tliq Hardwares

CONSUMER GOODS AD-HOC INSIGHTS

Presented by Waqas Ahmad

OUTLINE

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- Market Presence and Product Portfolio

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1. BACKGROUND

Our Company

AtliQ Hardwares

As a premier computer hardware manufacturer in India, AtliQ Hardwares is renowned for its high-quality products and market leadership.

Background

Our management has identified a critical gap: a lack of timely and insightful data to facilitate swift, informed decision-making.

Challenge

We face ten specific ad-hoc inquiries that require detailed analysis and insights.

Strategy

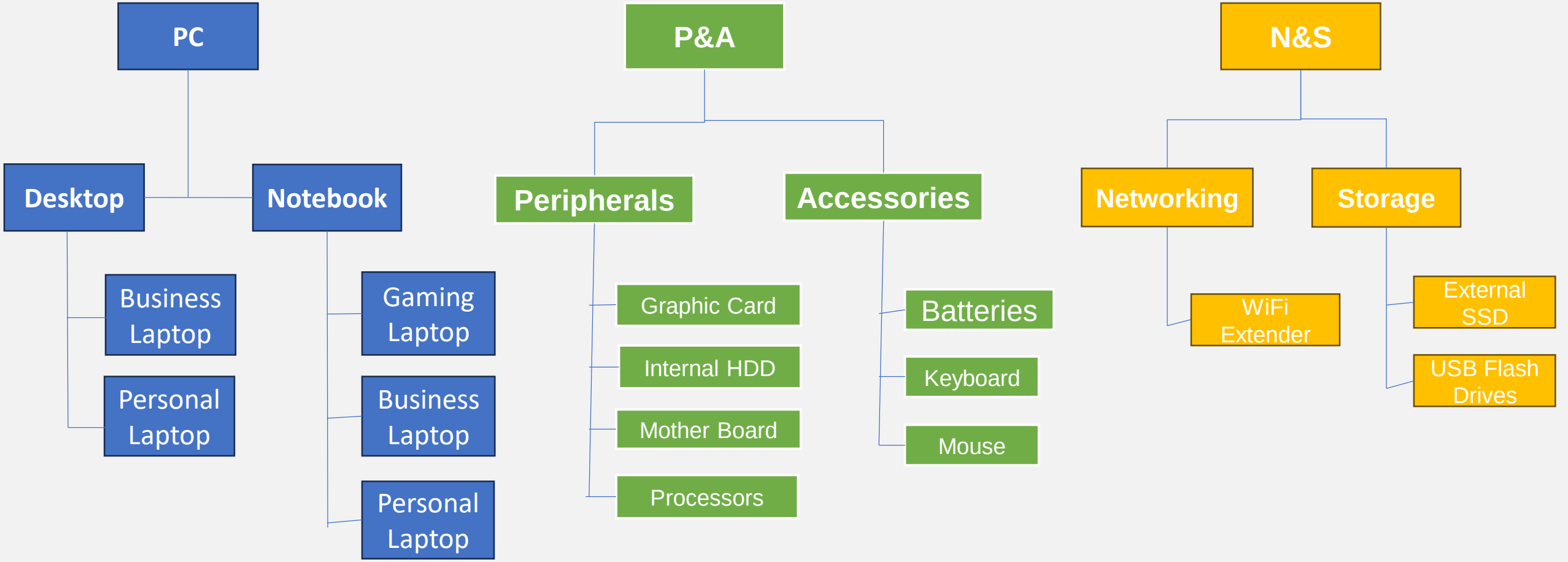
To address this, we will execute SQL queries to obtain the necessary data, transform these findings into visual representations, and deliver comprehensive insights to our executive team.

