



AD-HOC INSIGHTS

CONSUMER GOODS

SQL-BASED BUSINESS ANALYSIS

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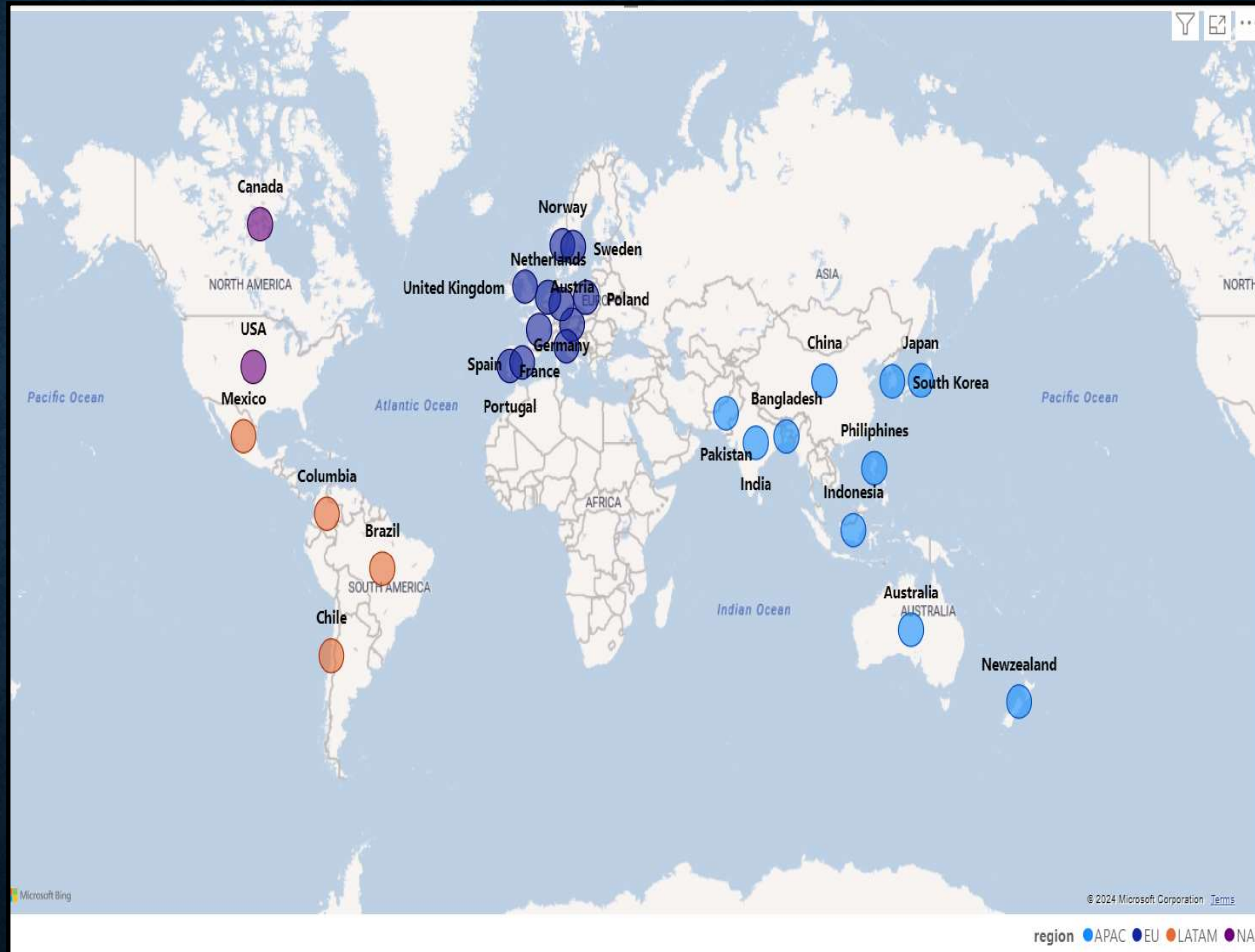


About AtliQ Hardwares

AtliQ Hardwares is one of the leading computer hardware manufacturers in India, with a strong global presence.

•Market

- AtliQ Hardwares operates in multiple regions, including **APAC, EU, LATAM, and EN** markets.
- Strong presence in key markets: **North America, South America, Europe, and Asia-Pacific.**
- Expanding network to drive innovation and global collaboration.



AtliQ's Product Line

Division	Segment	Category
P & A	Peripherals	 <ul style="list-style-type: none">➤ Internal HDD➤ Graphic Card➤ Processors➤ MotherBoard
P & A	Accessories	 <ul style="list-style-type: none">➤ Mouse➤ Keyboard➤ Batteries
PC	Notebook	 <ul style="list-style-type: none">➤ Personal Laptop➤ Business Laptop➤ Gaming Laptop
PC	Desktop	 <ul style="list-style-type: none">➤ Business Laptop➤ Personal Desktop
N & S	Storage	 <ul style="list-style-type: none">➤ External Solid State Drives➤ USB Flash Drives
N & S	Networking	 <ul style="list-style-type: none">Wi fi extender

The Data Dilemma at AtliQ

We need to talk. The management is struggling to make **quick, data-driven decisions**. They feel like they don't have enough **insights at their fingertips**.



Are we lacking the right tools or the right people



It's not just about tools. We need **skilled analysts** who can extract insights from data **quickly and efficiently**.



That makes sense. But hiring the right people isn't easy. What exactly are you looking for?



Tech skills and soft skills. Someone who knows **SQL**, can analyze data effectively, and can **communicate insights clearly**.



Finding that mix isn't easy. How do you plan to evaluate them?



A **SQL Challenge**—to
test problem-solving
and analytical thinking..



Smart! That way, we
hire based on real-
world skills.



