# **TOPMATE.IO**

**Ask**  
Solve the problem to be eligible for the opportunity post we will have a 1:1 call to discuss further the specifics of the job

**AdventureWorks Sales Analysis**

We expect dynamic reports and profound analytical insights using Power BI.

* Data Link: [AdventureWorks Sales Data](https://github.com/microsoft/powerbi-desktop-samples/blob/main/AdventureWorks%20Sales%20Sample/AdventureWorks%20Sales.xlsx)
* Pick any 12 to tackle.

**Data**

[**https://github.com/microsoft/powerbi-desktop-samples/blob/main/AdventureWorks%20Sales%20Sample/AdventureWorks%20Sales.xlsx**](https://github.com/microsoft/powerbi-desktop-samples/blob/main/AdventureWorks%20Sales%20Sample/AdventureWorks%20Sales.xlsx)

**AdventureWorks Sales Data**This dataset contains information about sales transactions, product models, product categories, and geographical details about customers.  
  
  
**Data Problems/Questions**

1. Yearly Sales Trend Analysis: Analyze the total sales trend over the years and identify any significant growth or decline in sales.
2. Product Performance: Identify the top 5 performing products based on total sales and analyze their monthly sales trend for the last year.
3. Sales by Region: Compare total sales by geographical regions and highlight the best and worst performing regions.
4. Profitability Analysis: Calculate the profitability per product category and identify the most profitable category.
5. **Market Basket Analysis: Perform a market basket analysis to find out which products are commonly purchased together.**
6. **Sales Channel Efficiency: Compare the efficiency of different sales channels (online vs. retail).**
7. Customer Retention Analysis: Analyze the data to find out the retention rate of customers and factors affecting their loyalty.
8. Inventory Management: Analyze the inventory turnover rate and highlight products that are overstocked or understocked.
9. Cumulative Sales Analysis:
   1. Create a DAX measure to calculate cumulative sales over a year. Use a variable to store the maximum date selected by the user and calculate sales up to that date.
10. Product Category Performance Comparison:
    1. Develop a measure that calculates the percentage change in sales for each product category from the previous month. Use variables to simplify the DAX expression and enhance performance.
11. Dynamic Top N Analysis:
    1. Implement a dynamic measure that allows users to select the top N products based on sales. Incorporate a slicer in your report for users to choose the value of N dynamically.
12. Profit Margin Analysis by Region:
    1. Write a DAX measure to calculate the profit margin for each region. Include a dynamic filter to allow users to select specific regions or all regions, and visualize this data on a map.
13. Year-over-Year Growth Percentage:
    1. Create a DAX measure that calculates the Year-over-Year growth percentage for total sales. Use a date slicer to let users dynamically select the year and visualize the growth trend.
14. Dynamic Ranking with Slicers:
    1. Construct a DAX measure to dynamically rank customers or products based on sales. Allow users to adjust the ranking criteria through slicers, switching between sales, quantity, or profitability.
15. What-If Analysis for Discount Impact:
    1. Implement a DAX scenario analysis to show the impact of different discount levels on profitability. Use a parameter table to allow users to select a discount rate and dynamically visualize the net profit impact.
16. Dynamic Measure Based on Date Ranges:
    1. Create a measure that computes total sales within a user-defined date range. Utilize a DAX measure that adjusts based on the start and end dates provided by the user through a date range slicer.
17. Time Intelligence Analysis:
    1. Calculate Year-to-Date (YTD), Quarter-to-Date (QTD), and Month-to-Date (MTD) sales and compare them with the previous periods.
    2. Create a dynamic report that allows users to select the period and automatically updates the comparisons.

Answer any 12 Questions from above

**Submission Details:**

Email your Power BI solutions to akshay@topmate.io with the subject line:   
**Your Full Name: PowerBI: [Selected Problem].**

Feel free to share your analysis on LinkedIn—tag Topmate and Akshay Jain to broaden the impact of your work.

**Deadline: Submit by 17th May Friday , 8 PM (Extended).**

Embrace this chance to enhance your skills, gain visibility, and possibly secure a deeper engagement with topmate.io!

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### **Expectation**

Use the data to build the following charts, these are templates you can use for better KPIs/Charts but the theme for each page should be what mentioned above

If you do get selected we will have a one-on-one call to talk about individual pages, thought processes, and any takeaways from the data

Ultimately we want to see your Power BI Skills and your approach to exploring, and solving for Data Metrics starting from data to granularity to BI

### **Brownie Points**

Any fascinating insight apart from the above-asked question based on the given data