2. UNDERSTANDING ATLIQ'S BUSINESS

Market Presence and Product Portfolio

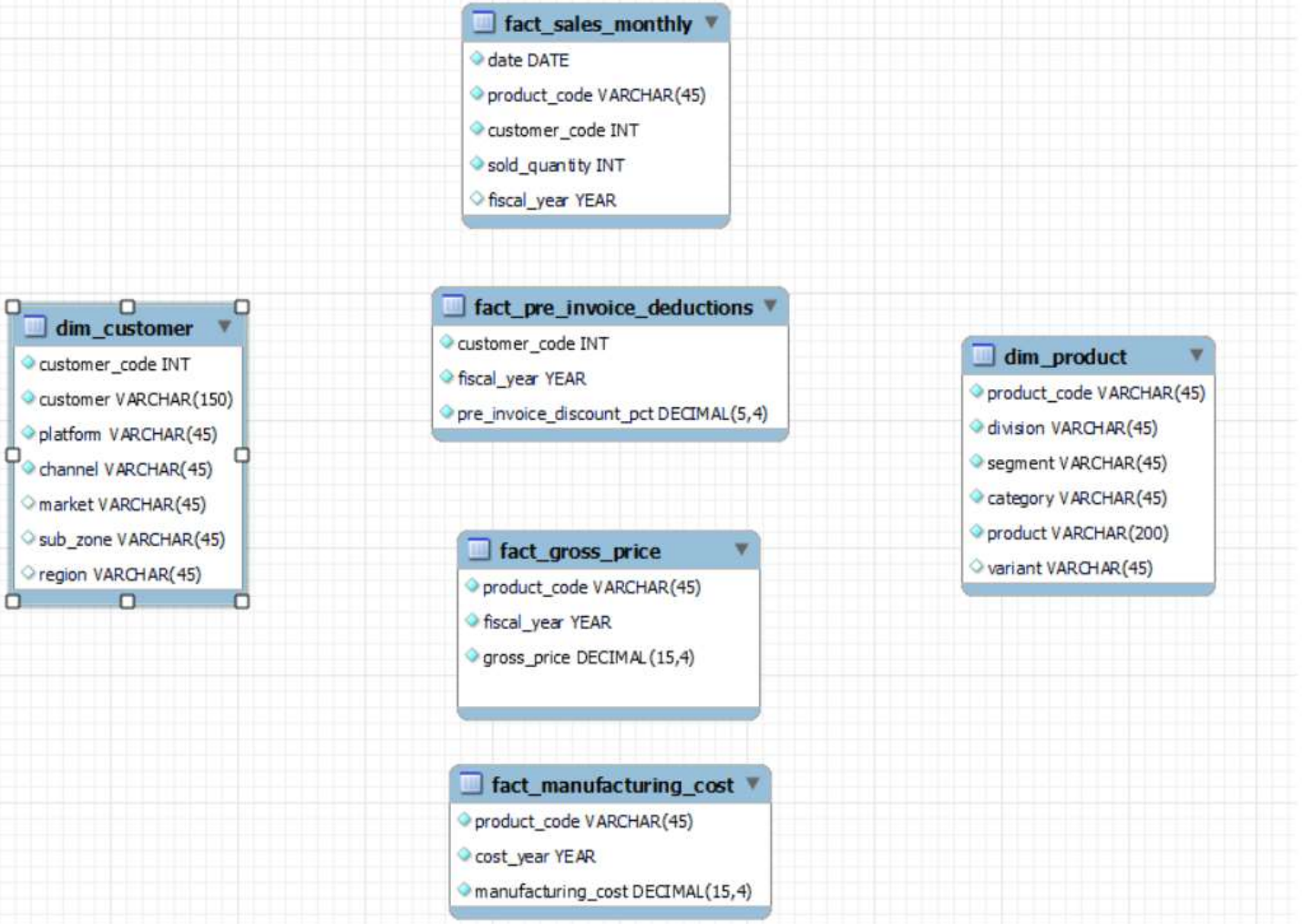
AtliQ's Markets

AtliQ's Product Portfolio



3.
DATA FAMILIARIZATION

The input data includes sales records for FY 2020 and FY 2021, along with various dimension tables such as customer details, product details, and others.



