100 SQL Practice Questions - From Zero to Hero

EASY (Questions 1-30) - Basic CRUD & Simple Queries

SELECT Basics

1. Retrieve all columns from the customers table.

2. Get only the first name and email of all customers.

3. List all product names and their prices.

4. Show all unique countries from the customers table.

5. Display all orders with a status of 'Delivered'.

WHERE Clause

6. Find all products with a price greater than 100.

7. Get all customers from the USA.

8. List all orders placed after February 1, 2024.

9. Find products that have more than 50 items in stock.

10. Show all employees in the Sales department.

ORDER BY & LIMIT

11. List all products ordered by price from highest to lowest.

12. Show the 5 most recently registered customers.

13. Display the top 10 most expensive products.

14. Get all customers ordered alphabetically by last name.

15. Show the 3 oldest employees based on hire date.

Basic Aggregate Functions

16. Count the total number of customers in the database.

17. Find the average price of all products.

18. Calculate the total stock quantity across all products.

19. Get the highest salary in the employees table.

20. Find the lowest product price in the inventory.

INSERT Operations

21. Insert a new customer with your own details.

22. Add a new product to the products table.

23. Insert a new category called "Beauty Products".

24. Add a new supplier from your country.

25. Create a new employee record in the IT department.

UPDATE Operations

26. Update the stock quantity of product_id 1 to 60.

27. Change the status of order_id 15 from 'Cancelled' to 'Processing'.

28. Increase all product prices by 10%.

29. Update the loyalty points of customer_id 5 to 1000.

30. Change the department of employee_id 12 to 'Sales'.

MEDIUM (Questions 31-65) - Joins, Grouping & Subqueries

Basic JOINS

31. List all orders with customer names (first and last name).

32. Show all products with their category names.

33. Display order items with product names and order dates.

34. Get all reviews with customer names and product names.

35. List all products with their supplier names.

GROUP BY & HAVING

36. Count how many customers are in each country.

37. Find the total revenue generated by each customer.

38. Calculate the average rating for each product that has reviews.

39. Show how many products are in each category.

40. Find the total quantity sold for each product.

Aggregate with WHERE

41. Find the total number of orders for each customer who has placed more than 2 orders.

42. Get categories that have more than 3 products.

43. Show countries with more than 1 customer.

44. List products with an average review rating above 4.5.

45. Find employees in departments that have more than 2 employees.

Multiple JOINS

46. Display order details including customer name, product name, and quantity for each order item.

47. Show all reviews with customer names, product names, and category names.

48. List all products with supplier name, category name, and current stock.

49. Get employee names along with their manager names.

50. Display orders with customer details and total number of items in each order.

Subqueries

51. Find all products that are more expensive than the average product price.

52. Get customers who have placed orders worth more than 1000.

53. List products that have never been ordered.

54. Find the customer with the highest total spending.

55. Show employees who earn more than the average salary in their department.

Date Functions

56. Find all orders placed in January 2024.

57. Calculate how many days ago each customer registered.

58. Get the month with the most orders.

59. Show customers who registered in the last 6 months.

60. Find employees hired in 2021.

String Functions

61. Display customer emails in uppercase.

62. Get the first 3 characters of each product name.

63. Find all customers whose first name starts with 'A'.

64. Concatenate employee first and last names with a space.

65. Find products whose names contain the word "Pro".

HARD (Questions 66-100) - Advanced Queries

Complex Aggregations

66. Find the top 3 customers by total spending with their total order count.

67. Calculate the month-over-month revenue growth.

68. Get the average order value for each payment method.

69. Find products that account for more than 10% of total revenue.

70. Calculate the running total of orders by date.

Window Functions

71. Rank products by price within each category.

72. Calculate the cumulative sum of order totals by customer.

73. Find the difference between each product's price and the average price in its category.

74. Assign row numbers to orders for each customer ordered by date.

75. Get the top 2 most expensive products in each category.

Advanced JOINS

76. Find customers who have ordered products from more than 3 different categories.

77. List suppliers whose products have an average review rating above 4.

78. Get products that have been ordered by customers from at least 3 different countries.

79. Find pairs of customers who have ordered the same product.

80. Show categories where the average product price is higher than the overall average.

Complex Subqueries & CTEs

81. Using a CTE, find the top 5 products by revenue and their total units sold.

82. Create a CTE to find loyal customers (loyalty points > 1000) and their average order value.

83. Find products that are more expensive than all products in the "Clothing" category.

84. Get customers who have spent more than the average spending of customers from their country.

85. Using nested subqueries, find the most recent order for each customer.

SET Operations

86. Find customers who have placed orders but never written a review.

87. List products that are either out of stock (quantity = 0) or have no orders.

88. Get email addresses that appear in both customers and suppliers tables.

89. Find employees whose salary is in the top 25% of all salaries.

90. Show products that belong to "Electronics" or have a price above 500.

Data Analysis Queries

91. Calculate the customer lifetime value (total spent) and rank customers accordingly.

92. Find the correlation between product price and average rating.

93. Identify seasonal trends by calculating average monthly sales.

94. Calculate the inventory turnover rate for each product (units sold / average stock).

95. Find the customer retention rate (customers who ordered in both Jan and Feb 2024).

DELETE Operations

96. Delete all reviews with a rating of 1 or 2.

97. Remove products that have never been ordered and have 0 stock.

98. Delete orders with status 'Cancelled' that are older than 30 days.

99. Remove duplicate customer records (if any) keeping the oldest registration.

100. Delete all order items for orders that have been cancelled.

Pro Tips for Practice:

- Start from question 1 and work your way up

- Write out your query before running it

- Test your queries and check if the results make sense

- Try to solve each question without looking at hints

- Once you solve it, try to find an alternative solution

- Focus on understanding WHY your query works, not just that it works