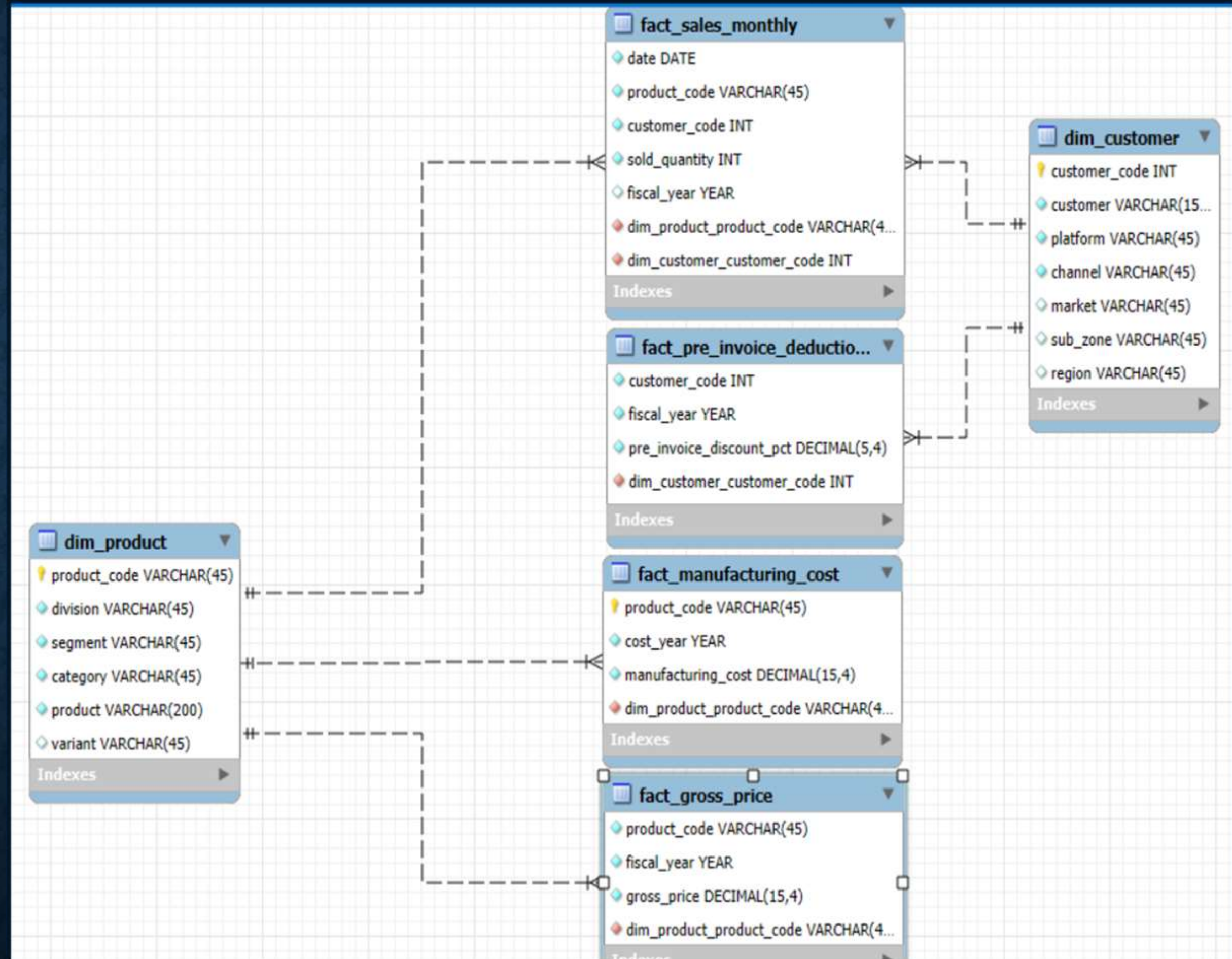
HOW ATLIQ OPERATES

A **Fiscal Year (FY)** is a **12-month financial reporting period** used by businesses for accounting and budgeting. It **does not always align with the calendar year**

- AtliQ's fiscal year runs from **September 1st to August 31st** each year.
- Available sales data covers **FY 2020 to FY 2021**.
- FY 2020** → September 2019 – August 2020
- FY 2021** → September 2020 – August 2021



Dataset





Ad-hoc requests

Codebasics SQL Challenge

Requests:

1. Provide the list of markets in which customer **"Atliq Exclusive"** operates its business in the **APAC** region.
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
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
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
5. Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields,
product_code
product
manufacturing_cost

codebasics.io

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
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
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
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
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

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

Input

```
SELECT DISTINCT market
FROM dim_customer
WHERE customer = 'Atliq Exclusive'
      AND region = 'APAC'
ORDER BY market;
```

Output

market
India
Indonesia
Japan
Philippines
South Korea
Australia
Newzealand
Bangladesh



Insight : AtliQ Exclusive operates in eight countries within the APAC region, demonstrating a significant regional market presence.


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 .