4.
AD-HOC INSIGHTS

Requests, Queried Results, Visualizations, and Insights

REQUEST 1:

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

Query :

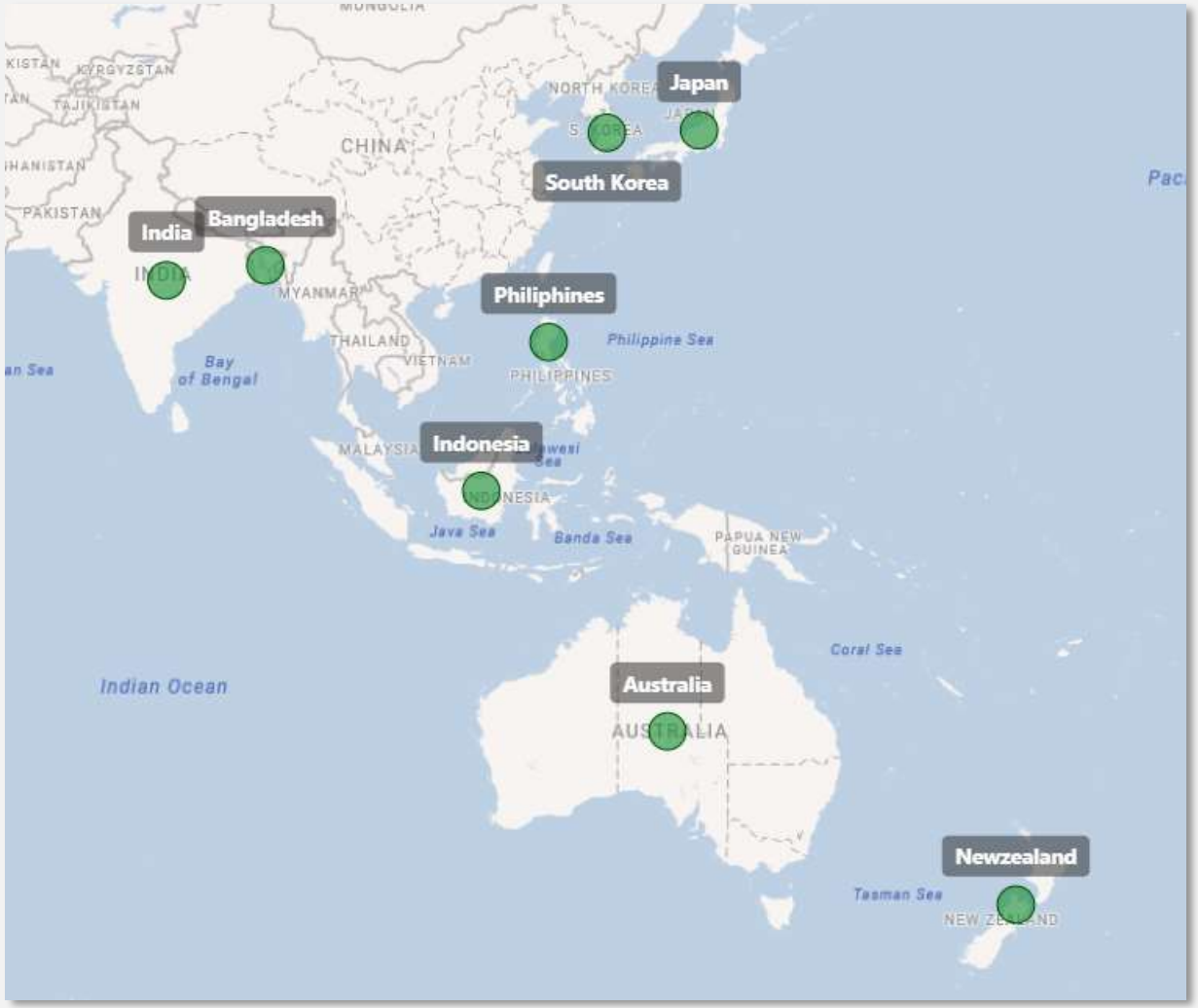
```
1• SELECT distinct market
2  from dim_customer
3  where customer = "Atliq Exclusive"
4  and region = "APAC"
```

Output :

market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

Insight :

In the APAC region, Atliq’s Exclusive store has established its presence in 8 major markets



REQUEST 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

Query :

