Program Structure

Duration: 90 minutes total (split across multiple sessions).

Components:

1. **Introduction and Icebreaker** (5 minutes)
2. **Technical Interview** (75 minutes):
    - **Excel/Google Sheets** (20 minutes)
    - **SQL** (20 minutes)
    - **Power BI** (20 minutes)
    - **Tableau** (15 minutes)
3. **Behavioral Interview** (10 minutes)
4. **Feedback & Wrap-Up** (10 minutes)

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1. SQL Interview (20 minutes)

Key Skills: Query writing, joins, subqueries, aggregations, window functions, filtering.

SQL Interview Questions

1. **Basic Query and Filtering**:
    - **Question**: "Write a SQL query to retrieve all customers who placed orders over $500 in the last 30 days."
    - **What to Look For**: Understanding of `SELECT`, `WHERE` clauses, and date filtering using functions like `NOW() - INTERVAL` or `CURRENT_DATE - INTERVAL`.
    - **Sample Answer**:

```
SELECT customer_name, order_id, total_amount
FROM orders
WHERE total_amount > 500
AND order_date >= CURRENT_DATE - INTERVAL 30 DAY;
```

2. **Joins**:
    - **Question**: "Write a query that joins the `Orders` and `Customers` tables to show the total number of orders per customer in the last month."
    - **What to Look For**: Ability to use `INNER JOIN`, understanding of relationships between tables, and aggregation.
    - **Sample Answer**:

```
SELECT c.customer_name, COUNT(o.order_id) AS total_orders
FROM customers c
JOIN orders o ON c.customer_id = o.customer_id
WHERE o.order_date >= CURRENT_DATE - INTERVAL 30 DAY
GROUP BY c.customer_name;
```

3. **Aggregation**:
    - **Question**: "Write a query to calculate the average, minimum, and maximum order amounts per customer over the past year."
    - **What to Look For**: Proficiency with aggregation functions (`AVG()`, `MIN()`, `MAX()`) and grouping data.
    - **Sample Answer**:

```
SELECT customer_name,
       AVG(total_amount) AS avg_order,
       MIN(total_amount) AS min_order,
       MAX(total_amount) AS max_order
FROM orders
WHERE order_date >= CURRENT_DATE - INTERVAL 1 YEAR
GROUP BY customer_name;
```

4. **Window Functions**:
    - **Question**: "Write a query to calculate the running total of sales per month for each customer."
    - **What to Look For**: Understanding of window functions and how they differ from traditional aggregation.
    - **Sample Answer**:

```
SELECT customer_name, order_date, total_amount,
       SUM(total_amount) OVER (PARTITION BY customer_name ORDER
BY order_date) AS running_total
FROM orders
WHERE order_date >= CURRENT_DATE - INTERVAL 1 YEAR;
```

Things to Remember During SQL Interview:

- Ensure the student explains their query step-by-step and can justify their use of joins or aggregations.
- Test their ability to handle edge cases, such as missing data or filtering based on specific date ranges.
- Encourage efficiency in query writing—can they optimize a query for performance?

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2. Power BI Interview (20 minutes)

Key Skills: Data import and transformation, creating reports, building DAX expressions, data visualization, and interactivity (filters, slicers, RLS).

Power BI Interview Questions

1. **Data Import and Modeling**:

- **Question**: "You're given two datasets—sales data and product data in Excel. How would you load these into Power BI and establish relationships between them?"
- **What to Look For**: Ability to use Power Query for data loading and transformation, establishing relationships using the model view in Power BI.
- **Expected Answer**: The candidate should explain steps to import data via **Power Query**, clean it if necessary (e.g., handling missing values), and establish relationships in **Model View** based on keys (e.g., `ProductID`).

2. **DAX Functions**:
   - **Question**: "Write a DAX measure to calculate total sales and a separate measure for year-over-year (YoY) sales growth."
   - **What to Look For**: Understanding of DAX functions like `SUM()`, `CALCULATE()`, and time intelligence functions like `SAMEPERIODLASTYEAR()` or `PREVIOUSYEAR()`.
   - **Sample Answer**:

```
Total Sales = SUM(Sales[Amount])
YoY Growth =
(SUM(Sales[Amount]) - CALCULATE(SUM(Sales[Amount]),
SAMEPERIODLASTYEAR(Sales[Date])))
/ CALCULATE(SUM(Sales[Amount]), SAMEPERIODLASTYEAR(Sales[Date]))
```

3. **Dashboard Design**:
   - **Question**: "How would you design a dashboard to visualize sales trends, broken down by region and product category? How would you ensure interactivity?"
   - **What to Look For**: Ability to create line charts for trends, bar charts for category breakdowns, and use of slicers for filtering by region.
   - **Expected Answer**: Discuss the creation of **line charts** for time-series data, **bar charts** for categories, and **slicers** to filter data by region, category, and product. The student should also mention using **KPI cards** to highlight important metrics like total sales and YoY growth.
4. **Row-Level Security (RLS)**:
   - **Question**: "How would you set up row-level security (RLS) in Power BI to ensure that different users only see data relevant to their region?"
   - **What to Look For**: Knowledge of **RLS** implementation and how to create roles based on certain conditions.
   - **Expected Answer**: The candidate should describe setting up **roles** in Power BI, applying filters based on `Region`, and assigning those roles to specific users or groups.

Things to Remember During Power BI Interview:

- Assess their ability to think logically about data transformation and preparation in Power Query.
- Evaluate how they structure their DAX formulas and whether they can explain the logic clearly.
- Check their understanding of business insights—can they explain how their dashboard would support decision-making?

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3. Behavioral Interview (10 minutes)

- **Teamwork**: "Tell me about a time when you had to work on a project with multiple stakeholders. How did you handle conflicting requirements?"
- **Problem-Solving**: "Describe a situation where you were given incomplete data. How did you handle it and still deliver value to the client?"
- **Communication**: "How do you explain complex data insights to someone with no technical background?"

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4. Feedback & Wrap-Up (10 minutes)

- **Technical Feedback**: Provide insights into their SQL and Power BI skills, pointing out strengths (e.g., strong SQL queries, clear understanding of DAX) and areas for improvement.
- **Behavioral Feedback**: Discuss how well they communicated their thought process and tackled problem-solving.
- **Encourage Self-Reflection**: Ask the candidate how they felt about the interview and where they think they could improve.

Key Takeaways for Students:

- **SQL**: Practice writing efficient queries, especially focusing on joins, aggregations, and window functions.
- **Power BI**: Master DAX expressions for calculating metrics and become proficient in designing interactive dashboards that help drive business decisions.
- **Communication**: Be able to explain your thought process clearly, especially when solving complex data problems.
- **Business Insights**: Always tie your technical skills back to business problems—explain how your work provides value to the organization.