Input

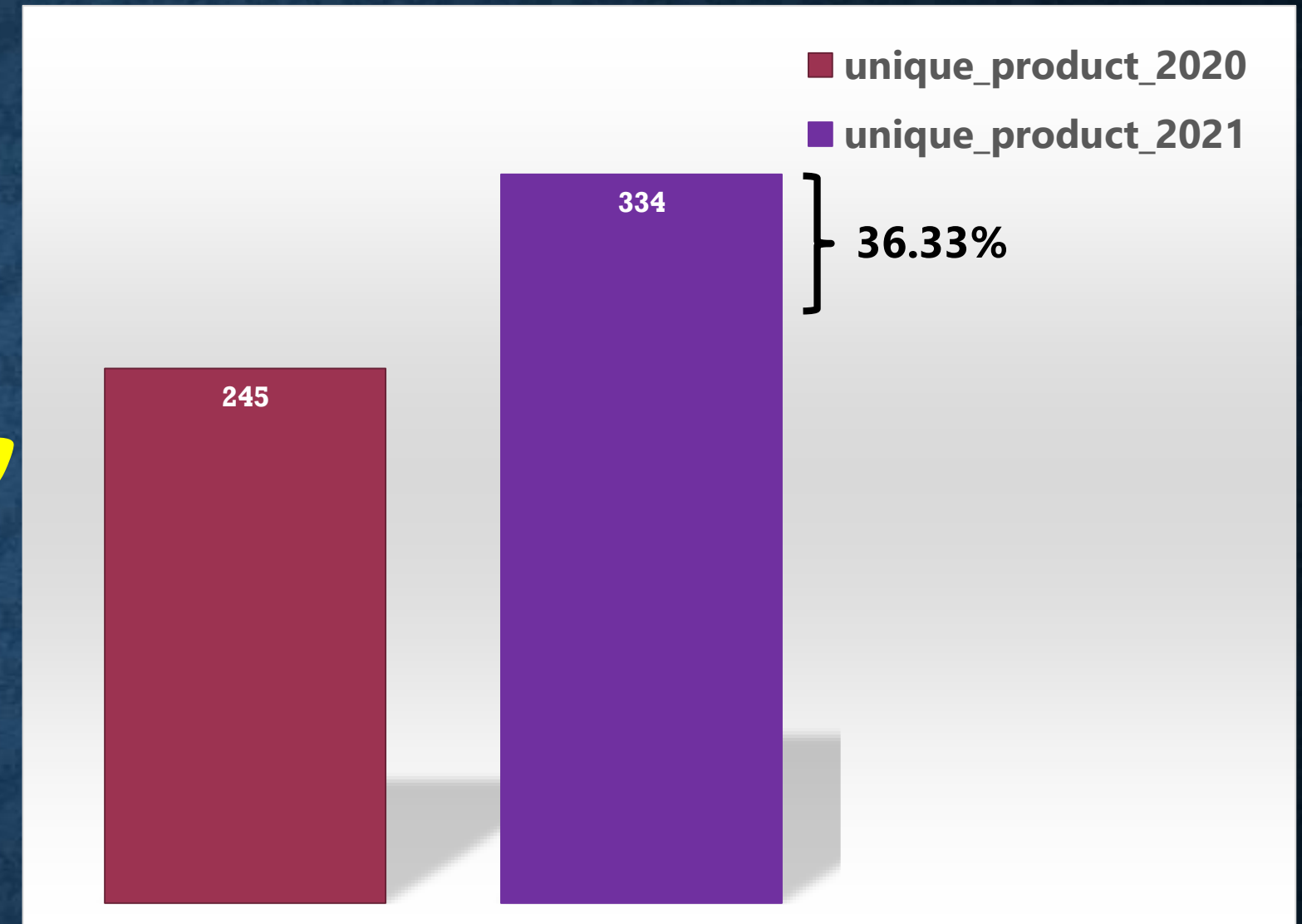



```
WITH CTE2020 AS (  
    SELECT COUNT(DISTINCT product_code) AS Unique_Products_2020  
    FROM fact_gross_price  
    WHERE fiscal_year = 2020  
)  
CTE2021 AS (  
    SELECT COUNT(DISTINCT product_code) AS Unique_Products_2021  
    FROM fact_gross_price  
    WHERE fiscal_year = 2021  
)  
SELECT  
    O.Unique_Products_2020 AS Unique_Products_2020,  
    T.Unique_Products_2021 AS Unique_Products_2021,  
    ROUND(  
        ((T.Unique_Products_2021 - O.Unique_Products_2020) * 100.0) / O.Unique_Products_2020, 2 )  
    AS Percentage_Change  
FROM  
    CTE2020 O, CTE2021 T;
```


Output



	Unique_Products_2020	Unique_Products_2021	Percentage_Change
▶	245	334	36.33



Insights :

1. The number of **unique products expanded** from **245 in 2020** to **334 in 2021**, marking a **36.33% increase**. 📈
2. This significant growth showcases **AtliQ's commitment to innovation** and **meeting diverse customer demands**.



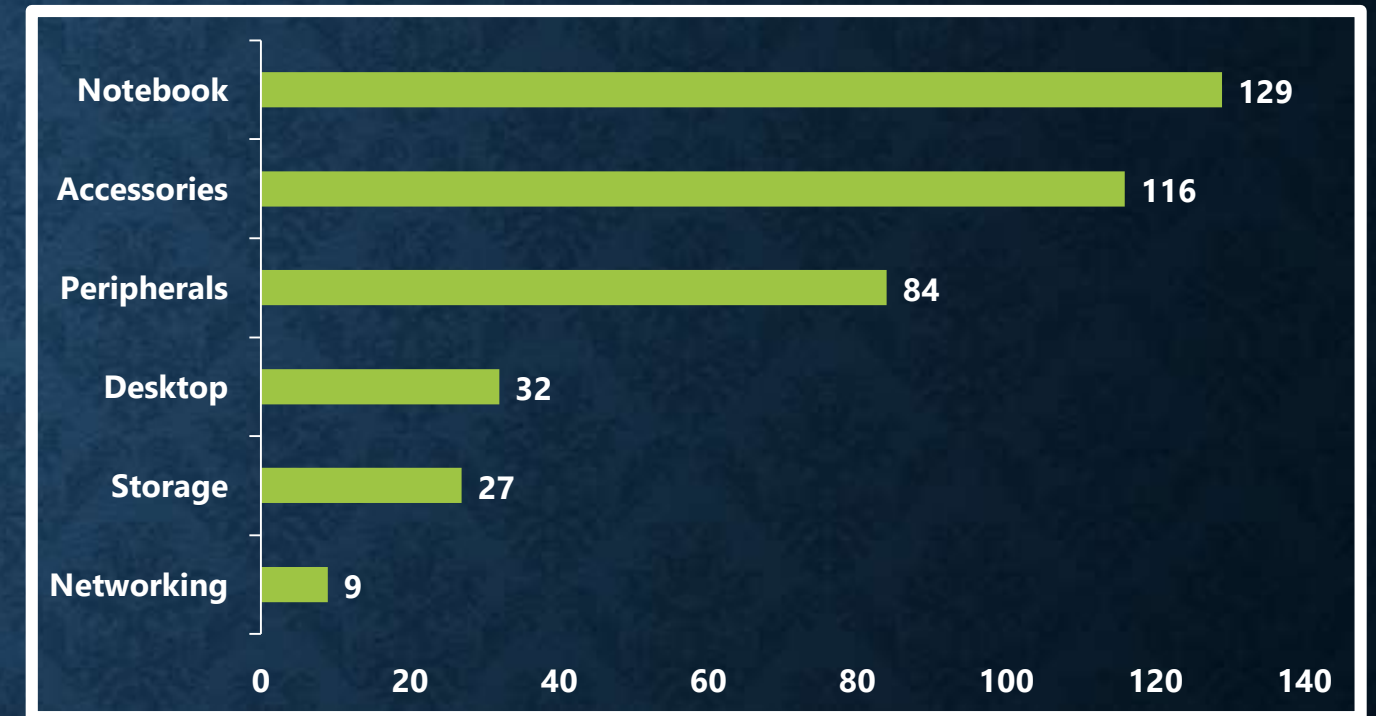
3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields, segment, product_count.