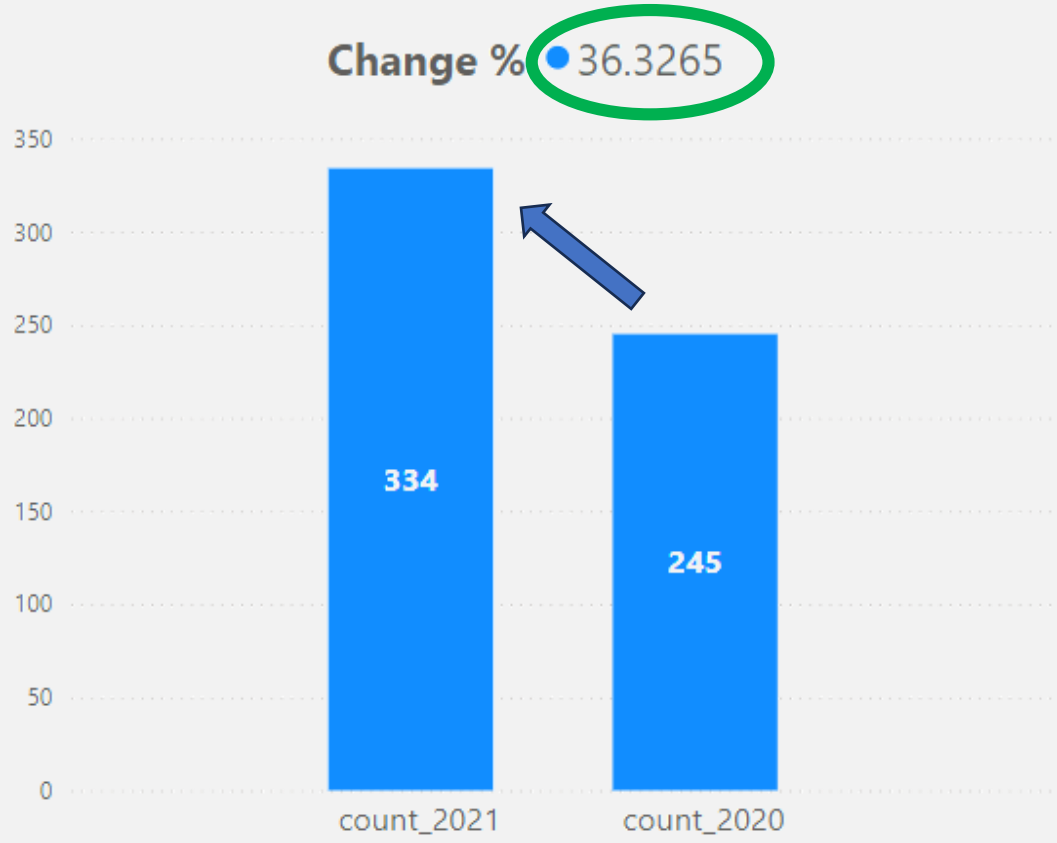
```sql
WITH products_2020 AS (
    SELECT DISTINCT product_code
    FROM fact_sales_monthly
    WHERE fiscal_year = 2020
),
products_2021 AS (
    SELECT DISTINCT product_code
    FROM fact_sales_monthly
    WHERE fiscal_year = 2021
),
counts AS (
    SELECT
        (SELECT COUNT(*) FROM products_2020) AS count_2020,
        (SELECT COUNT(*) FROM products_2021) AS count_2021
)
SELECT
    count_2020,
    count_2021,
    ((count_2021 - count_2020) / NULLIF(count_2020, 0) * 100) AS percentage_increase
FROM counts;
```

Output :

	count_2020	count_2021	percentage_increase
▶	245	334	36.3265

Insight :

The visual highlights a remarkable 36.33% increase in unique products, rising from 245 in 2020 to 334 in 2021, showcasing our successful expansion and enhanced product diversity.



REQUEST 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

Query :

```
1 •  SELECT segment, COUNT(DISTINCT product_code)
2    AS product_count
3    FROM dim_product
4    GROUP BY segment
5    ORDER BY product_count DESC
```

