## Prompt: Can you generate an interview cheat sheet for the JD above, summarizing some common Q&A for the technical skills, to prepare for the technical interview?

**Answer:**

## Power BI & DAX

**Common DAX patterns**

* **YoY Growth**

YoY Growth % =

DIVIDE(

SUM(Sales[Amount]) - CALCULATE(SUM(Sales[Amount]), SAMEPERIODLASTYEAR(DimDate[Date])),

CALCULATE(SUM(Sales[Amount]), SAMEPERIODLASTYEAR(DimDate[Date]))

)

* **Running Total**

Running Total =

CALCULATE(SUM(Sales[Amount]), FILTER(ALL(DimDate), DimDate[Date] <= MAX(DimDate[Date])))

* **Rolling 3-Month Average**

Rolling 3M Avg =

AVERAGEX(

DATESINPERIOD(DimDate[Date], MAX(DimDate[Date]), -3, MONTH),

CALCULATE(SUM(Sales[Amount]))

**Optimization tips**

* Use **Star Schema** (Fact + Dimensions).
* Avoid unnecessary **bi-directional relationships**.
* Aggregate data before loading into Power BI (push transformations upstream).
* Use **measures instead of calculated columns** whenever possible.

## 🔹 SQL Essentials

**Top N by spend**

SELECT supplier\_id, SUM(amount) AS total\_spend

FROM procurement

WHERE transaction\_date >= DATEADD(YEAR, -1, GETDATE())

GROUP BY supplier\_id

ORDER BY total\_spend DESC

LIMIT 3;

**Rolling 3-month average**

SELECT supplier\_id, transaction\_date,

AVG(SUM(amount)) OVER (

PARTITION BY supplier\_id

ORDER BY transaction\_date

ROWS BETWEEN 2 PRECEDING AND CURRENT ROW

) AS rolling\_3m\_avg

FROM procurement

GROUP BY supplier\_id, transaction\_date;

**Common techniques**

* JOIN types (INNER, LEFT, FULL).
* WINDOW FUNCTIONS (ROW\_NUMBER, RANK, PARTITION BY).
* CTEs for modular queries.
* HAVING for post-aggregation filters.

## 🔹 ETL & Data Warehousing

**5. How would you design a pipeline to pull data from SAP + Excel + SQL Server into a warehouse?**

* Step 1: **Identify sources** (SAP ERP, Excel sheets, SQL Server).
* Step 2: Use ETL tool (Power Query, SSIS, Python, or Azure Data Factory).
* Step 3: Apply **transformations** (cleaning, mapping, deduplication, standardization).
* Step 4: Load into **staging area** → transform → load into **data warehouse**.
* Step 5: Apply **data governance rules** (naming conventions, metadata, lineage).
* Step 6: Validate and automate with scheduled refresh.

**6. How do you ensure data quality and security in procurement data?**

* Data quality:
  + Validation rules (unique IDs, referential integrity).
  + Data profiling to check completeness and consistency.
  + Error handling & logging in ETL pipelines.
* Data security:
  + Role-based access controls in Power BI & warehouse.
  + Mask or encrypt sensitive supplier/contract data.
  + Audit trails for access and changes.

## 🔹 Scenario Framework

When asked a **business case question**:

1. **Understand requirements** → clarify KPIs & users.
2. **Identify sources** → systems, files, databases.
3. **ETL process** → clean, integrate, validate.
4. **Data model** → star schema.
5. **Visualization** → Power BI dashboard (KPIs, filters, drill-downs).
6. **Validation** → cross-check with stakeholders.
7. **Governance** → security, refresh, documentation.

## 🔹 Quick Reminders

* **UX Tips for Dashboards**: clear layout, KPI cards, color coding (green = good, red = bad), filters on top.
* **Agile Methods**: sprint planning, daily stand-ups, backlog grooming, delivering incrementally.
* **Storytelling**: always tie visuals back to a business decision (not just numbers).