Input

```
SELECT
  segment,
  COUNT(DISTINCT
    product_code) AS product_count
FROM
  dim_product
GROUP BY
  segment
ORDER BY
  product_count DESC;
```

Output

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



Insights :

1. **Notebooks, Accessories, and Peripherals** dominate AtliQ's portfolio, comprising **82.87%** of products.
2. **Desktops, Storage, and Networking** hold a smaller **17.13%** share.
3. AtliQ should align these categories with **market trends** to boost their presence.



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.

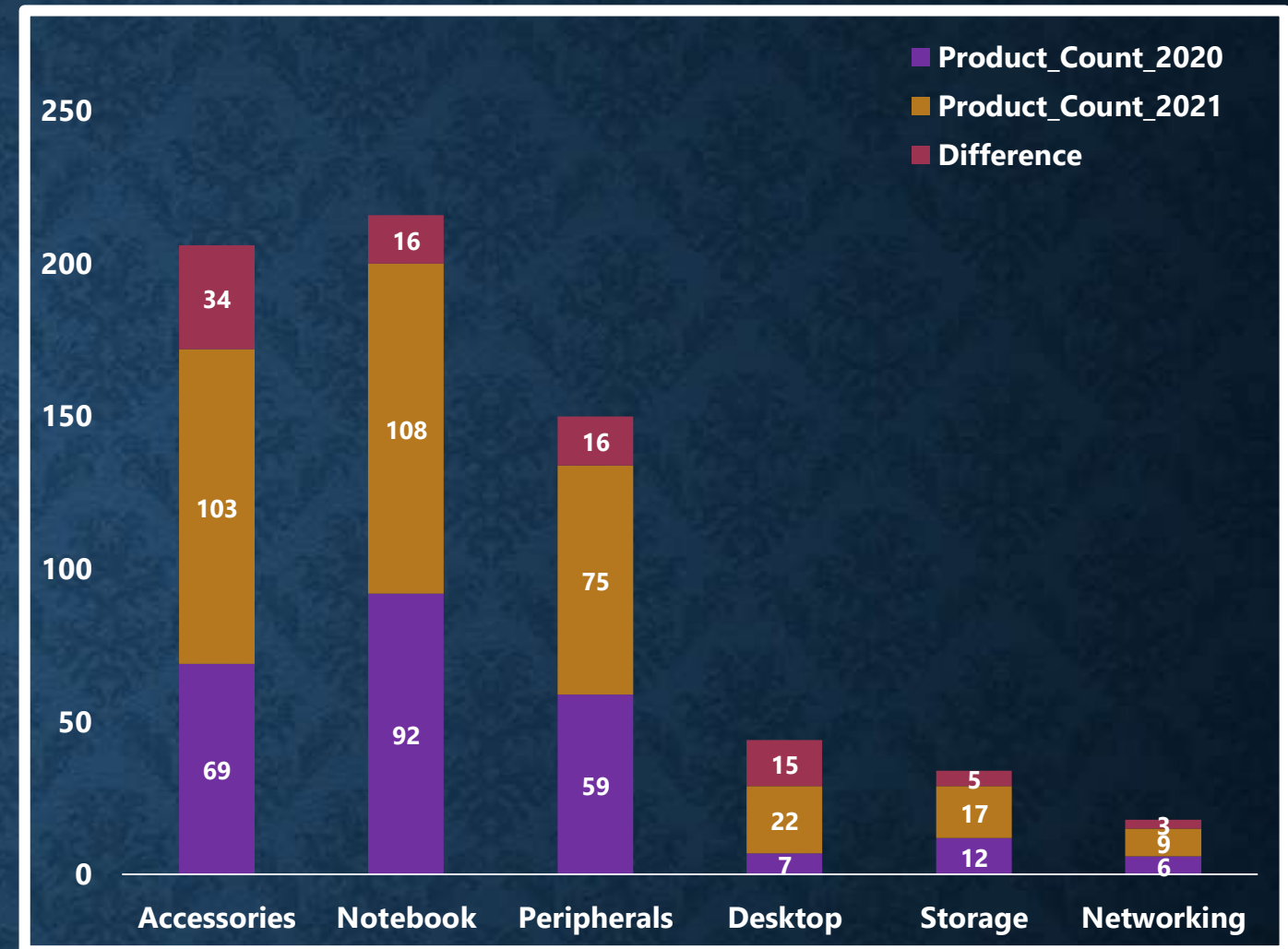
Input



```
WITH CTE2020 AS (  
    SELECT COUNT(DISTINCT product_code) AS Unique_Products_2020  
    FROM fact_gross_price  
    WHERE fiscal_year = 2020  
)  
CTE2021 AS (  
    SELECT COUNT(DISTINCT product_code) AS Unique_Products_2021  
    FROM fact_gross_price  
    WHERE fiscal_year = 2021  
)  
  
SELECT  
    O.Unique_Products_2020 AS Unique_Products_2020,  
    T.Unique_Products_2021 AS Unique_Products_2021,  
    ROUND(  
        ((T.Unique_Products_2021 - O.Unique_Products_2020) * 100.0) /  
        O.Unique_Products_2020,  
        2  
    ) AS Percentage_Change  
FROM CTE2020 O, CTE2021 T;
```


Output

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



Insight :

- **Accessories** led the growth, adding **34 new products** from 2020 to 2021.
- **Desktop** products saw a **214% surge**, marking a significant expansion.
- **Storage & Networking** had minimal growth, adding only a few new products.