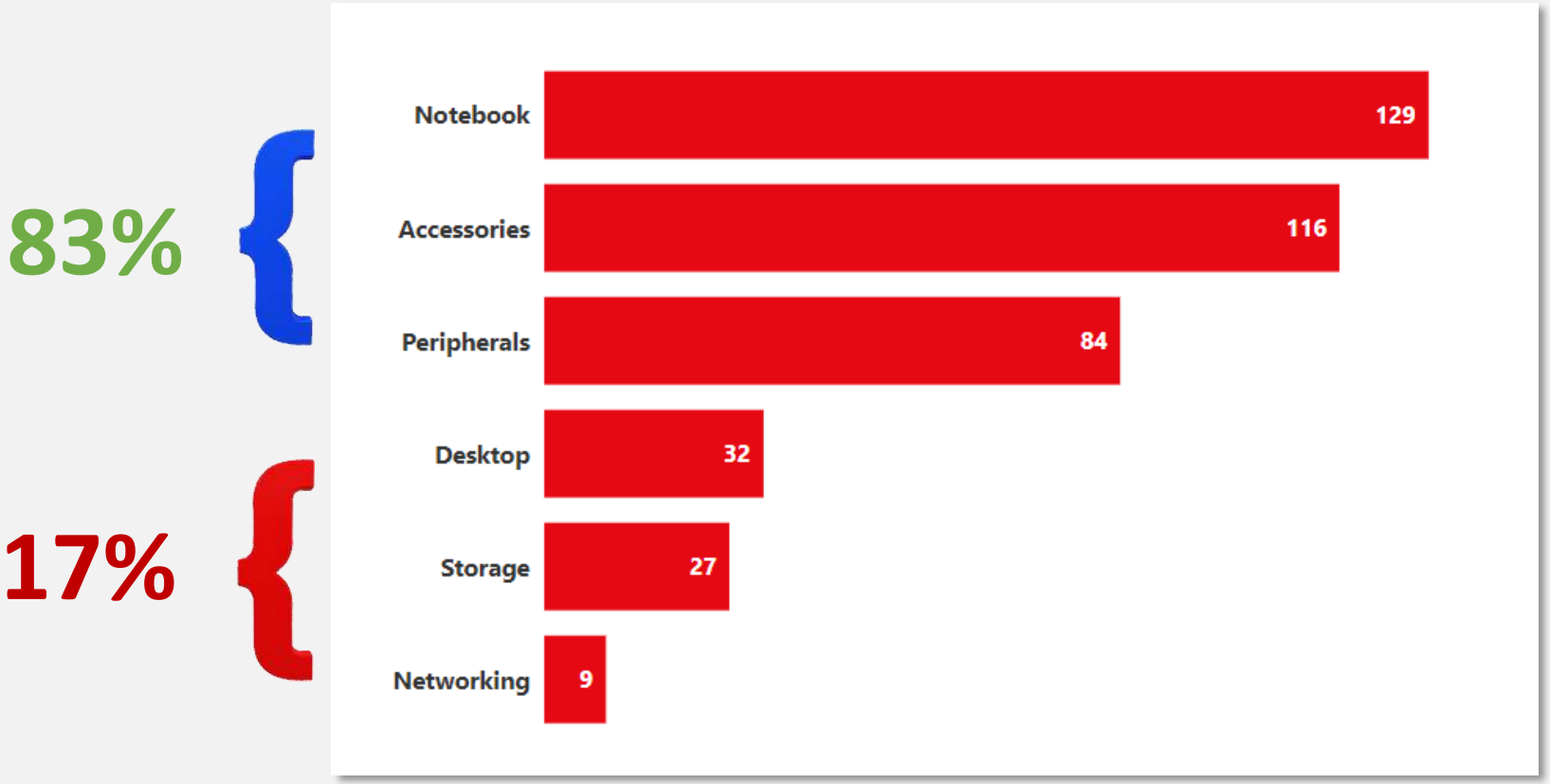
Output :

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

Insight :

- Growth Trends: The manufacturing segments for notebooks, accessories, and peripherals are experiencing substantial growth compared to those for desktops, storage, and networking.

- Dominant Segments: Notebooks, accessories, and peripherals together account for 83% of our total manufactured products, highlighting their dominant position in our production portfolio.



REQUEST 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

Query :

```sql
WITH cte1 AS (
    SELECT p.segment, COUNT(DISTINCT s.product_code) AS product_count_2020
    FROM fact_sales_monthly s
    JOIN dim_product p USING (product_code)
    WHERE s.fiscal_year = 2020
    GROUP BY p.segment
),
cte2 AS (
    SELECT p.segment, COUNT(DISTINCT s.product_code) AS product_count_2021
    FROM fact_sales_monthly s
    JOIN dim_product p USING (product_code)
    WHERE s.fiscal_year = 2021
    GROUP BY p.segment
)
SELECT
    c1.segment,
    c1.product_count_2020,
    c2.product_count_2021,
    (c2.product_count_2021 - c1.product_count_2020) AS difference
FROM cte1 c1
JOIN cte2 c2 ON c1.segment = c2.segment
ORDER BY difference DESC;
```

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 saw the biggest jump in production, up by 34 units!

