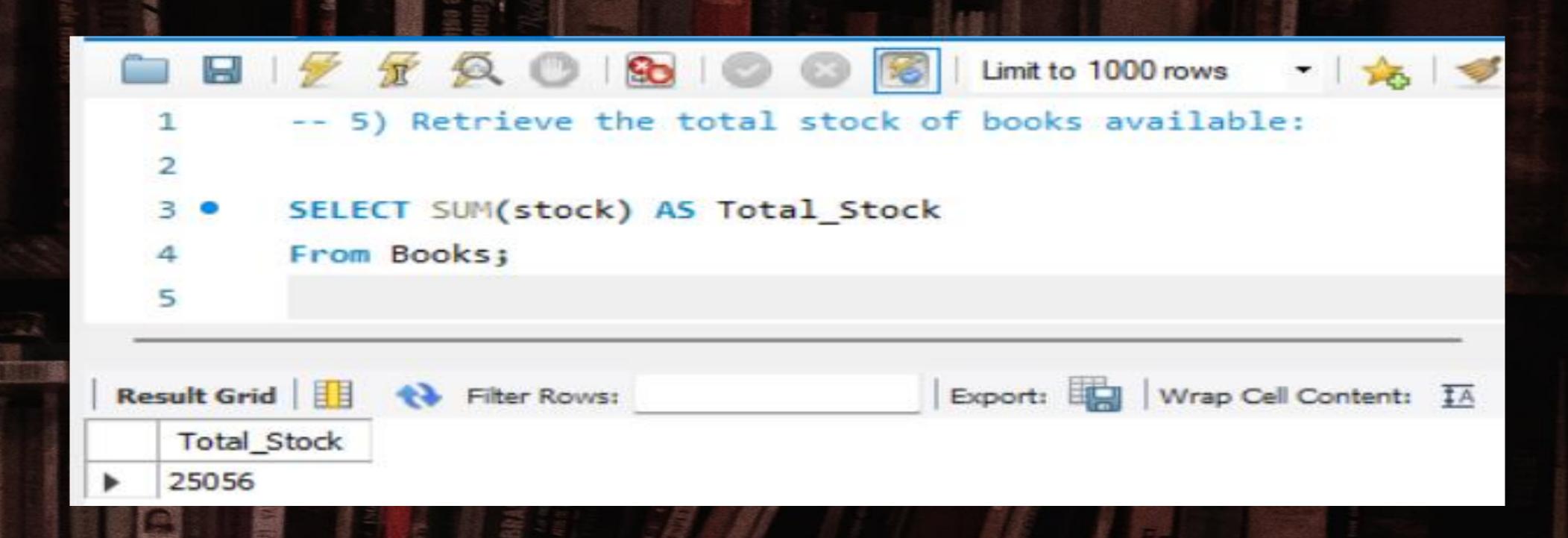
Book_ID	Title	Author	Genre	Published_Year	Price	Stock
2	Persevering reciprocal knowledge user	Mario Moore	Fantasy	1971	35.80	19
4	Customizable 24hour product	Christopher Andrews	Fiction	2020	43.52	8
5	Adaptive 5thgeneration encoding	Juan Miller	Fantasy	1956	10.95	16
6	Advanced encompassing implementation	Bryan Morgan	Biography	1985	6.56	2
8	Persistent local encoding	Troy Cox	Science Fiction	2019	48.99	84
9	Optimized interactive challenge	Colin Buckley	Fantasy	1987	14.33	70
10	Ergonomic national hub	Samantha Ruiz	Mystery	2015	24.63	25
11	Secured zero tolerance time-frame	Denise Barnes	Fantasy	1998	35.95	10
12	Polarized optimal array	Destiny Scott	Non-Fiction	1989	27.43	63
15	User-friendly motivating strategy	Keith Smith	Non-Fiction	1997	23.83	58
17	Reduced secondary core	Benjamin Peters	Fantasy	1966	5.37	45
18	Adaptive 4thgeneration concept	Hector Palmer	Non-Fiction	2021	39.47	32
19	Progressive asymmetric Internet solution	Sean Miller	Science Fiction	1990	11.31	1
20	Face-to-face systematic throughput	Teresa Brennan	Non-Fiction	1978	48.13	64
23	Reverse-engineered context-sensitive	Christina Hernandez	Mystery	1967	38.55	70
25	Devolved mobile conglomeration	Alexander Bailey	Biography	1984	8.55	79
26	Multi-channeled multi-tasking capability	Patricia Buck	Science Fiction	1964	21.05	41
30	Multi-layered global open system	Jose Meyer	Biography	2012	30.58	37
31	Implemented encompassing conglomera	Melissa Taylor	Fiction	2010	21.23	44



