amazon

Data Engineering
Interview
Questions

Ankita Gulati

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Job Details

- **Position:** Data Engineer
- **Experience:** 3 Years
- **Location:** Bengaluru, Hyderabad, Pune, Chennai
- **Work mode:** Office
- **Compensation:** ₹32–₹40 LPA
- **Total Rounds:** 6
- **Top Required Skills:**
  1. SQL
  2. Data Modeling
  3. Python
  4. Big Data Tools
  5. Cloud Platforms
  6. Data Pipelines & ETL
  7. NoSQL / Columnar Databases
  8. Behavioral & Leadership:

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Round 1
SQL & Data Modeling

- Write a SQL query to fetch the top 3 highest-earning employees per department.
- SQL query to filter duplicate pairs (y,x) from a (src,dest) table. Example:
  Input: (a,b), (b,a), (c,d), (d,e)
  Output: keep only (a,b), (c,d), (d,e)
- Basics of window functions: ROW_NUMBER, RANK, DENSE_RANK.
- Explain normalization and denormalization; when to use each.
- What is a composite primary key and its use case.
- How to implement slowly changing dimensions (SCD Types 1,2,3).
- Performance tuning for SQL queries.
- SQL CASE-WHEN statements combined with GROUP BY.

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Round 2
Python & Cloud

Python coding
1. Find repeated characters in a string.
2. Array manipulation or algorithm-based problems (prime numbers, duplicates, etc.)

Cloud
1. Which cloud services were used in your projects (AWS, GCP, Azure).
2. Hands-on experience with S3, Lambda, EMR, Glue, Redshift.

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Round 3
Big Data, Spark, NoSQL, DSA

1. SQL queries involving nested subqueries and complex joins.
2. Apache Spark fundamentals:
   a. RDDs vs DataFrames
   b. Transformations and actions
   c. Partitioning and caching
3. Columnar NoSQL databases:
   a. Differences with relational databases
   b. Query optimization and storage strategies
4. DSA problem: Array-based questions (e.g., prime numbers in array, repeated elements, etc.).

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Round 4
Data Warehousing & SQL

1. Data warehouse concepts:
   a. Star Schema vs Snowflake Schema
   b. Fact and Dimension tables
   c. Slowly Changing Dimensions (SCD Type 1,2,3)
2. SQL queries using CASE-WHEN, GROUP BY, and aggregations.
3. Discussion around past projects, architecture, challenges, and optimizations.

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Round 5
Bar Raiser / Behavioral

1. Hypothetical scenarios related to Amazon Leadership Principles:
   a. Ownership, customer obsession, bias for action, deliver results
2. Team conflict scenario:
   a. If 2-3 team members disagree on your architecture design, how will you convince them?
3. Behavioral questions:
   a. Handling tight deadlines
   b. Learning new technologies
   c. Teamwork and collaboration

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Round 6
Hiring Manager

1. Discussion on past projects and experience.
2. AWS-related questions:
    a. Redshift query optimization
    b. Real-time pipelines using Kinesis or Kafka
    c. Glue and Lambda architecture
3. Career expectations:
    a. What you are looking for in the next role
    b. Reason for leaving current company

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Thank You

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

HIRED

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