- Storage and networking are growing slower, with just 5 and 3 more units produced respectively.

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

REQUEST 5:

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

Query :

```sql
SELECT
    m.product_code,
    p.product,
    m.manufacturing_cost
FROM dim_product p
JOIN fact_manufacturing_cost m
USING (product_code)
WHERE m.manufacturing_cost = (SELECT MAX(manufacturing_cost) FROM fact_manufacturing_cost)
   OR m.manufacturing_cost = (SELECT MIN(manufacturing_cost) FROM fact_manufacturing_cost)
ORDER BY m.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

Insight :

Product with
HIGHEST MANUFACTURING COST

$ 240.54

AQ HOME Allin1 Gen 2 (Plus 3)

Personal Desktop

Product with
LOWEST MANUFACTURING COST

$ 0.89

AQ Master Wired x1 Ms (Standard 1)

REQUEST 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

Query :

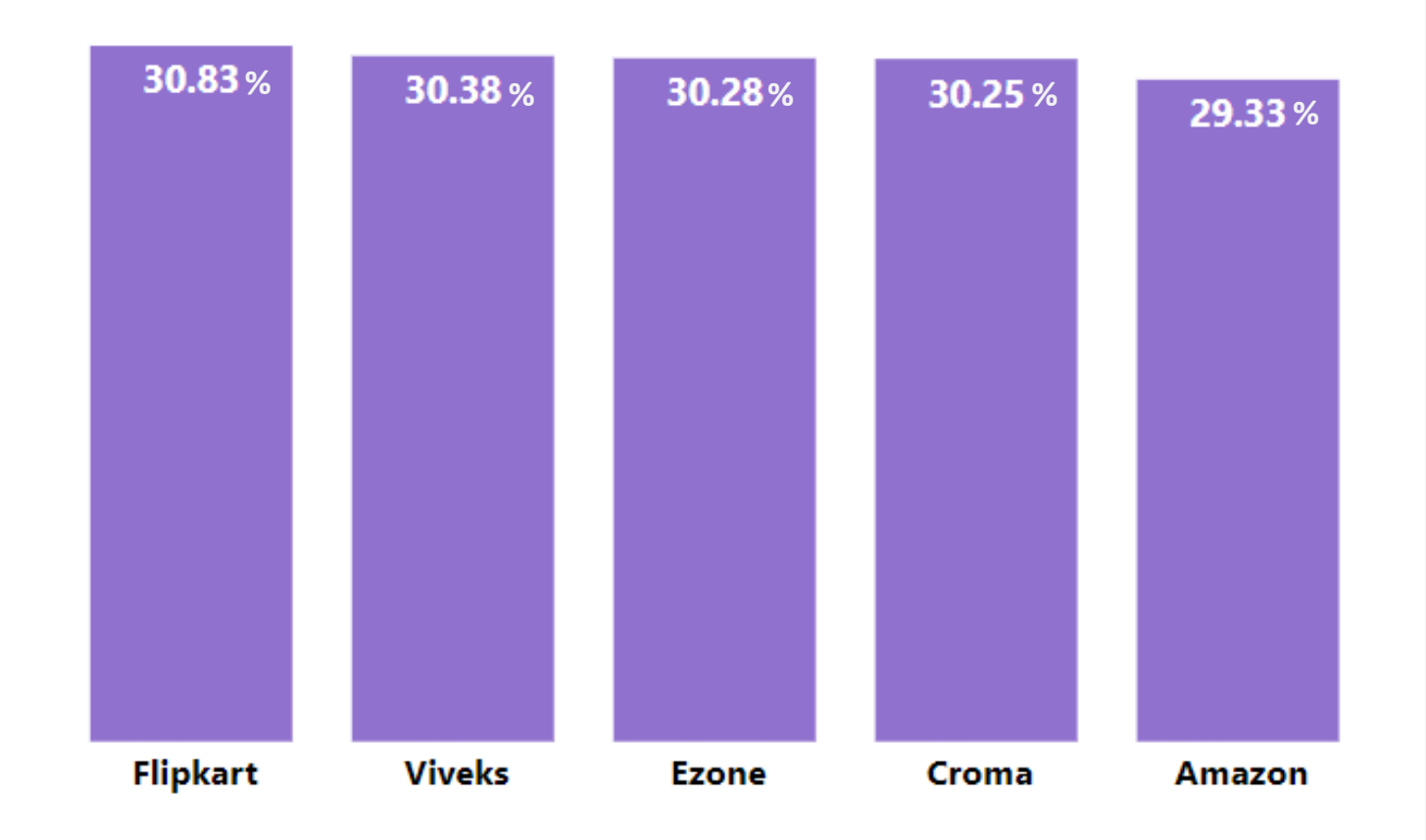
```sql
SELECT preinv.customer_code, c.customer,
ROUND(AVG(preinv.pre_invoice_discount_pct)* 100,2) AS avg_discount_pct
FROM fact_pre_invoice_deductions preinv
JOIN dim_customer c
USING (customer_code)
WHERE preinv.fiscal_year = 2021 AND c.market = 'India'
GROUP BY c.customer, preinv.customer_code
ORDER 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 :