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

Input

```
SELECT
  P.product_code,
  P.product,
  F.manufacturing_cost
FROM
  dim_product P
JOIN
  fact_manufacturing_cost F
ON
  P.product_code = F.product_code
WHERE
  F.manufacturing_cost IN (
    (SELECT MAX(manufacturing_cost)
     FROM fact_manufacturing_cost),
    (SELECT MIN(manufacturing_cost)
     FROM fact_manufacturing_cost)
  )
ORDER BY
  F.manufacturing_cost DESC;
```

Output

product_code	product	manufacturing_cost
A6120110206	AQ HOME Allin1 Gen 2	240.5364
A2118150101	AQ Master wired x1 Ms	0.8920



Highest
Manufacturing
Cost Product



Lowest
Manufacturing
Cost Product

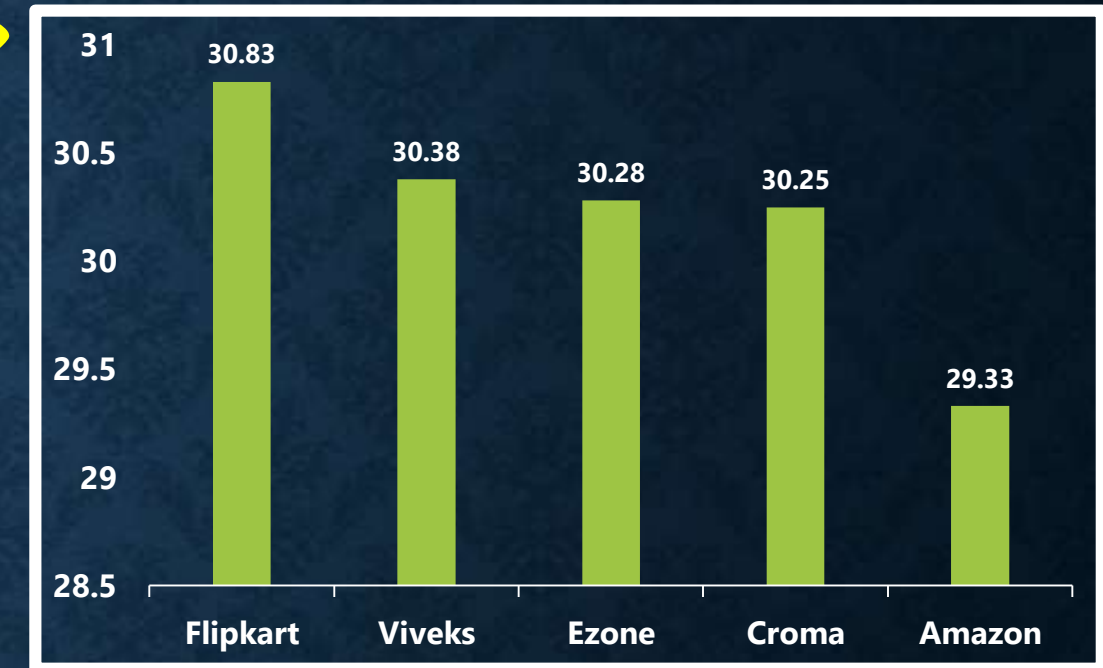
6. Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields, customer_code, customer, average_discount_percentage .

Input

```
SELECT
  C.customer_code,
  C.customer,
  ROUND(AVG(P.pre_invoice_discount_pct) * 100, 2) AS
  avg_discount_pct
FROM
  dim_Customer C
JOIN
  fact_pre_invoice_deductions P
ON
  C.customer_code = P.customer_code
WHERE
  P.fiscal_year = 2021
  AND C.market = 'India'
GROUP BY
  C.customer_code, C.customer
ORDER BY
  avg_discount_pct DESC
LIMIT 5;
```

Output

customer_code	customer	avg_discount_pct
90002009	Flipkart	30.83
90002006	Viveks	30.38
90002003	Ezone	30.28
90002002	Croma	30.25
90002016	Amazon	29.33



Insight :

- **Flipkart secured the highest average discount of 30.83%.**
- **AtliQ maintained a consistent discount strategy, offering its top 5 customers discounts ranging between 29.33% and 30.83%.**



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.

Input



```
SELECT
    MONTHNAME(s.date) AS Month,
    s.fiscal_year AS Year,
    SUM(s.sold_quantity * g.gross_price) AS Gross_sales
FROM fact_sales_monthly s
JOIN fact_gross_price g
    ON s.product_code = g.product_code
JOIN dim_customer c
    ON s.customer_code = c.customer_code
WHERE c.customer = "AtliQ Exclusive"
GROUP BY Month, Year
ORDER BY Year ASC;
```

Output

Month	Year	Gross_sales
September	2020	9092670.3392
October	2020	10378637.5961
November	2020	15231894.9669
December	2020	9755795.0577
January	2020	9584951.9393
February	2020	8083995.5479
March	2020	766976.4531
April	2020	800071.9543
May	2020	1586964.4768
June	2020	3429736.5712
July	2020	5151815.4020
August	2020	5638281.8287
September	2021	19530271.3028
October	2021	21016218.2095
November	2021	32247289.7946
December	2021	20409063.1769
January	2021	19570701.7102
February	2021	15986603.8883
March	2021	19149624.9239
April	2021	11483530.3032
May	2021	19204309.4095
June	2021	15457579.6626
July	2021	19044968.8164
August	2021	11324548.3409



- Insight: Sales Recovery:** March to May 2020 saw the lowest sales, likely due to the COVID-19 impact, with recovery starting in June.
- Peak Performance:** November 2020 recorded the highest sales at **15.23M**.
- Year-over-Year Growth:** Sales in 2021 showed significant growth compared to 2020.
- 2021 Highlights:** November had the highest sales at **32.25M**, while August recorded the lowest at **11.32M**.



