PROJECT REPORT: ATLIQ HARDWARES SQL CHALLENGE

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OBJECTIVE OF THE CHALLENGEINVESTING

Atliq Hardwares, a leading computer hardware producer, aimed to enhance data-driven decision-making by expanding its data analytics team. The objective was to assess the technical and soft skills of potential junior data analysts through a SQL challenge. The challenge involved extracting meaningful insights from the company's database, demonstrating proficiency in SQL, and visualizing the results using Power BI.

WHAT AND WHY: AREAS OF FOCUS

<u>What:</u> The challenge focused on assessing candidates' abilities to query and analyze the company's database using SQL, followed by visualizing the obtained insights using Power BI.

<u>Why:</u> The management recognized the need for quick and informed decisions and sought to build a proficient data analytics team. The SQL challenge aimed to identify candidates who could contribute to the team's technical capabilities while effectively communicating insights through data visualization.

KEY TOPICS AND TECHNIQUES

SQL Skills Assessment:

o Understanding database structure.

o Aggregating and joining data for analysis.

o Crafting complex SQL queries

Power BI Visualization:

o Utilizing various Power BI chart types.

o Creating interactive and insightful dashboards.

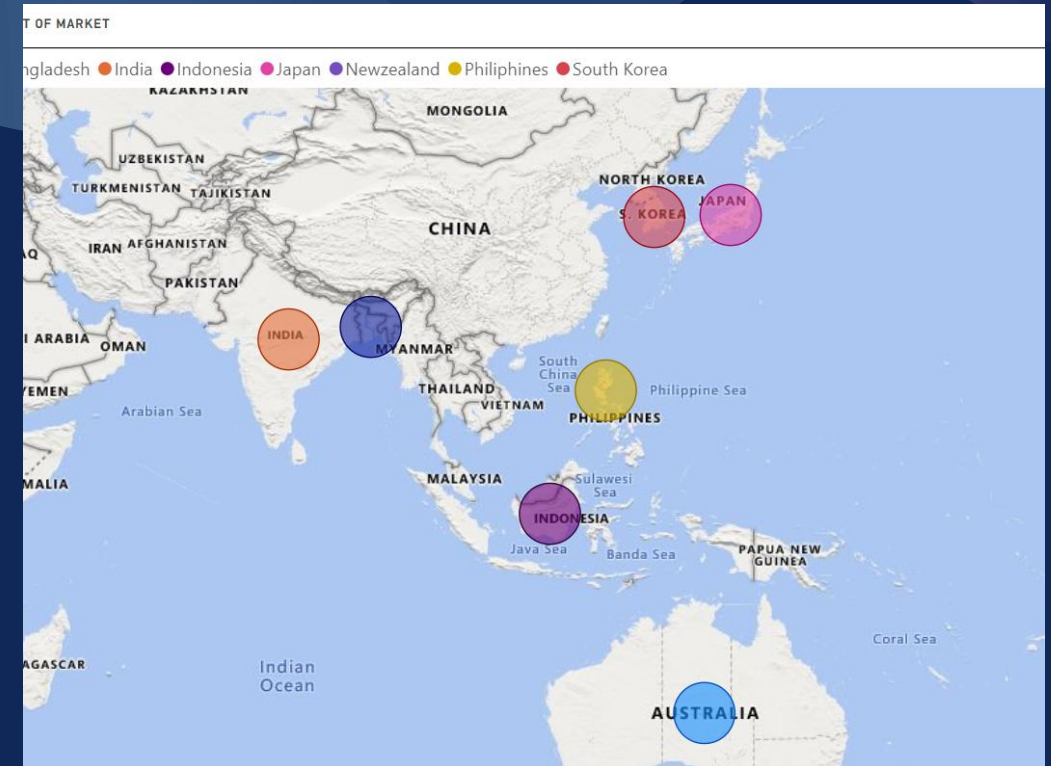o Presenting data-driven stories through visualization.

1. Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.

Market Analysis:

Output

Insights:

❖ Geographical Presence: "Atliq Exclusive" operates in key APAC markets, with India being a major contributor.

❖ Market Diversity: Presence in diverse countries like Indonesia, Japan, and Australia provides a global footprint.

