



SQL Practice Roadmap (Based on Your Schema)

♦ Phase 1: Basics (SELECT, WHERE, ORDER BY, LIMIT, DISTINCT)

Goal: Get comfortable pulling and filtering data.



Problem Set – Basics

1. **Get All Customers**
→ List all columns of all customers from India.
2. **Recently Registered Customers**
→ Show top 5 most recently registered customers.
3. **Unique Countries**
→ List all unique countries from the `customers` table.
4. **High Order Amounts**
→ Fetch all orders where `total_amount > 5000`.
5. **Products by Category**
→ List all orders in the “Electronics” product category.

♦ Phase 2: Aggregations & Grouping (COUNT, SUM, AVG, GROUP BY, HAVING)

Goal: Analyze data through grouped insights.



Problem Set – Aggregates

6. **Customer Order Count**
→ Count how many orders each customer has placed.
7. **Total Revenue per Country**
→ Show total order value (`total_amount`) for each country.
8. **Top 3 Product Categories by Revenue**
→ List the top 3 `product_category` by sum of `total_amount`.
9. **Avg. Order Value per Customer**
→ For each customer, calculate average order value.

10. High Revenue Countries Only

→ Show countries where total revenue > ₹50,000.

♦ Phase 3: Joins & Relationships (INNER, LEFT, RIGHT JOIN)

Goal: Combine data across tables.

Problem Set – Joins

11. Customer Order Details

→ List each order with customer's name, email, and city.

12. Order with Items

→ Show each order_id with corresponding product_name and quantity.

13. Customer with No Orders

→ List customers who haven't placed any orders.

14. Orders with No Items

→ List orders that don't have any items linked.

15. Top Spend by Customer

→ Show top 5 customers based on total spend (unit_price * quantity).

♦ Phase 4: Subqueries, CTEs & Window Functions

Goal: Solve problems requiring nested logic or advanced computation.

Problem Set – Intermediate

16. Most Recent Order per Customer

→ Show each customer's most recent order (using CTE or window).

17. Average Quantity Ordered per Product

→ Use subquery to calculate avg. quantity of each product.

18. Top Product per Category

→ Use `ROW_NUMBER()` or `RANK()` to get highest-selling product per category.

19. Running Total of Orders by Date

→ Compute cumulative revenue (running sum) by order date.

20. Repeat Customers

→ List customers who placed more than 1 order.

♦ Phase 5: Data Manipulation (INSERT, UPDATE, DELETE)

Goal: Learn how to alter data safely and effectively.

Problem Set – DML

21. Insert New Customer & Order

→ Add a new customer and place an order for them.

22. Update Order Status

→ Mark all orders older than 6 months as 'Archived'.

23. Delete Orphan Orders

→ Delete orders that have no matching customer.

♦ Phase 6: Advanced Scenarios (Business Logic & Case Studies)

Goal: Solve practical data analysis problems.

Problem Set – Real-world Cases

24. Sales Funnel

→ How many customers registered vs. how many actually placed orders?

25. Revenue by Month

→ Show month-wise total revenue and order count for last 12 months.

26. Customer Lifetime Value (CLTV)

→ For each customer, compute total spend and avg. order value.

27. Most Frequently Ordered Products

→ Find top 5 most commonly ordered product names.

28. Churned Customers

→ List customers who haven't ordered in the last 90 days.