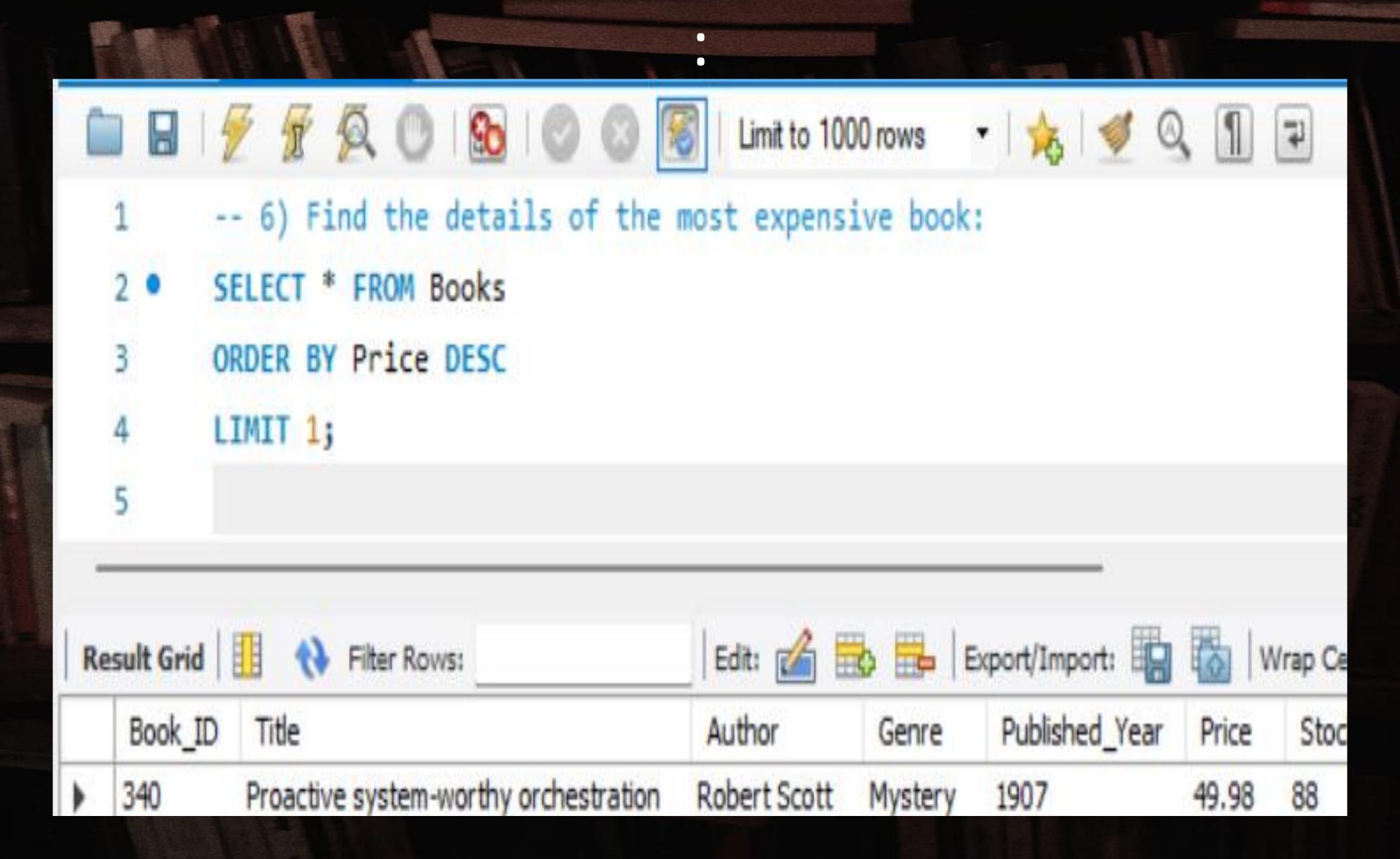
4. Retrieve all orders placed in November 2023 :

```
Limit to 1000 rows
              4) Show orders placed in November 2023:
          SELECT * FROM Orders
          WHERE order_date BETWEEN '2023-11-01' AND '2023-11-30';
Result Grid
   Order_ID
                            Book_ID
                                      Order_Date
                                                    Quantity
                                                              Total_Amount
              Customer_ID
   4
              433
                            343
                                      2023-11-25
                                                              301.21
              496
                            60
                                      2023-11-17
                                                   9
                                                              316.26
   19
   75
                                                   5
              291
                            375
                                      2023-11-30
                                                              170.75
                                                   7
   132
              469
                            333
                                      2023-11-22
                                                              194.32
                                                   8
   137
              474
                            471
                                      2023-11-25
                                                              363.04
                                                   3
   163
              207
                            384
                                      2023-11-23
                                                              101.76
                                                   7
   182
              129
                            293
                                      2023-11-01
                                                              125.51
   200
              313
                            303
                                      2023-11-23
                                                   1
                                                              6.57
                                                   7
   213
              325
                            447
                                      2023-11-17
                                                              253.75
   231
                                                   1
                                                              33.92
              22
                            384
                                      2023-11-11
                                                   9
   245
              386
                            97
                                      2023-11-01
                                                              411.66
   252
              405
                            387
                                                   5
                                                              237.10
                                      2023-11-15
                                                   1
   257
              123
                            403
                                      2023-11-06
                                                              15.01
   288
              6
                                                   1
                            128
                                      2023-11-13
                                                              24.04
   307
              368
                            133
                                      2023-11-17
                                                   1
                                                              20.96
   322
              270
                            112
                                      2023-11-08
                                                   2
                                                              16.04
                                                   5
   344
              385
                            218
                                      2023-11-25
                                                              26.80
   389
              485
                            391
                                      2023-11-18
                                                   2
                                                              66.84
                                                   1
   414
              23
                            234
                                      2023-11-10
                                                              7.15
              449
                            146
                                      2023-11-01
                                                   7
   429
                                                              101.50
   432
              420
                            168
                                      2023-11-04
                                                   3
                                                              42.39
   449
              490
                            222
                                      2023-11-18
                                                   1
                                                              29.59
```

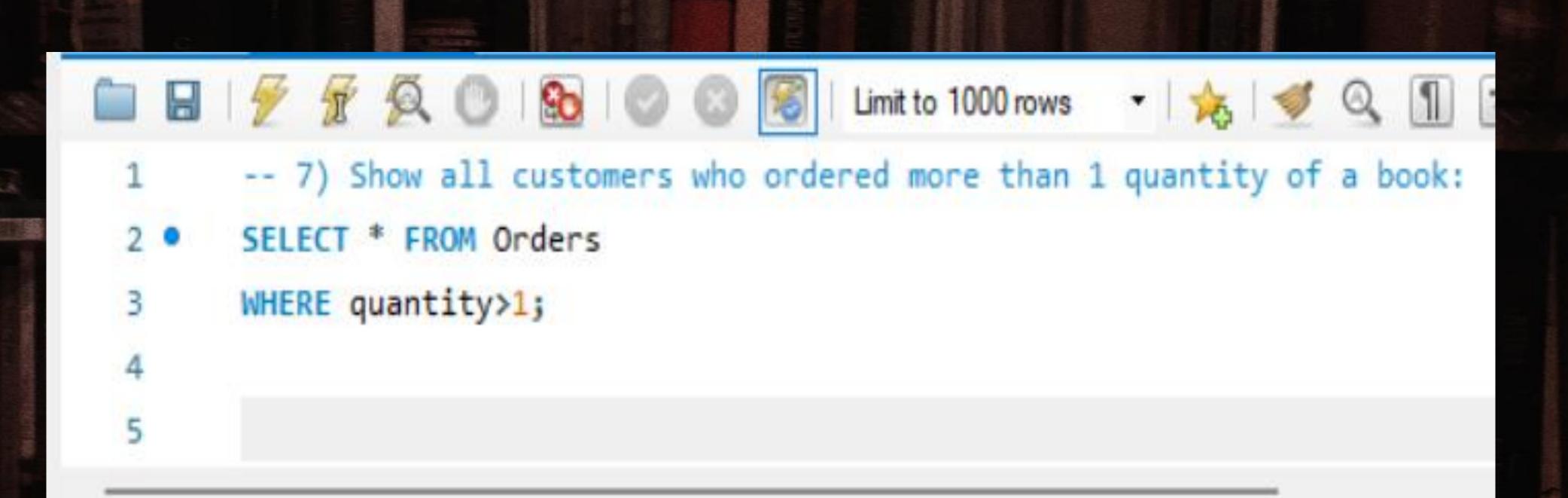
5. Retrieve total stock of books available:



6. Retrieve the details of most expensive book

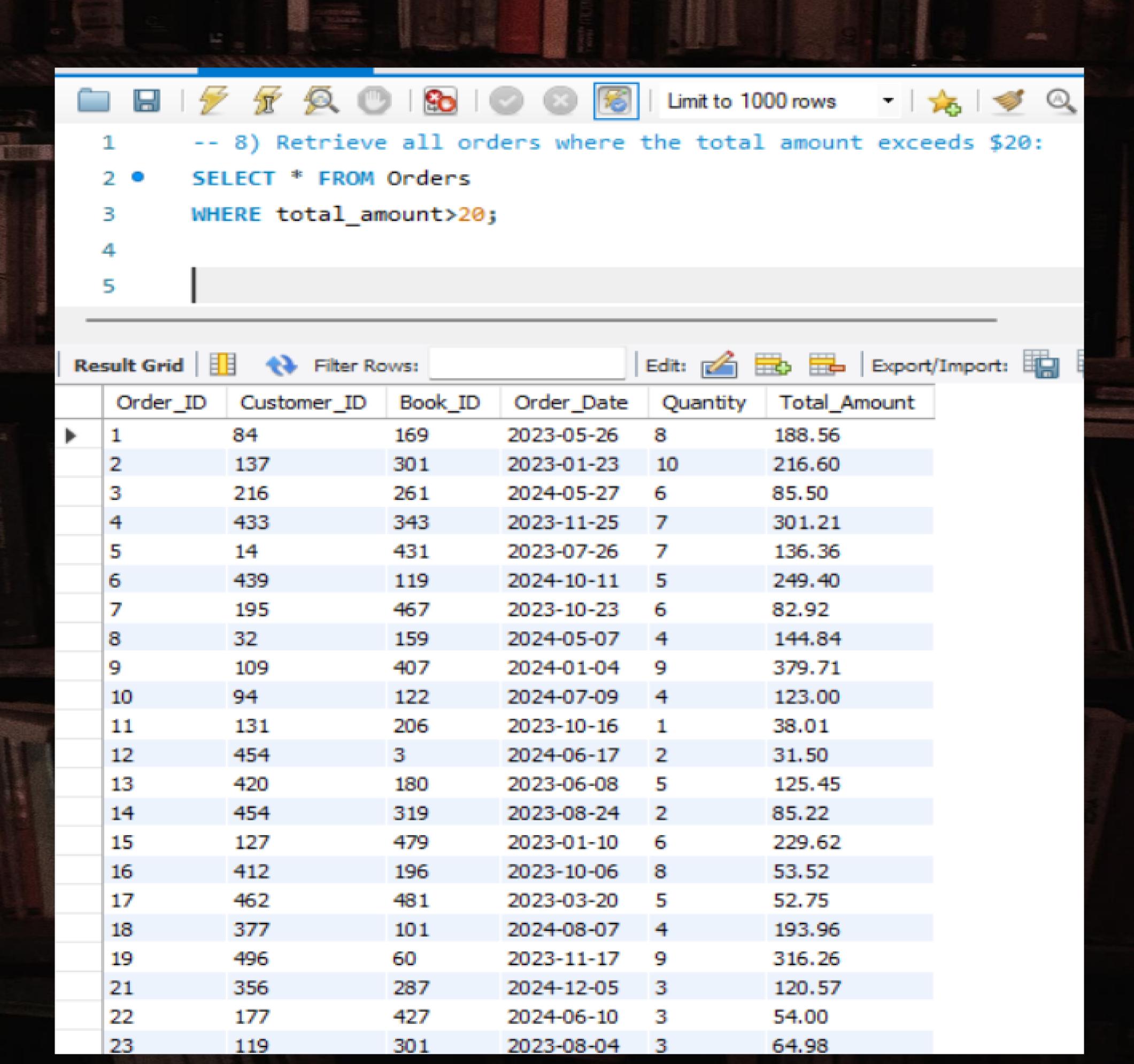


7. Retrieve all customers who ordered more than 1 quantity of a book:

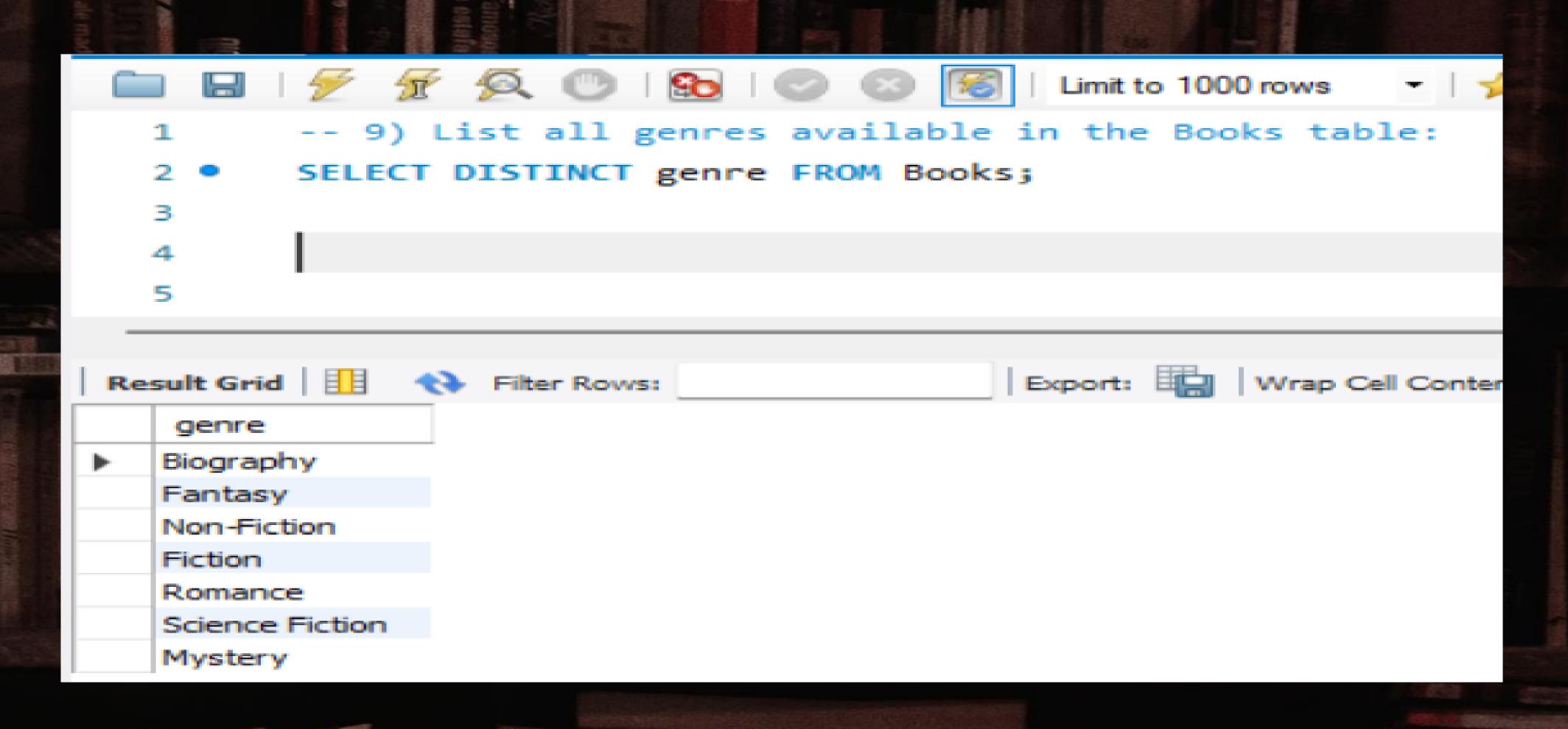


Order_ID	Customer_ID	Book_ID	Order_Date	Quantity	Total_Amount
1	84	169	2023-05-26	8	188.56
2	137	301	2023-01-23	10	216.60
3	216	261	2024-05-27	6	85.50
4	433	343	2023-11-25	7	301.21
5	14	431	2023-07-26	7	136.36