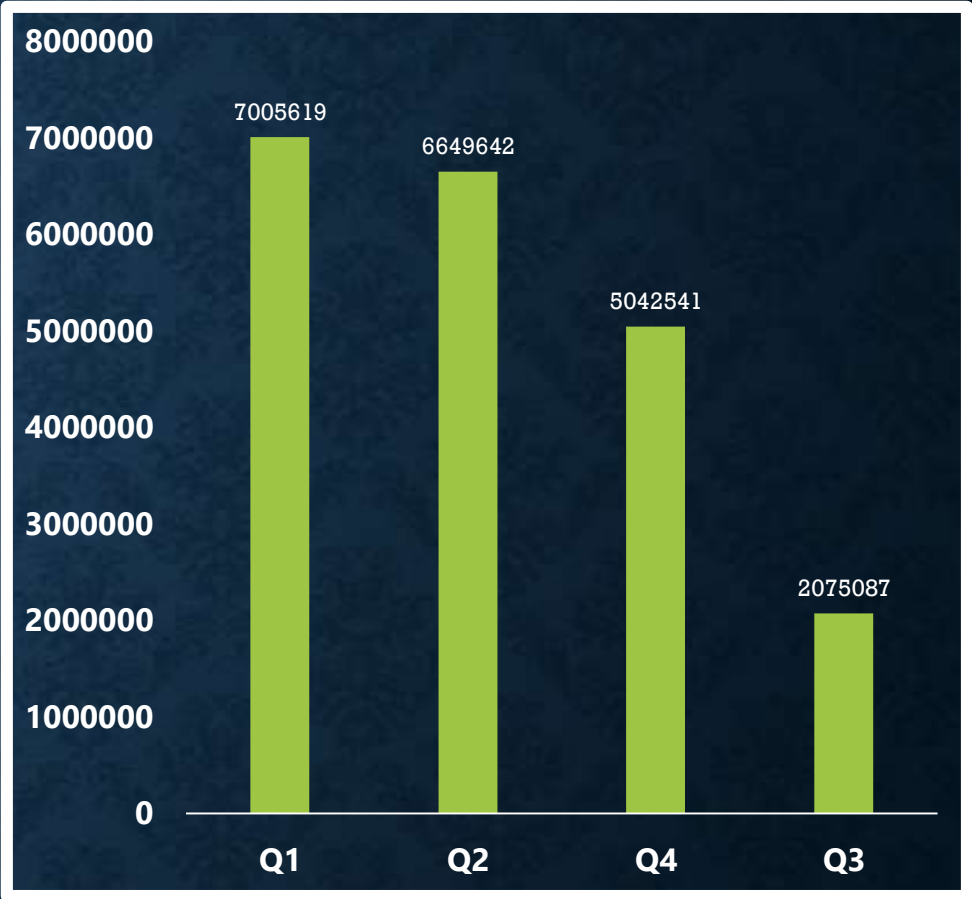
8. In which quarter of 2020, got the maximum total_sold_quantity? The final output contains these fields sorted by the total_sold_quantity, Quarter, total_sold_quantity.

Input

```
SELECT
CASE
  WHEN MONTH(date) IN (9, 10, 11) THEN 'Q1'
  WHEN MONTH(date) IN (12, 1, 2) THEN 'Q2'
  WHEN MONTH(date) IN (3, 4, 5) THEN 'Q3'
  WHEN MONTH(date) IN (6, 7, 8) THEN 'Q4'
END AS quarter,
SUM(sold_quantity) AS total_sold_quantity
FROM fact_sales_monthly
WHERE fiscal_year = "2020"
GROUP BY quarter
ORDER BY total_sold_quantity DESC;
```

Output

quarter	total_sold_quantity
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087



Insights :

- **Achieved the highest sales volume of approximately 7 million units in Q1 2020**, demonstrating strong market performance early in the year.
- **Analyzed a significant sales decline in Q3 2020 (March–May), likely due to the COVID-19 pandemic**, highlighting market challenges and shifting consumer behavior.



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.

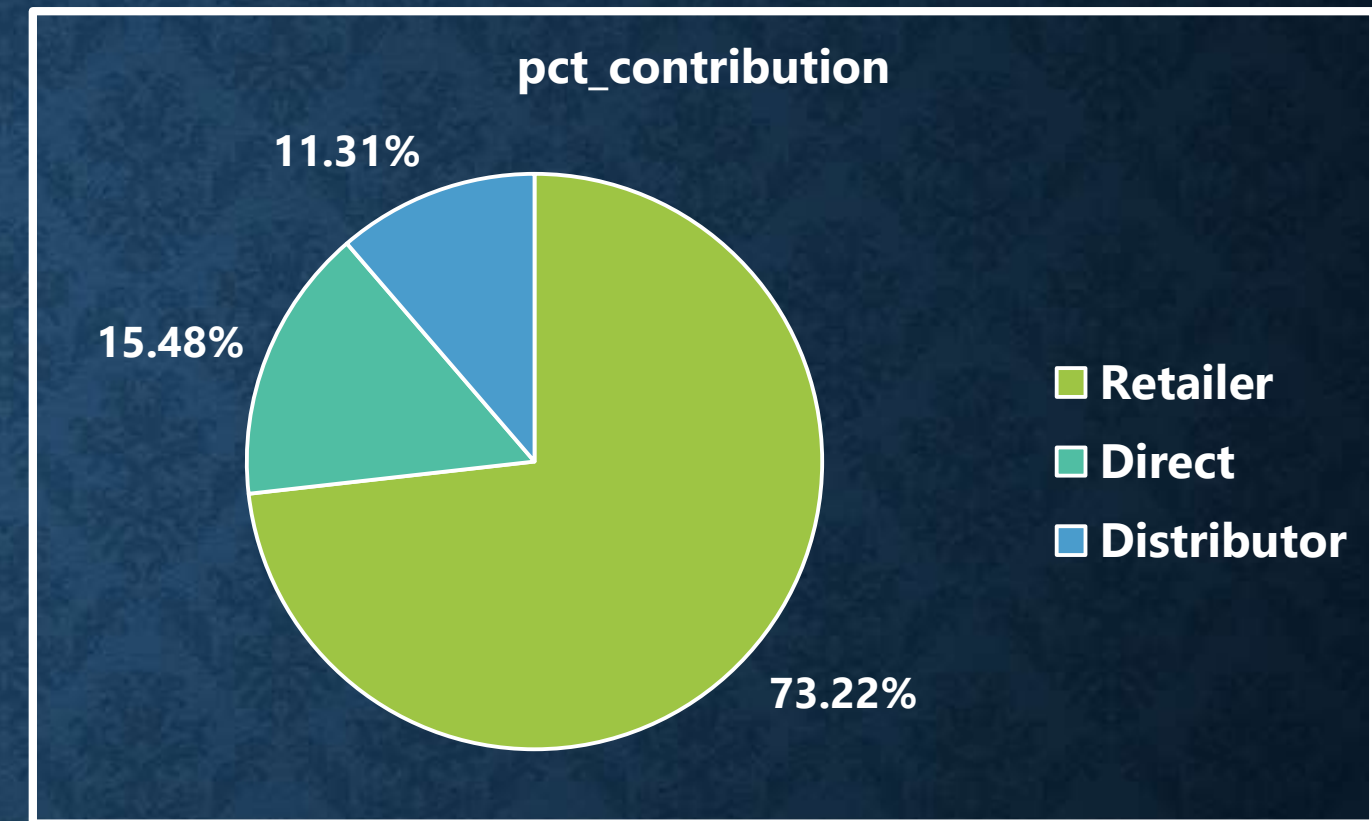
Input



```
WITH CTE AS (  
  SELECT  
    C.channel,  
    ROUND(SUM((G.gross_price * S.sold_quantity) / 1000000), 2) AS gross_sales_mln  
  FROM  
    dim_customer C  
  JOIN  
    fact_sales_monthly S ON C.customer_code = S.customer_code  
  JOIN  
    fact_gross_price G ON S.product_code = G.product_code  
  WHERE  
    S.fiscal_year = 2021  
  GROUP BY  
    C.channel  
)  
SELECT  
  *,  
  CONCAT(  
    ROUND(gross_sales_mln * 100 / (SELECT SUM(gross_sales_mln) FROM CTE), 2),  
    " %"  
  ) AS pct_contribution  
FROM  
  CTE  
ORDER BY  
  pct_contribution DESC;
```