2. What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields,
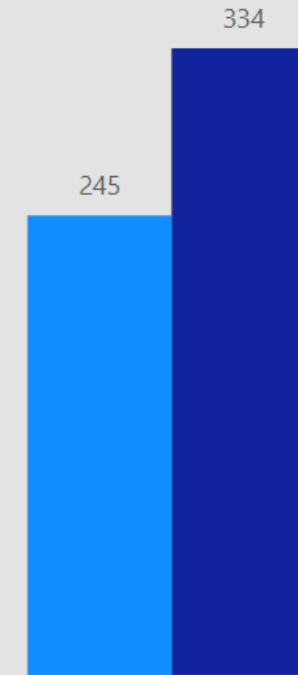
unique_products_2020
unique_products_2021
percentage_chg

Output

	unique_products_2020	unique_products_2021	percentage_chg
▶	245	334	36.3265

Unique Products 2021 Vs Unique Product 2020
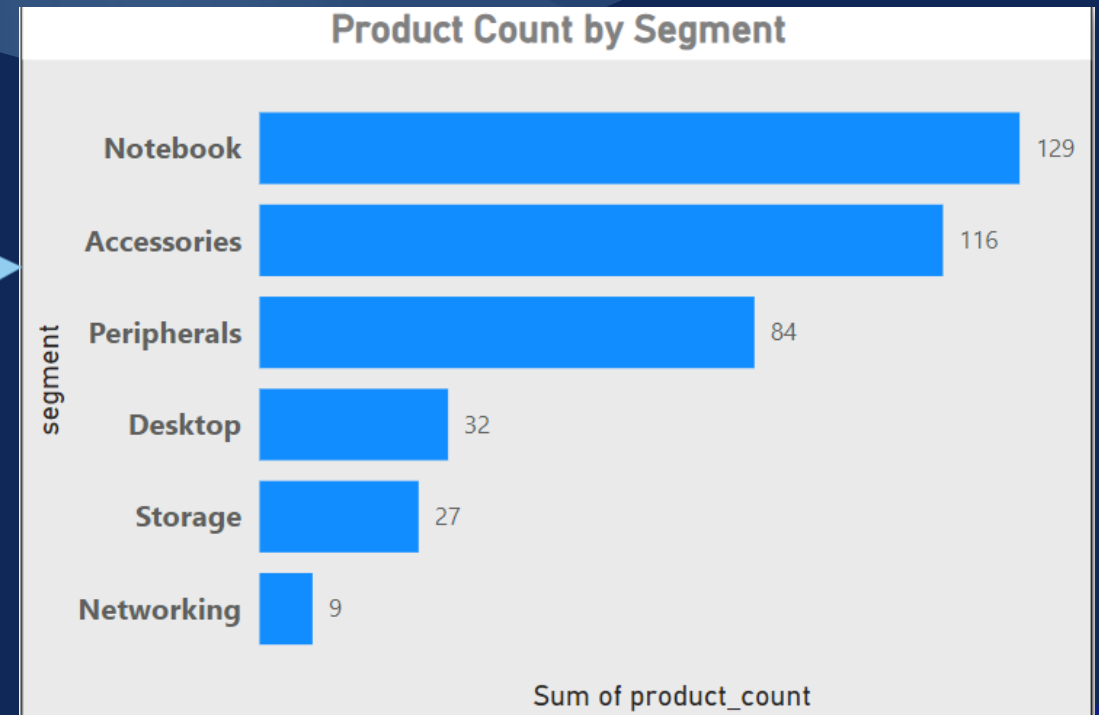
Insights:

❖ Substantial Growth: A notable 36.33% increase in unique products from 2020 to 2021.
❖ Product Portfolio Expansion: Indicates a continuous effort to diversify product offerings.

3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields,
segment
product_count

Output

segment	product_count
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9

Insights:

❖ Notebook Dominance: "Notebook" emerges as the leading segment with 129 unique products.
❖ Segment Distribution: Products are well-distributed across various segments, ensuring a balanced portfolio.