6	439	119	2024-10-11	5	249.40
7	195	467	2023-10-23	6	82.92
8	32	159	2024-05-07	4	144.84
9	109	407	2024-01-04	9	379.71
10	94	122	2024-07-09	4	123.00
12	454	3	2024-06-17	2	31.50
13	420	180	2023-06-08	5	125.45
14	454	319	2023-08-24	2	85.22
15	127	479	2023-01-10	6	229.62
16	412	196	2023-10-06	8	53.52
17	462	481	2023-03-20	5	52.75

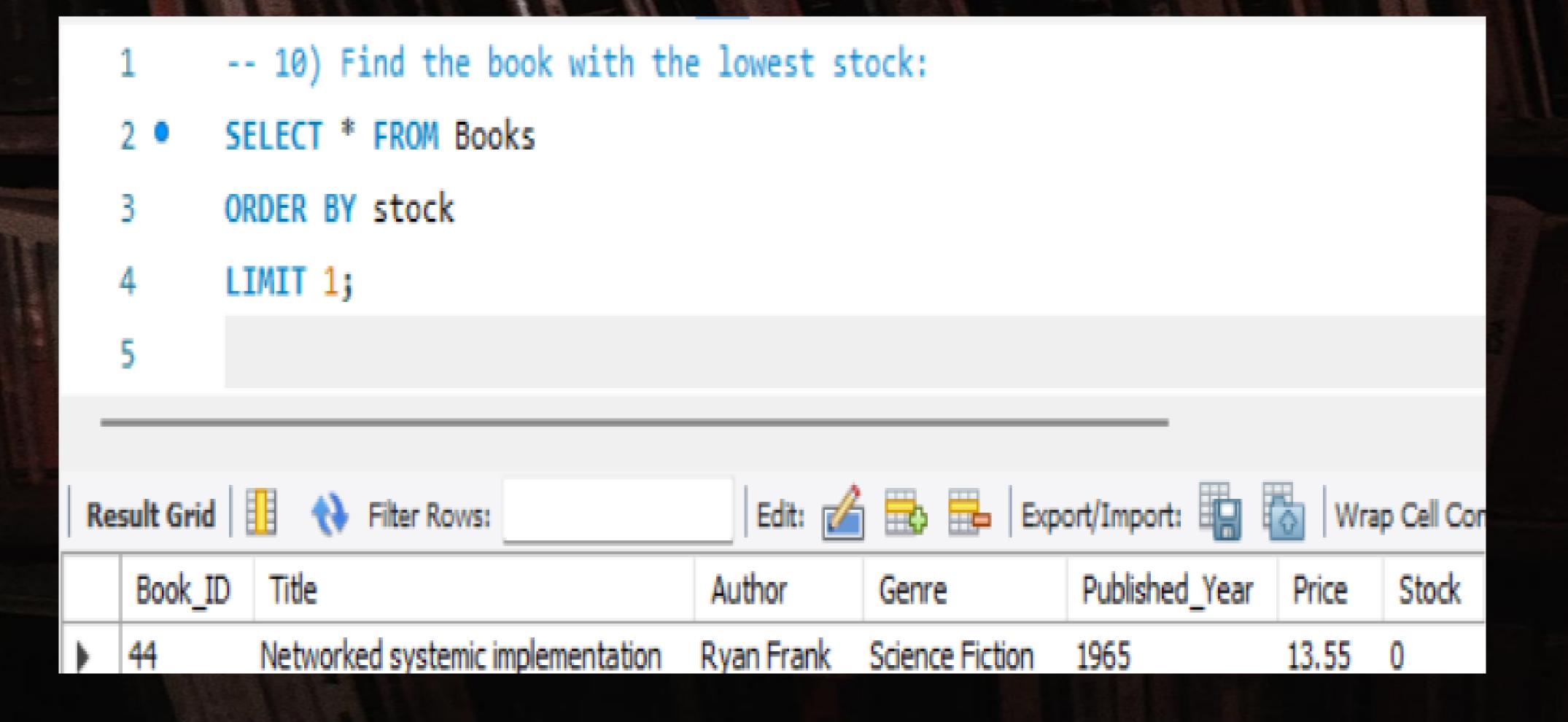
8. Retrieve all orders where the total amount exceeds \$20:



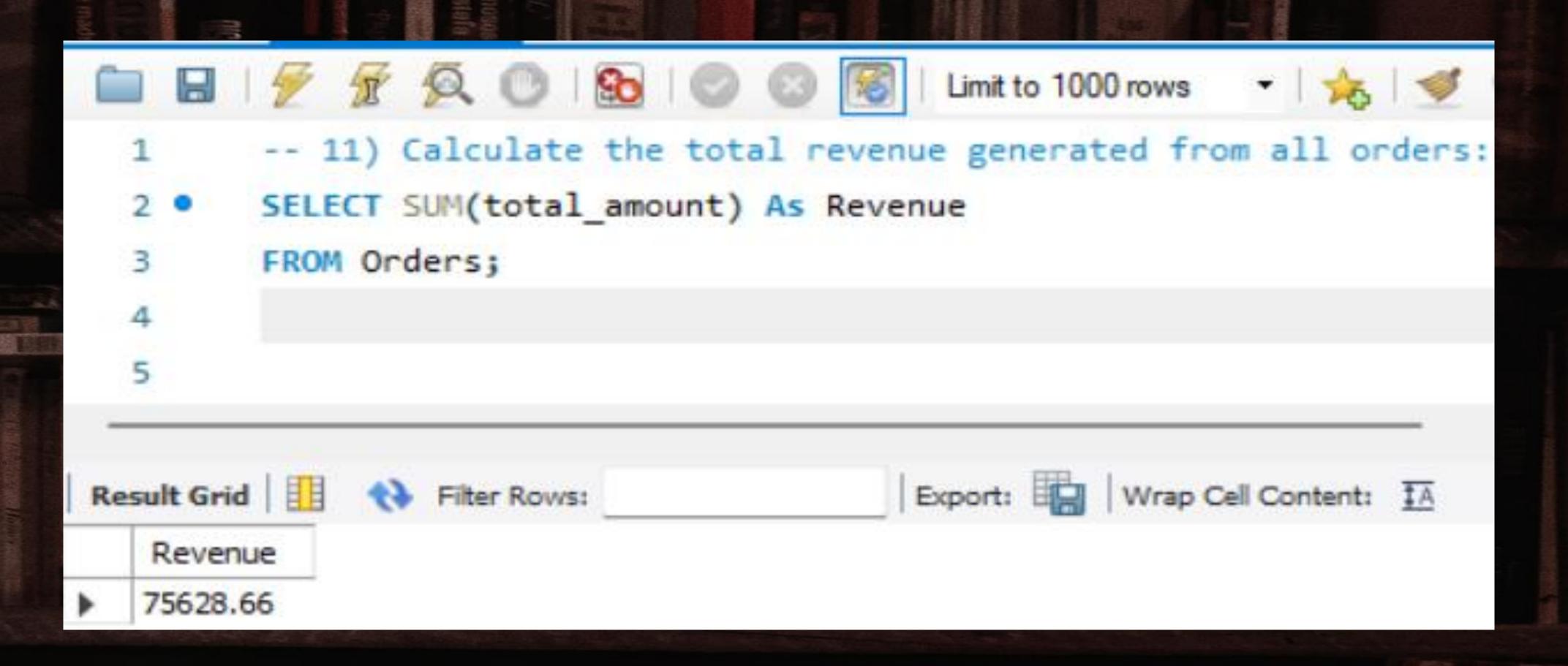
9. List all genre available in books table:



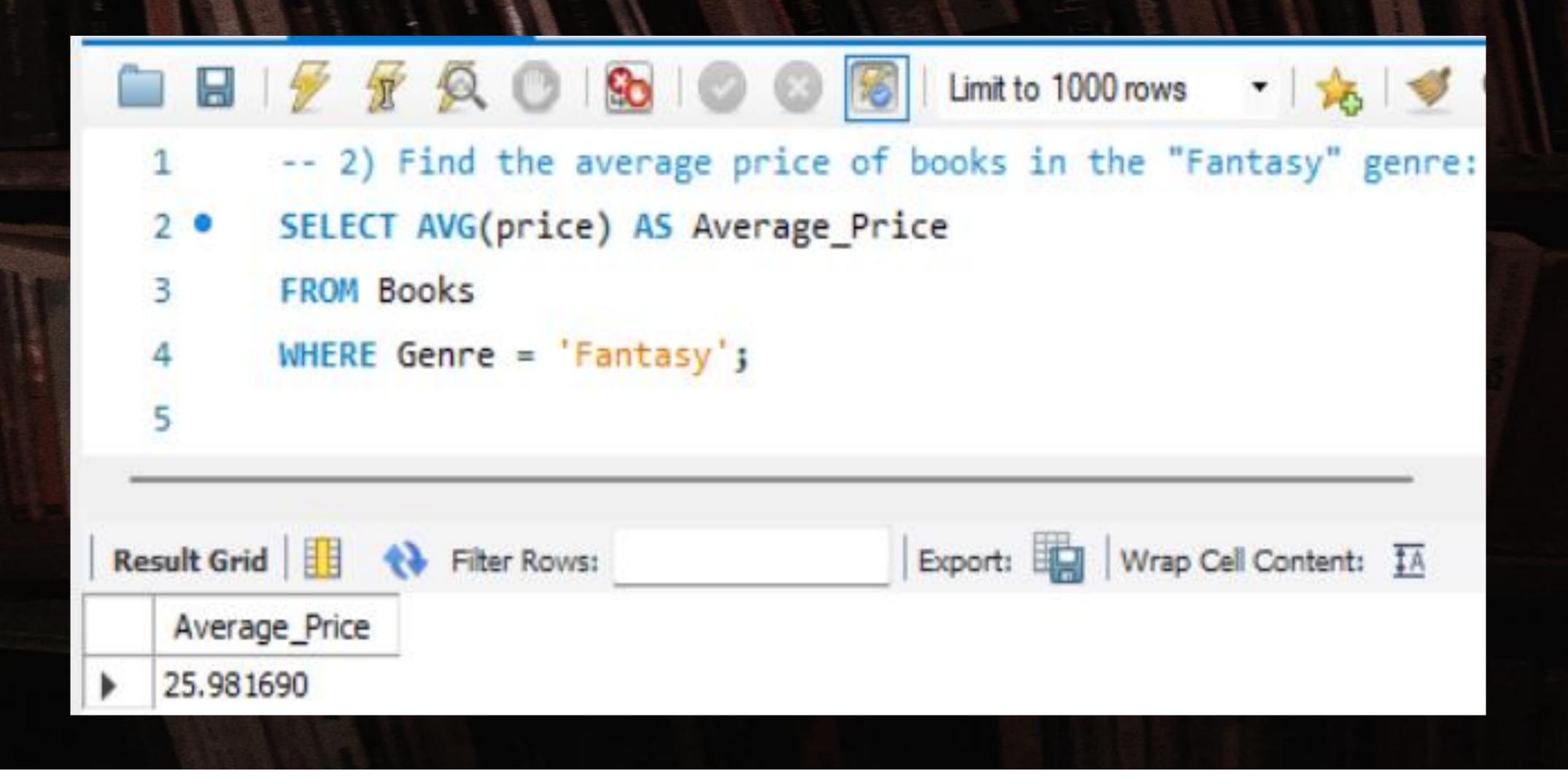
10. Find the book with lowest stock:



