**Axon Car Sales Power BI Project Interview Questions:**

Technical Skills:

* **Describe the process of importing and cleaning data in Power BI.**

In Power BI Desktop, you can import data from various sources such as databases, Excel files, or online services. For Axon sales Project, data was imported from a MySQL database using Power BI's data import functionality.

In Power Query Editor, data cleaning involved removing null columns, merging columns, handling missing values, and changing data types. Unnecessary columns were dropped, and transformations were applied to ensure data quality for analysis.

* **Explain how you would create calculated columns and measures using DAX in Power BI.**

To create a calculated column, you can use the "New Column" option in Power BI's data view. For example, you can create a calculated column to calculate the total price of an order by multiplying the quantity ordered by the price each.

To create a measure, you can use the "New Measure" option in Power BI's data view. Measures are typically used for aggregations such as sum, average, or count. For example, you can create a measure to calculate the total sales amount by summing the total price of all orders.

* **How would you design an interactive dashboard for sales analysis in Axon's context (classic car sales)?**
  + - The dashboard should focus on key areas such as product analysis, order analysis, and customer analysis.
    - Implement slicers for year-wise and product category-wise data navigation. Use interactive visualizations like line charts, bar charts, and maps to display sales trends and performance metrics.
    - Provide insights on sales by office, average order value, quarterly trends, and top paying customers.
* **What visualization techniques would you use to analyse sales trends and identify top-performing models?**
  + - Trend Analysis: Use line charts to visualize sales trends over time.
    - Top-Performing Models: Use bar charts to compare sales performance across different car models. Implement slicers for interactive filtering based on product categories or specific models.

Project Understanding:

* **What were the key challenges Axon faced with their sales data before implementing Power BI?**

Scattered data sources and lack of a centralized system for data management.

Data Analysis: Difficulty in making sense of sales data and generating accurate and up-to-date sales reports.

* **Can you describe the main objectives of the Axon Car Sales Power BI project?**

**Objective**: To design and implement a Business Intelligence solution using Power BI and SQL to help Axon manage and analyse their sales data effectively.

**Goals:** Import and integrate data from MySQL into Power BI, clean and transform data, build interactive dashboards and reports, perform advanced analytics using SQL, and enable real-time access to dashboards for data-driven decision-making.

* **What types of data sources do you think were used for this project (e.g., sales records, car information)?**

Sales records, product information, customer data, employee data, office information, orders, order details, and payment information.

* **How might the Power BI dashboards be used by different stakeholders at Axon (sales team, management)?**

**Sales Team:** To track individual and team performance, analyse product sales, and identify top customers.

**Management:** To monitor overall sales performance, analyse profitability, and make data-driven decisions.

Analytical Thinking:

* **Based on sales data, how could you identify which classic car models are most profitable for Axon?**

We can identify required condition about product/car by various means, following three are listed below: -

* + - **Analysis Approach:** Use Power BI to calculate the profit margin for each car model by subtracting the cost of each car from its selling price.
    - **Visualization:** Create a bar chart or table showing the profit margin for each car model, sorted from highest to lowest.
    - **Insights:** Identify the car models with the highest profit margins as the most profitable for Axon.
* **Can you suggest strategies to increase sales for specific car models using insights from Power BI?**

Utilize Power BI to analyse sales data for specific car models, examining trends, seasonality, and any patterns in sales performance over time, in given Axon project we can observe multiple models with amazing sales performance for e.g. 1992 Ferrari 360 Spider Red. Let dive further into considering the above stated model-

**Analysis Approach:**

Analyse sales data to identify the top-selling car models, such as the 1992 Ferrari 360 Spider and the 2001 Ferrari Enzo.

Use Power BI to analyse customer demographics and purchasing behaviours related to these models.

Evaluate the performance of different sales channels (e.g., online, dealerships) for these models.

**Visualization:**

Create a bar chart visualizing the sales performance of the top-selling models.

Use pie charts to segment customers by demographics and visualize their preferences for these models.