4.   Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields,

segment
product_count_2020
product_count_2021
difference

<u>Output</u>

segment	product_count_2020	product_count_2021	difference
Accessories	69	103	34
Notebook	92	108	16
Peripherals	59	75	16
Desktop	7	22	15
Storage	12	17	5
Networking	6	9	3

<u>Insights:</u>

❖ Accessories Surge: "Accessories" experienced the highest increase, aligning with market trends.
❖ Strategic Planning: Understanding segment-specific growth aids in targeted marketing efforts.

<u>Conclusion:</u> Atliq Hardwares should strategically invest in the "Accessories" segment to capitalize on the increasing demand.

5. Get the products that have the highest and lowest manufacturing costs.
The final output should contain these fields,

product_code
product
manufacturing_cost

Highest Manufacturing Cost Output

Highest Manufacturing Cost Output

Result Grid		Filter Rows:	Export:	W
product_code	product		manufacturing_cost	
A6120110206	AQ HOME Allin1 Gen 2		240.5364	

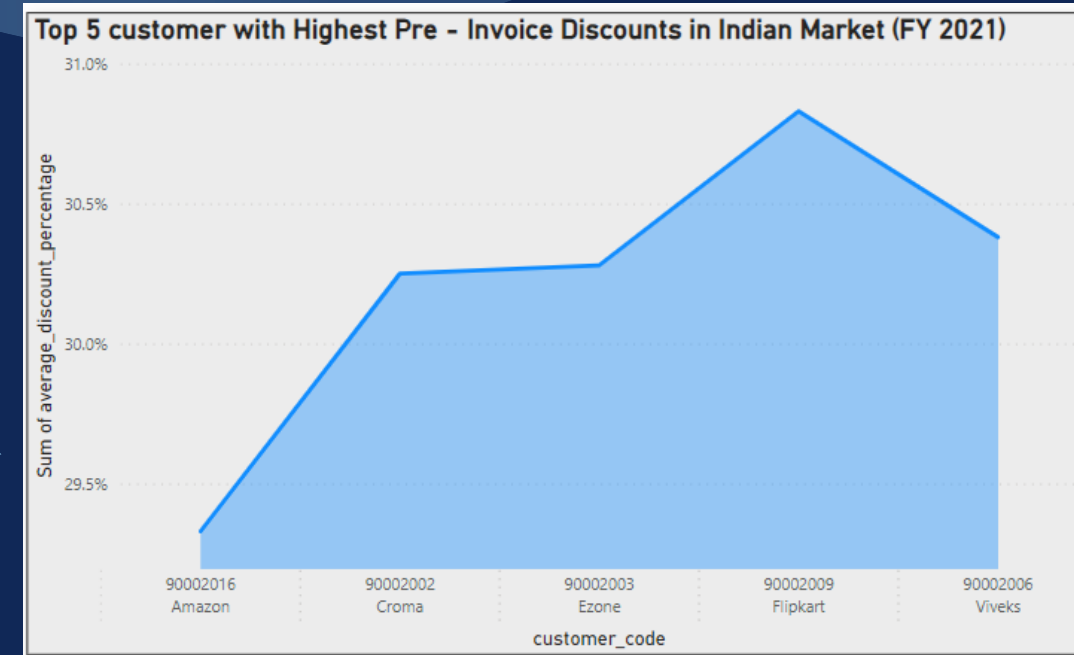|	product_code	product	manufacturing_cost
▶	A6120110206	AQ HOME Allin1 Gen 2	240.5364

Insights:

❖ Cost Variation: Products like "AQ HOME Allin1 Gen 2" with high manufacturing costs may require premium pricing.
❖ Cost Considerations: Identifying products with low manufacturing costs ("AQ Master wired x1 Ms") can inform pricing strategies.

6. Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields,

customer_code
customer
average_discount_percentage

Output


Insights:

❖ Discount Sensitivity: "Flipkart" and "Viveks" exhibit higher average discount percentages, indicating potential negotiations.
❖ Competitor Benchmarking: Comparing discount percentages provides insights into market dynamics.
❖ Conclusion: Atliq Hardwares should strategize discount offerings based on customer relationships and market competitiveness.

7. Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month. This analysis helps to get an idea of low and high-performing months and take strategic decisions.
The final report contains these columns:

Month
Year
Gross sales Amount

MonthName	2019	2020	2021	Total
April		8,00,071.95	1,14,83,530.30	1,22,83,602.26
August		56,38,281.83	1,13,24,548.34	1,69,62,830.17
June		34,29,736.57	1,54,57,579.66	1,88,87,316.23
March		7,66,976.45	1,91,49,624.92	1,99,16,601.38
May		15,86,964.48	1,92,04,309.41	2,07,91,273.89
February		80,83,995.55	1,59,86,603.89	2,40,70,599.44
July		51,51,815.40	1,90,44,968.82	2,41,96,784.22
September	90,92,670.34	1,95,30,271.30		2,86,22,941.64
January		95,84,951.94	1,95,70,701.71	2,91,55,653.65
December	97,55,795.06	2,04,09,063.18		3,01,64,858.23
October	1,03,78,637.60	2,10,16,218.21		3,13,94,855.81
November	1,52,31,894.97	3,22,47,289.79		4,74,79,184.76
Total	4,44,58,997.96	12,82,45,636.66	13,12,21,867.06	30,39,26,501.67

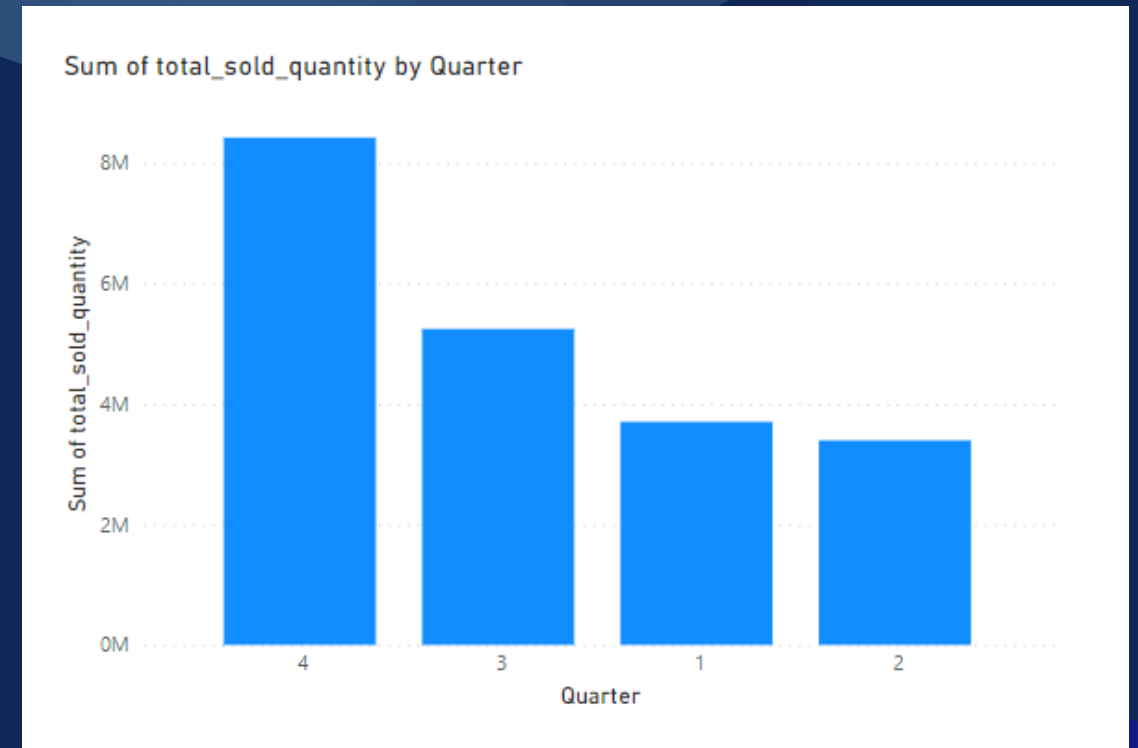Sum of Gross_Sales_Amount by MonthName and Year
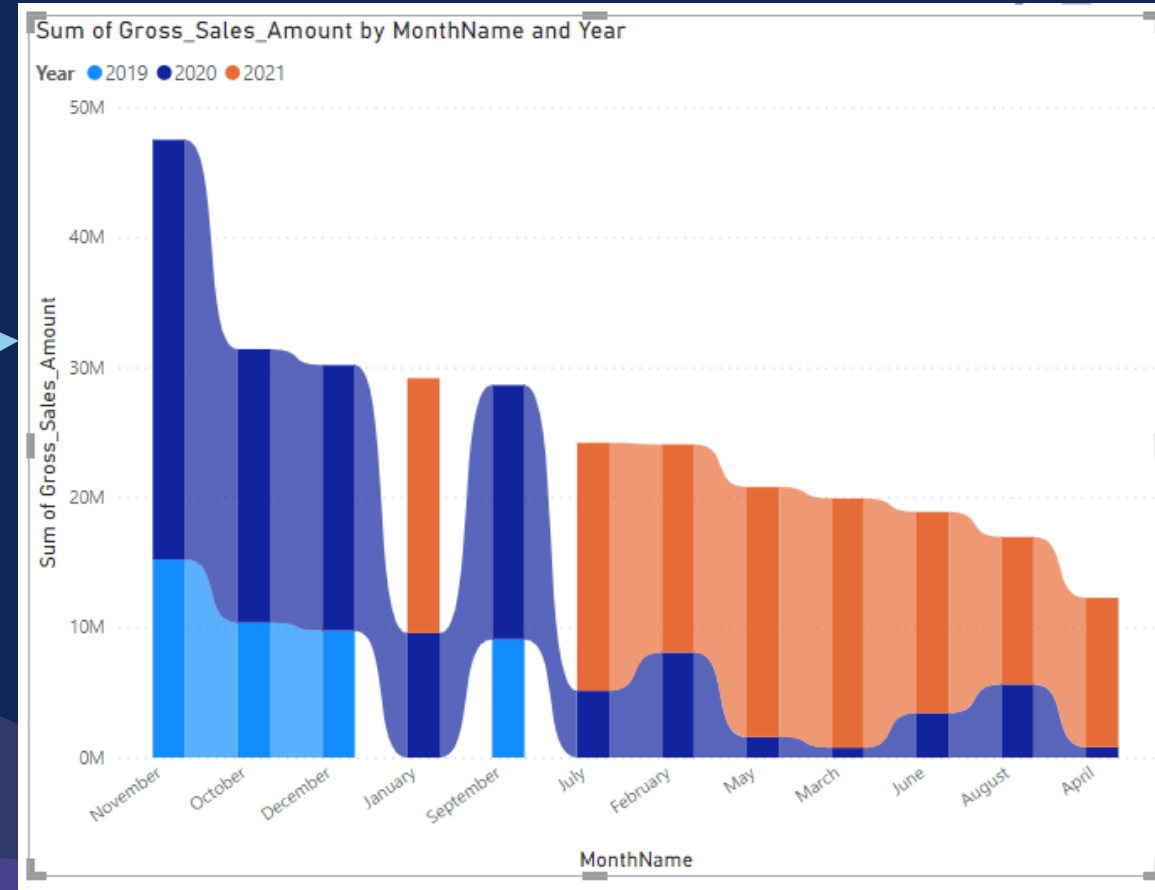
8. In which quarter of 2020, got the maximum total_sold_quantity? The final output contains these fields sorted by the total_sold_quantity,
Quarter
total_sold_quantity

