



Data Engineering Interview Questions



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Job Details

- **Position:** Data Analyst
- **Experience:** 3+ years
- **Location:** Pune
- **Work mode:** Hybrid
- **Compensation:** ₹15–22 LPA
- **Total Rounds:** 5
- **Top Required Skills:**
 1. Advanced SQL
 2. Python for Data Analysis
 3. Data Warehousing & BI
 4. Financial Data Analytics
 5. Scenario-Based Case Studies

Round 1

SQL & Database Management

1. Joins & Subqueries:
 - a. Given a transactions table, write a query to find customers who made more than 3 transactions in the last month.
 - b. How do you optimize a query that uses multiple joins and subqueries in a large database?
 - c. Write an SQL query to find the second highest salary from an employee table.
2. Window Functions & Aggregations:
 - a. Explain how ROW_NUMBER(), RANK(), and DENSE_RANK() differ, with examples.
 - b. Write a query to calculate a rolling 3-month revenue average for each product.
3. Indexing & Performance:
 - a. What are clustered vs. non-clustered indexes? How do they affect performance?
 - b. A query aggregating millions of rows is running slow. How would you optimize it?
4. Complex SQL Scenarios:
 - a. Given a stock price table, write a query to find the maximum price drop in a day.
 - b. What are common pitfalls in designing a financial transactions database schema?

Round 2

Python for Data Analysis

1. Data Processing:

- a. Given a dataset with missing values, how would you handle them in Pandas?
- b. Write a Python function to detect outliers in a financial dataset using Z-score.

2. Automation & Efficiency:

- a. How would you optimize a slow Pandas DataFrame operation?
- b. Explain how you would use NumPy + Pandas to calculate moving averages for stock prices.

3.

Round 3

BI & Data Warehousing Concepts

1. ETL & Data Pipelines:

- a. What are the different types of Slowly Changing Dimensions (SCDs)? Give real-world banking examples.
- b. Difference between Star Schema and Snowflake Schema – when to use which?

2. Data Governance & Quality:

- a. How do you ensure data quality and integrity in a financial reporting system?
- b. A customer's transaction data shows discrepancies across systems. How would you identify & fix it?

Round 4

Financial Data Analytics & Case Studies

1. Risk & Fraud Detection:

- a. How would you design a fraud detection model using transaction data?
- b. What financial KPIs do you track for risk assessment in banking?

2. Market & Customer Analysis:

- a. How would you analyze customer churn for a banking product?
- b. You have transaction data. How would you segment customers for personalized banking offers?

3. Case Studies:

- a. Deutsche Bank wants to identify high-value customers. How would you approach this analysis?
- b. You observe a sudden dip in daily transactions. How do you investigate and report findings?
- c. Design a real-time alert system for unusual trading activity. Which tools & logic would you use?

Round 5

HR & Managerial

1. Why Deutsche Bank? Why this role?
2. Tell me about a time when you handled conflicting stakeholder demands.
3. How do you ensure accuracy and accountability when handling sensitive financial data?
4. Career aspirations, salary expectations, relocation preferences.

Thank You

Best of luck with your
upcoming interviews
— you've got this!