**Insights and Strategies:**

Develop targeted marketing campaigns highlighting the unique features and appeal of the 1992 Ferrari 360 Spider and the 2001 Ferrari Enzo to attract potential buyers.

Offer limited-time promotions or discounts on these models to create urgency and increase sales.

Focus on providing exceptional customer service and personalized experiences for customers interested in these models.

Explore new sales channels or partnerships to reach a broader audience for these models.

* **How might you use Power BI to analyse customer demographics and target marketing campaigns more effectively?**
  + - **Analysis Approach:** We use Power BI to segment customers based on demographics (e.g., age, gender, location) and buying behaviour e.g. categorising them in different column on certain condition like analysing customer credit limit of different countries, based on order quantity and frequency of purchases made from regions etc.
    - **Visualization**: In Power BI create demographic charts (e.g., pie charts, bar charts) to visualize customer segments e.g. map chart to highlight the profitable region, pie chart to understand concentration of number of customers in regions, bar chart to analyse the purchases in given region etc.
    - **Insights:** Identifying key customer segments for each car model involves analysing customer data to understand their characteristics and behaviour’s. Using Power BI, demographic charts (e.g., bar, pie) can visualize age and gender distribution of customers interested in classic cars, revealing which groups are most interested. Geographic maps can show customer locations, highlighting regions with high potential. These insights help tailor marketing campaigns efficiently.
* **Imagine a scenario where sales for a particular classic car segment decline. How would you use Power BI to investigate the reasons behind this?**
  + - **Analysis Approach:** Use Power BI to analyse sales data for the specific car segment over time and compare it with other segments.
    - **Visualization:** Create line charts or trend charts to visualize sales trends for the segment in question.
    - **Insights:** Look for factors such as changes in market demand, competitor actions, or pricing strategies that may have contributed to the decline. When investigating the reasons behind a decline in sales for a particular classic car segment, it's essential to consider various factors that may have contributed to this decline. For example, you can create a line chart to visualize the sales trend for the declining segment over time. By comparing this trend with other segments or overall sales, you can identify if the decline is specific to the segment or part of a broader trend. Additionally, you can analyse cost rise data to understand if changes in costs have affected sales. This can help you determine if internal factors such as cost management are contributing to the decline.
    - **Action:** Use insights to adjust marketing strategies, pricing, or product offerings to revive sales for the segment.

Bonus Points:

* **Discuss any challenges you faced while working on the Axon Car Sales Power BI project and how you overcame them.**

In my first Power BI project, I encountered challenges in understanding how to connect Power BI Desktop to SQL Workbench. This process took some time to grasp, but I learned and overcame it through understanding. Additionally, I faced challenges in importing and transforming data, as well as understanding data cleaning and cross-verifying with SQL queries. However, I tackled these challenges through consistent learning. These experiences have helped me gain a better understanding of Power BI and SQL, and I look forward to applying this knowledge to future projects.

* **Can you demonstrate any advanced Power BI techniques you used in the project (e.g., drill-throughs, time intelligence)?**

In my project, I demonstrated advanced Power BI techniques by using time intelligence functions. I created a table containing only the date column and then used these functions to create a month column. This table was then linked to the main fact table for data modelling purposes. Through this date table, I analysed the average monthly orders made by customers at Axon Retailers. Additionally, I analysed the quarterly sales of the company. To enhance interactivity, I added slicers that allowed me to filter the data and view the readings according to the selected year. This approach helped me gain deeper insights into sales trends and customer behaviours over time.

* **If you weren't directly involved in the project, you can research common challenges in classic car sales and propose how Power BI could be used to address them.**

If I were to research common challenges in classic car sales, I might find that one challenge is identifying the most profitable models or understanding customer preferences. Power BI could address these challenges by analysing sales data to identify the top-selling models, customer demographics, and trends. With this information, dealerships could tailor marketing campaigns, adjust inventory, and optimize pricing strategies to increase sales and profitability. Additionally, Power BI could help dealerships track and manage their inventory more effectively, ensuring they have the right models available to meet customer demand.