**MIS and Advanced Analytics**

**Interview Questions**

* Types of joins in SQL.
* Difference between left outer join and left join.
* SQL basics & queries (joins, subqueries).
* SQL query regarding joins.
* Write SQL queries for duplicates, nth highest salary.
* Data cleaning using Pandas.
* Outlier analysis (Z-score, IQR, boxplot).
* PowerBI usage questions.
* DAX query (PowerBI).
* Python:
  + Lambda function.
  + What is Dictionary in Python?
  + Difference between list and tuple.
  + Basic Python functions.
* **Projects:** Explain your project (modules, flow, scaling).
* **HR:** *If you are assigned two high priority tasks to complete at the same time, how will you handle it?*

**Related Questions**

* SQL:
  + Second highest salary (multiple approaches).
  + Window functions (ROW\_NUMBER, RANK, DENSE\_RANK).
  + Clustered vs non-clustered indexes.
  + Normalization vs denormalization.
  + Primary key vs Foreign key.
* Python:
  + Shallow vs deep copy.
  + List/set/dict comprehensions.
  + Recursion (factorial, Fibonacci).
  + Decorators (logging/authentication use case).
* Analytics/BI:
  + Handling missing data in Pandas.
  + Role of ETL pipelines.
  + PowerBI vs Tableau comparison.
* Projects:
  + How would you scale your project if users increased 100x?
  + How would you secure API endpoints?
  + Resume-based deep dive on challenges & solutions.
* HR/Behavioral:
  + Time management under pressure.
  + Example of teamwork & handling conflicts.
  + STAR approach for mistakes, learnings, successes.

**Preparation Strategy**

1. **SQL / DBMS**
   * Revise joins (inner, left, right, full), subqueries, group by, and indexes.
   * Practice SQL queries: duplicates, nth highest salary, window functions.
   * Revise DBMS fundamentals (ACID, normalization, keys).
2. **Python / Programming**
   * Practice dictionary, list, tuple, set differences + coding exercises.
   * Revise lambda functions, comprehensions, recursion, decorators.
   * Work on small coding tasks (factorial, Fibonacci, CRUD ops).
3. **Analytics / BI Tools**
   * Learn Pandas data cleaning (missing values, duplicates, outlier handling).
   * Revise PowerBI dashboard creation & DAX queries.
   * Compare PowerBI vs Tableau & discuss ETL pipelines.
4. **Projects**
   * Be ready to explain end-to-end project details (problem → solution → impact).
   * Have examples of scaling, performance improvements, and security.
   * Prepare 1–2 backup projects in case interviewer wants variety.
5. **HR / Behavioral**
   * Prepare answers for task prioritization & conflict resolution.
   * Use STAR framework for behavioral questions.
   * Research about the recruiter’s culture, analytics initiatives, and tech stack (AI/ML, FinTech, Cloud).