SQL ASSIGNMENT 3 SUMMARY

Assignment Overview

This assignment involves analyzing customer,book and order data using SQL to gain insights about customer behaviours,book sale trends and orders trends.It includes three core tables :

- Customers table- select * from luxdevteaching .customers ;
    - Includes customer_id , first_name , last_name, email , phone_number
- Books table - select * from luxdevteaching.boooks;
    - Includes book_id , title ,author , price, published_date
- Orders table - select * from luxdevteaching.orders;
    - Includes order_id , customer_id , book_id , quantities , order_date

Queries analysis

1.List all customers with their full name and city.

- Used concat to combine first and last name together into a single column

2.Show all books priced above 2000.

- Used where to filter rows based on price
- Used greater than to select rows where column value is greater than the given value

3. List customers who live in 'Nairobi'.

- Used where to apply city based filtering

4. Retrieve all book titles that were published in 2023.

- Used extract (year from) to isolate the year part from the date column

5. Show all orders placed after March 1st, 2025.

- Used where to filter orders based by date
- Used greater than to select dates above the given value

6. List all books ordered, sorted by price (descending).

- Used distinct to remove duplicates
- Used order by desc to arrange the rows by price

7. Show all customers whose names start with 'J'.

- Used like to search for pattern in first_name column

8. List books with prices between 1500 and 3000

- Used between to set a range condition for filtering

9. Count the number of customers in each city.
- Used count to aggregate customer entries
- Used group by to categorize by city

10. Show the total number of orders per customer.
- Used count to aggregate orders
- Used group by to organize by customer id

11. Find the average price of books in the store.
- Used average to calculate the mean of the price column

12. List the book title and total quantity ordered for each book.
- Used sum to add the quantities
- Used group by to organize by title

13. Show customers who have placed more orders than customer with ID = 1.
- Used subquery to calculate total orders

14. List books that are more expensive than the average book price.
- Used subquery to calculate the average price

15. Show each customer and the number of orders they placed using a subquery in SELECT.
- Used subquery to calculate the order count for each customer

16. Show full name of each customer and the titles of books they ordered.
- Used inner join to link customers and books via orders

17. List all orders including book title, quantity, and total cost (price × quantity).
- Used inner join for cost calculation

18. Show customers who haven't placed any orders (LEFT JOIN).
- Use left join to include unmatched customers
- Used null to checks if a value is null

19. List all books and the names of customers who ordered them, if any (LEFT JOIN).
- Used left join to ensure all books are listed even without orders

20. Show customers who live in the same city (SELF JOIN).

- Used self join to match customers based on city

21. Show all customers who placed more than 2 orders for books priced over 2000.
    - Used greater than to select rows where column value is greater than the given value
    - Used having after grouping

22. List customers who ordered the same book more than once.
    - Used group by to organize orders
    - Used having to filter repeated orders

23. Show each customer's full name, total quantity of books ordered, and total amount spent.
    - Used sum to calculate totals
    - Used group by to organize by customer

24. List books that have never been ordered.
    - Used left join for unmatched rows
    - Used where to filter null orders

25. Find the customer who has spent the most in total (JOIN + GROUP BY + ORDER BY + LIMIT).
    - Used sum to calculate spending
    - Used order by to rank the totals
    - Used limit to show one record

26. Write a query that shows, for each book, the number of different customers who have ordered it.
    - Used count(distinct) to count unique customers

27. Using a subquery, list books whose total order quantity is above the average order quantity.
    - Used subquery to calculate average order of quantities for comparison

28. Show the top 3 customers with the highest number of orders and the total amount they spent.
    - Used limit to show three records
    - Used order by to rank the total orders
    - Used concat to combine first and last name together into a single column
    - Used sum to calculate totals

This is a simplified structure used to show key insights while being easier to understand.