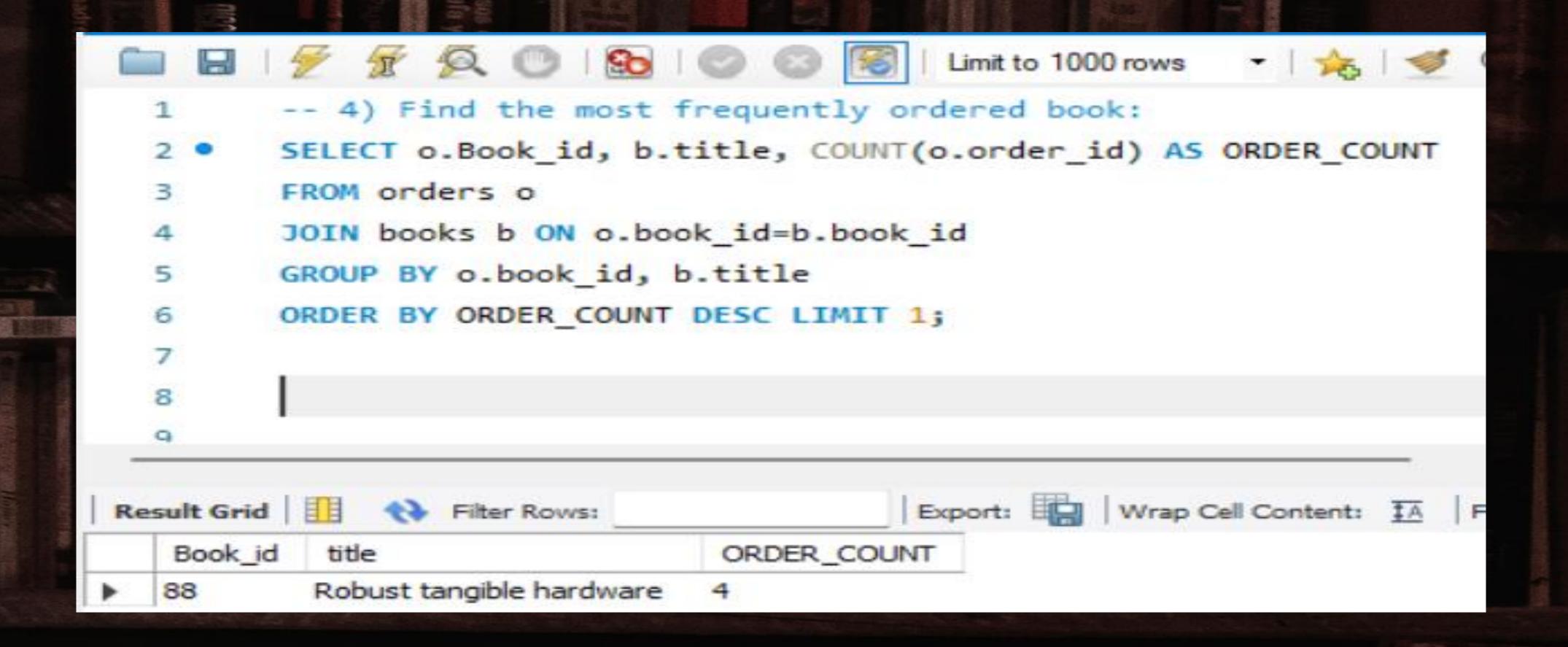
11. Total revenue generated from all orders:



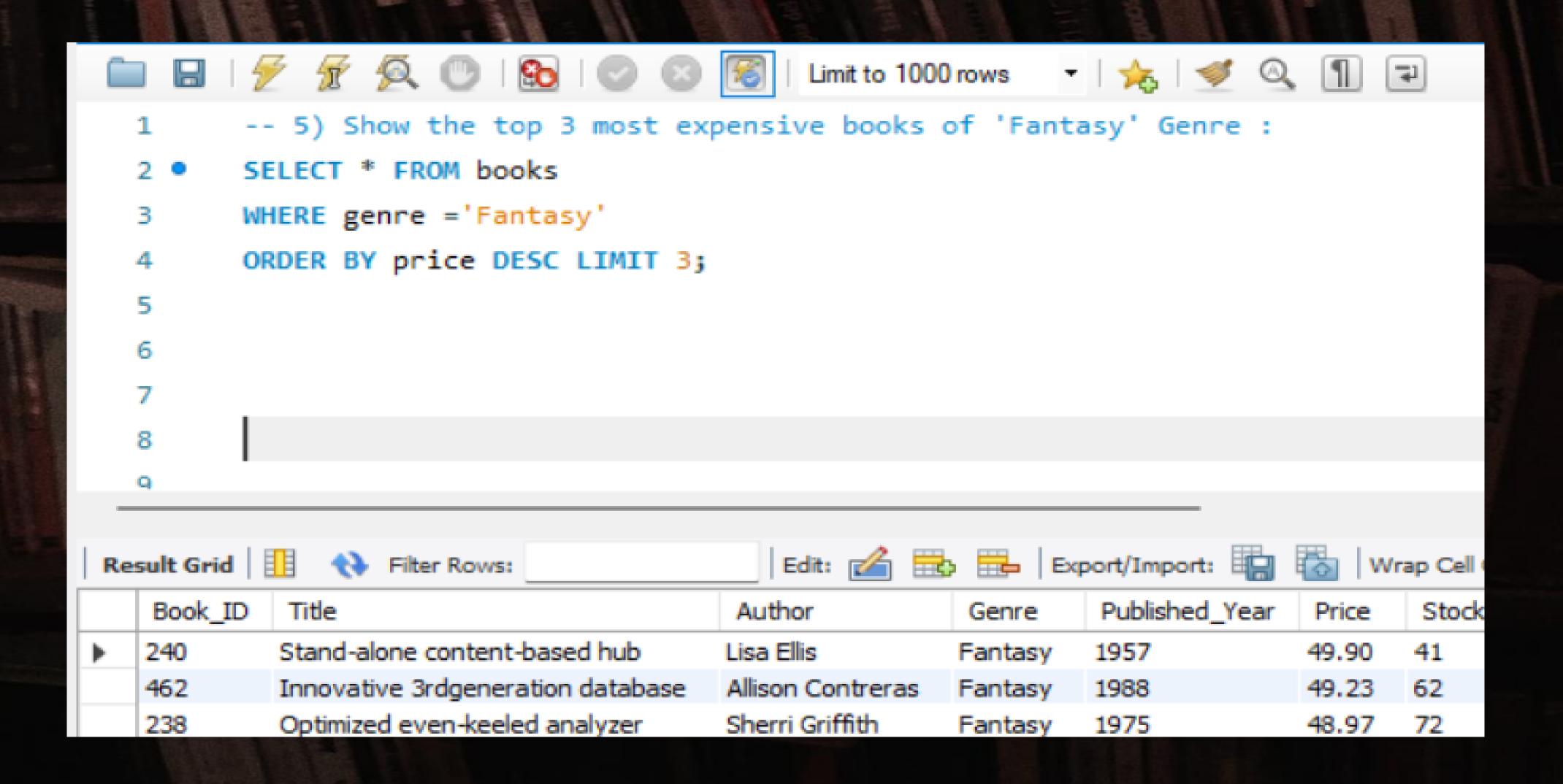
12. Avg price of books in Fantasy genre:



13. Find the most frequently ordered book:



14. Top 3 expensive books of Fantasy genre:



15. Calculate the stock remaining after fulfilling all orders:

```
Limit to 1000 rows

| Image: Second Content of the stock of the stock
```

Result Grid			Export: Wrap Cell Content: TA			
	book_id	title	stock	Order_quantity	Remaining_Quantity	
	4	Customizable 24hour product	8	0	8	
	5	Adaptive 5thgeneration encoding	16	8	8	
	6	Advanced encompassing implementation	2	0	2	
	7	Open-architected exuding structure	95	5	90	
	8	Persistent local encoding	84	3	81	
	9	Optimized interactive challenge	70	0	70	
	10	Ergonomic national hub	25	1	24	
	11	Secured zero tolerance time-frame	10	5	5	
	12	Polarized optimal array	63	0	63	
	13	Adaptive 5thgeneration orchestration	99	9	90	
	14	Re-engineered demand-driven parallelism	95	0	95	
	15	User-friendly motivating strategy	58	0	58	

16. List the cities where customers who spent over \$30 are located:

```
limit to 1000 rows ▼ 🏡
       -- 7) List the cities where customers who spent over $30 are located:
       SELECT DISTINCT c.city, total_amount
       FROM orders o
       JOIN customers c ON o.customer id=c.customer id
       WHERE o.total_amount > 30;
  8
Wrap Cell Content: ‡A
```

	city	total_amount
•	Lake Paul	188.56
	North Keith	216.60
	Kelseyfort	85.50
	East David	301.21
	Richardsonville	136.36
	Ramosstad	249.40
	Rogersborough	82.92
	New Carlosbury	144.84
	Ravenberg	379.71
	West Anthony	123.00