Output

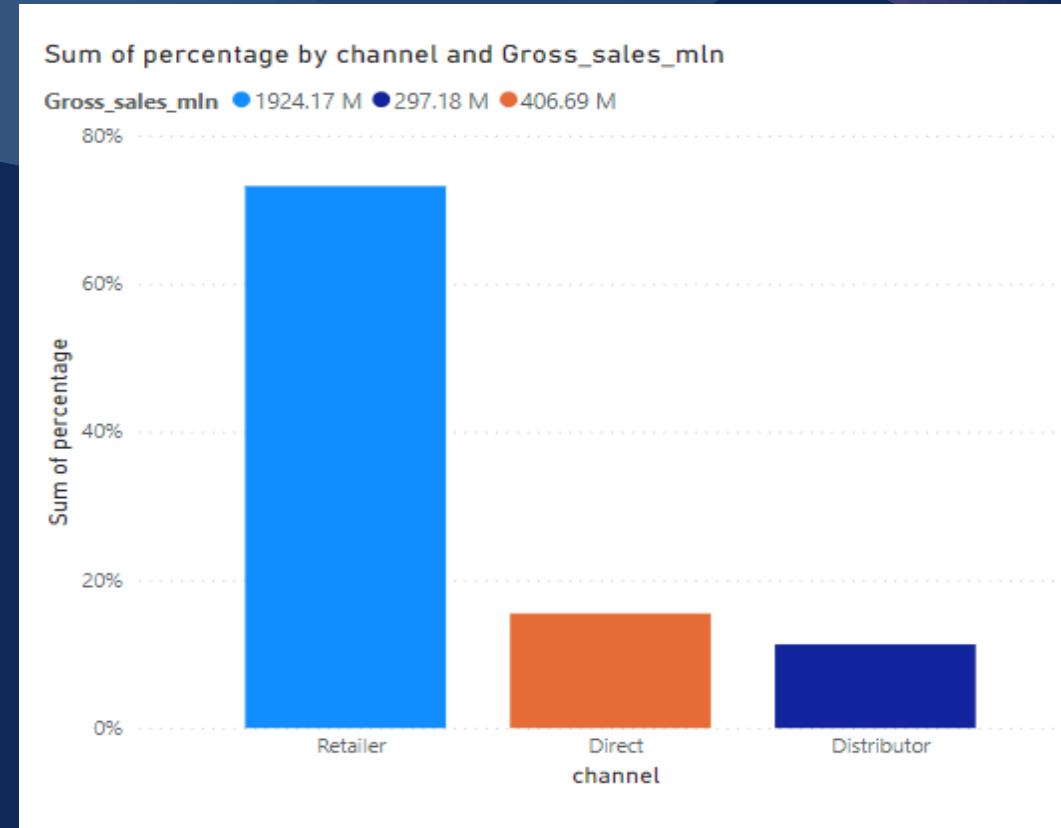| Quarter	total_sold_quantity
4	8425822
3	5246770
1	3704398
2	3395899

Sum of total_sold_quantity by Quarter

Insights:

❖ Identified the quarter with the highest total sold quantity.
❖ Informed resource allocation and production planning.

9. Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution? The final output contains these fields,
channel
gross_sales_mln
percentage

Output

channel	Gross_sales_mln	Sum of percentage
Retailer	1924.17 M	73.22%
Direct	406.69 M	15.48%
Distributor	297.18 M	11.31%

Sum of percentage by channel and Gross_sales_mln

Gross_sales_mln ● 1924.17 M ● 297.18 M ● 406.69 M

Insights:

❖ Revealed the significant contribution of the "Retailer" channel.
❖ Facilitated channel-specific marketing and partnership strategies.

10. Get the Top 3 products in each division that have a high
total_sold_quantity in the fiscal_year 2021? The final output contains these
fields,
division
product_code
codebasics.io
product
total_sold_quantity
rank_order

Output

division	product_code	product	total_sold_quantity	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1	701373	1
N & S	A6818160202	AQ Pen Drive DRC	688003	2
N & S	A6819160203	AQ Pen Drive DRC	676245	3
P & A	A2319150302	AQ Gamers Ms	428498	1
P & A	A2520150501	AQ Maxima Ms	419865	2
P & A	A2520150504	AQ Maxima Ms	419471	3
PC	A4218110202	AQ Digit	17434	1
PC	A4319110306	AQ Velocity	17280	2
PC	A4218110208	AQ Digit	17275	3

Insights:

❖ Provided a clear picture of the top-performing products in each division.
❖ Informed inventory planning and marketing focus.

Conclusion:

The Atliq Hardwares Data Analytics Challenge successfully identified potential junior data analysts with a combination of technical and soft skills. The insights derived from the SQL challenge and Power BI visualizations empower Atliq Hardwares to make informed, strategic decisions for sustainable growth and operational excellence. The use of SQL and Power BI showcased the integration of technical expertise with effective communication, aligning with the organization's goal of fostering a data-driven culture.

THANK YOU

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