Output

channel	gross_sales_mln	pct_contribution
Retailer	1924.17	73.22 %
Direct	406.69	15.48 %
Distributor	297.18	11.31 %



Insights:

- **Retail Channel Dominance:** Led to a significant contribution of 73.22% to AtliQ's total gross sales, showcasing the strength of the retailer network.
- **Direct & Distributor Channels:** Together contributed a smaller 26.79% to the total sales, highlighting potential areas for further development in these channels.



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 product total_sold_quantity rank_order.

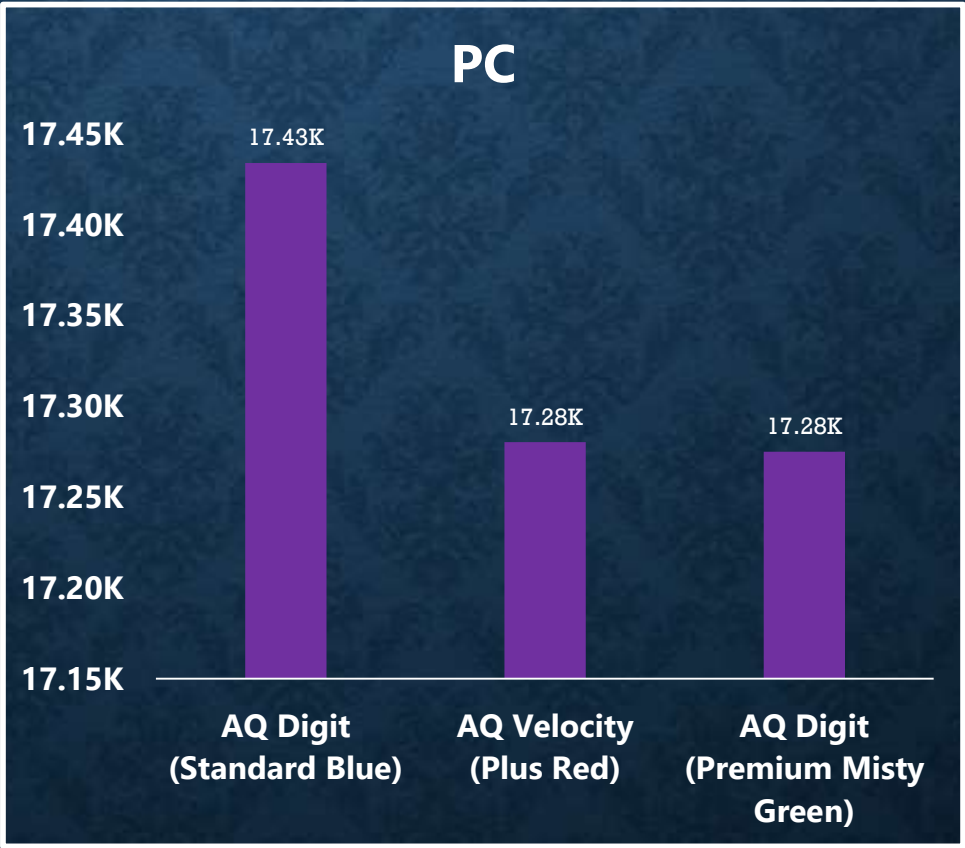
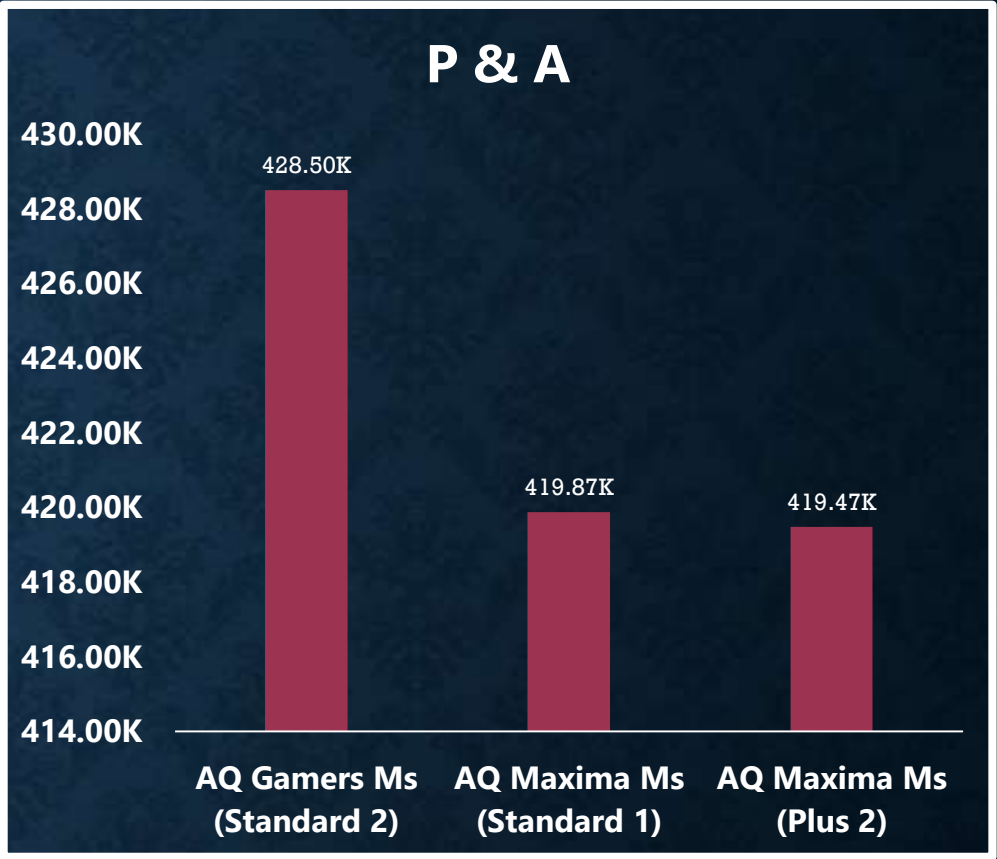
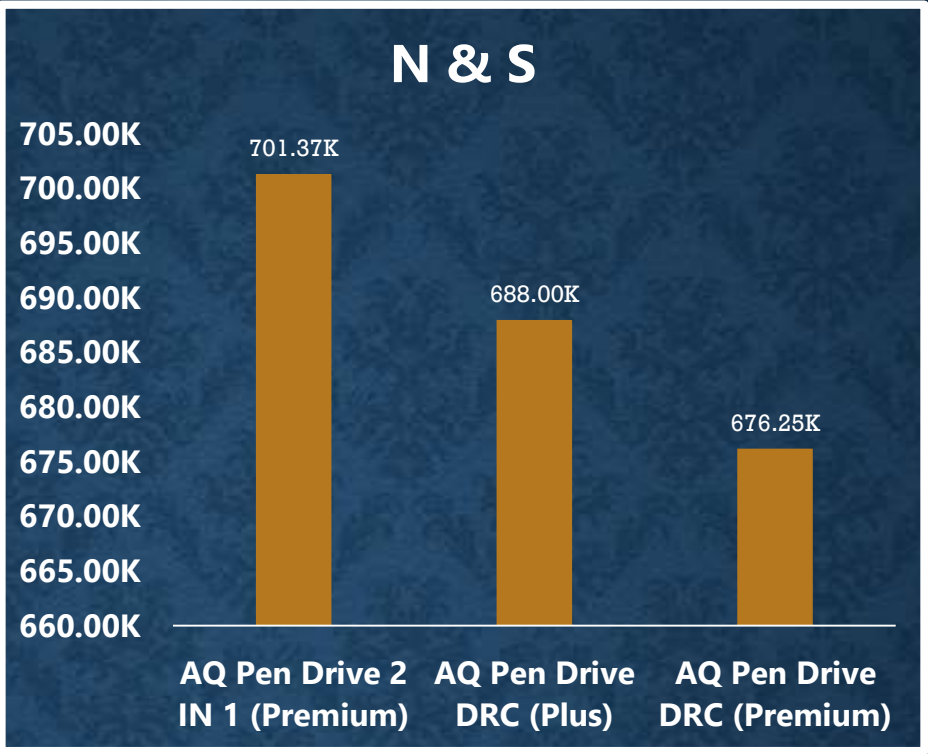
Input



```
WITH CTE AS (  
  SELECT  
    S.product_code,  
    P.product,  
    P.division,  
    SUM(S.sold_quantity) AS total_sold_quantity,  
    DENSE_RANK() OVER (PARTITION BY P.division ORDER BY SUM(S.sold_quantity) DESC) AS rank_order  
  FROM  
    dim_customer C  
  JOIN  
    fact_sales_monthly S ON C.customer_code = S.customer_code  
  JOIN  
    dim_product P ON P.product_code = S.product_code  
  WHERE  
    fiscal_year = "2021"  
  GROUP BY  
    S.product_code, P.product, P.division  
)  
SELECT  
  *  
FROM  
  CTE  
WHERE  
  rank_order <= 3;
```


Output

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



Insights:

- N & S Division:** Pen drives lead the top three sales spots.
- P & A Division:** Mice dominate the top three products.
- PC Division:** Personal laptops are the top sellers.



Recommendations:

1. Adjust Discount Strategies: Fine-tune discount rates to drive higher gross sales from customers.

2. Focus on Key Segments: Prioritize products in Desktops, Storage, and Networking to align with customer trends and industry demands.

3. Leverage Multi-Channel Marketing: Use a mix of digital, social media, and traditional platforms with strategic pricing and promotions to maximize customer engagement.

4. Act on Customer Feedback: Continuously gather customer insights to enhance offerings and improve the overall experience.

5. Invest in Sales Team Development: Provide ongoing training to sales teams to stay ahead of market trends and boost performance.

An open book is shown from a slightly elevated perspective, lying flat. The pages are white and feature dark blue text. The left page says 'Thank you for your time!' and the right page says 'Keep analyzing, innovating, and growing.' The book is set against a dark blue background with a subtle, repeating geometric pattern. A soft, circular light source from above creates a bright glow on the pages, with the light intensity fading towards the edges of the book and the background.

**Thank you
for your
time!**

**Keep
analyzing,
innovating,
and growing.**