17. Retrieve the total quantity of books sold by each author:

Export: Wrap Cell Content: \$\frac{\frac{1}{4}}{4}\$

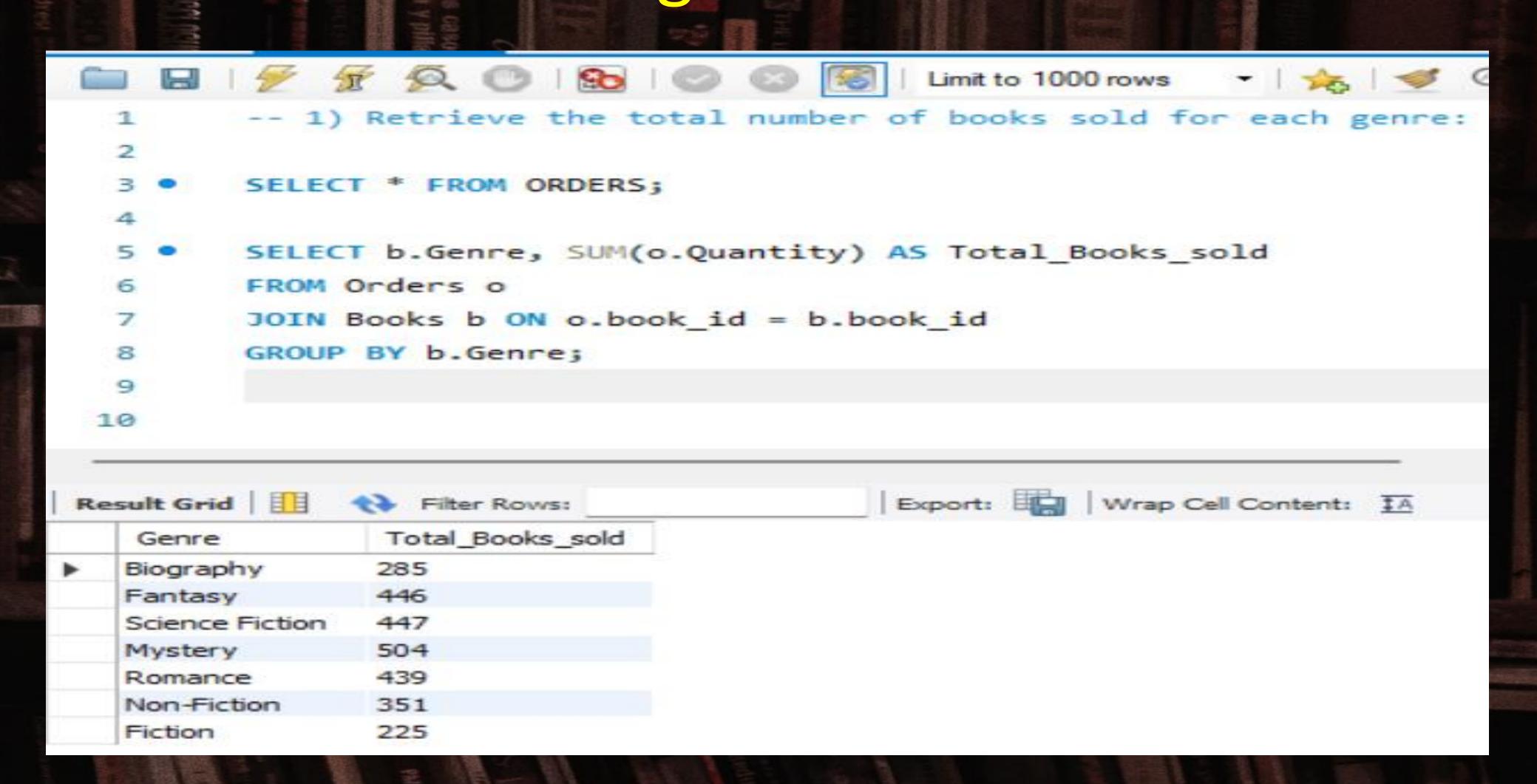
	author	Total_Books_Sold
•	Margaret Moore	8
	John Davidson	13
	Christopher Fuentes	6
	Marissa Smith	16
	Christopher Dixon	15
	Tonya Saunders	21
	Larry Hunt	6
	Brandon Foster	4
	Michelle Bell	11
	Mary French	14

18. List of customers who have placed at least 2 orders:

```
1    -- 3) List customers who have placed at least 2 orders:
2    SELECT o.customer_id, c.name, COUNT(o.Order_id) AS ORDER_COUNT
3    FROM orders o
4    JOIN customers c ON o.customer_id=c.customer_id
5    GROUP BY o.customer_id, c.name
6    HAVING COUNT(Order_id) >=2;
7
8
```

Result Grid				Export:	Wrap Cell Content:	<u>‡A</u>
	customer_id	name	ORDER_COUNT			
١	84	Gary Blair	2			
	137	Steven Miller	2			
	216	Phillip Allen	2			
	14	John Wood	2			
	195	Dominique Turner	3			
	109	Jacob Kelley	2			
	94	Mr. David Cox	3			
	131	Peter Smith	2			
	454	April Anderson	2			
	420	Andrew Murray	3			
	462	James Brewer	3			
	377	Darrell Khan	2			
	177	Sarah Powell	2			

19. Retrieve total no. of books sold for each genre:



20. Find the customer who spent the most on orders:

```
Limit to 1000 rows
         -- 8) Find the customer who spent the most on orders:
         SELECT c.customer_id, c.name, SUM(o.total_amount) AS Total_Spent
         FROM orders o
         JOIN customers c ON o.customer_id=c.customer_id
         GROUP BY c.customer_id, c.name
         ORDER BY Total spent Desc LIMIT 1;
Result Grid
                                                        Wrap Cell Content: IA
                                                                            Fetch row
                  Filter Rows:
   customer_id
                          Total_Spent
               name
  457
              Kim Turner
                         1398.90
```

KEY INSIGHTS

- Fiction is the most popular genre.
- November 2023 saw a peak in sales.
- Canada represents a significant customer base.
- High-value and bulk orders suggest opportunities for loyalty programs.
- Identifying low-stock and best-selling books can improve inventory management.
- Certain authors and books perform exceptionally well.
- Analyzing financial data supports strategic decisions.
- Total books sold per genre and the most frequently ordered book were identified.
- Loyal customers (multiple orders) and top spenders were identified.
- Cities with the highest-spending customers were revealed.
- The most expensive book, lowest-stock book, and top 3 priciest Fantasy books were found.

RECOMMANDATIONS

- ✓ Focus on Fiction: Increase inventory and promotional efforts for fiction titles.
- ✓ Capitalize on November: Plan marketing campaigns and promotions for the November sales spike.
- ✓ Target Canadian Market: Explore localized marketing strategies for customers in Canada.
- Implement Loyalty Programs: Reward repeat customers and high-value purchases.
- Optimize Inventory: Prioritize restocking best-selling and lowstock items.
- ✓ Highlight Top Performers: Feature popular authors and books in promotions and displays.
- ✓ Leverage Financial Data: Use revenue and profitability analysis for strategic planning.
- ✓ Genre-Specific Promotions: Tailor promotions based on genre popularity.
- Engage Loyal Customers: Offer exclusive deals or early access to frequent buyers.
- ✓ Location-Based Marketing: Consider targeted campaigns for high-spending cities.
- ✓ Monitor Book Performance: Regularly track sales and stock levels of individual titles.

CONCLUSION

These data-driven insights, derived through rigorous SQL analysis provide a solid foundation for informed decision-making and strategic initiatives aimed at enhancing Online books sales performance. By analyzing key metrics and relationships between orders, Genre, order details, price, and quantity purchased the project seeks to optimize sales strategies, improve operational efficiency, and enhance understanding of customer preferences within the online books selling business.

THANK YOU

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