Top 5 Indian customers
with highest average discount percentage for FY 2021



REQUEST 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

Query :

```sql
SELECT
    CONCAT(MONTHNAME(s.date), ' (', YEAR(s.date), ')') AS MONTH,
    s.fiscal_year AS YEAR,
    CONCAT(ROUND(SUM(g.gross_price * s.sold_quantity) / 1000000, 2), 'M') AS Gross_Sales_Amount
FROM fact_gross_price g
JOIN fact_sales_monthly s
USING (product_code, fiscal_year)
JOIN dim_customer c
USING (customer_code)
WHERE c.customer = "Atliq Exclusive"
GROUP BY MONTH, YEAR
ORDER BY YEAR;
```

Output :

MONTH	YEAR	Gross_Sales_Amount
September (2019)	2020	4.50M
October (2019)	2020	5.14M
November (2019)	2020	7.52M
December (2019)	2020	4.83M
January (2020)	2020	4.74M
February (2020)	2020	4.00M
March (2020)	2020	0.38M
April (2020)	2020	0.40M
May (2020)	2020	0.78M
June (2020)	2020	1.70M
July (2020)	2020	2.55M
August (2020)	2020	2.79M
September (2020)	2021	12.35M
October (2020)	2021	13.22M
November (2020)	2021	20.46M
December (2020)	2021	12.94M
January (2021)	2021	12.40M
February (2021)	2021	10.13M
March (2021)	2021	12.14M
April (2021)	2021	7.31M
May (2021)	2021	12.15M
June (2021)	2021	9.82M
July (2021)	2021	12.09M
August (2021)	2021	7.18M

Insight :

→ **Peak Sales:** AtliQ Exclusive experienced its highest sales in November 2020

→ **Lowest Sales:** March 2020 recorded the lowest sales figures

→ **Impact of COVID-19:** The decline in sales from March to August 2020 was attributed to the repercussions of the COVID-19 pandemic.

→ **Recovery and Resilience:** Sales have steadily rebounded after the pandemic, showcasing resilience and surpassing the levels observed in 2020

MONTH	YEAR	Gross_Sales_Amount
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August (2020)	2020	2.79M
September (2020)	2021	12.35M
October (2020)	2021	13.22M
November (2020)	2021	20.46M
December (2020)	2021	12.94M
January (2021)	2021	12.40M
February (2021)	2021	10.13M
March (2021)	2021	12.14M
April (2021)	2021	7.31M
May (2021)	2021	12.15M
June (2021)	2021	9.82M
July (2021)	2021	12.09M
August (2021)	2021	7.18M

REQUEST 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

Query :

```sql
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 Quarters,
    CONCAT(ROUND(SUM(sold_quantity) / 1000000, 2), 'M') AS Total_sold_quantity_mln
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY Quarters
ORDER BY Total_sold_quantity_mln DESC;
```

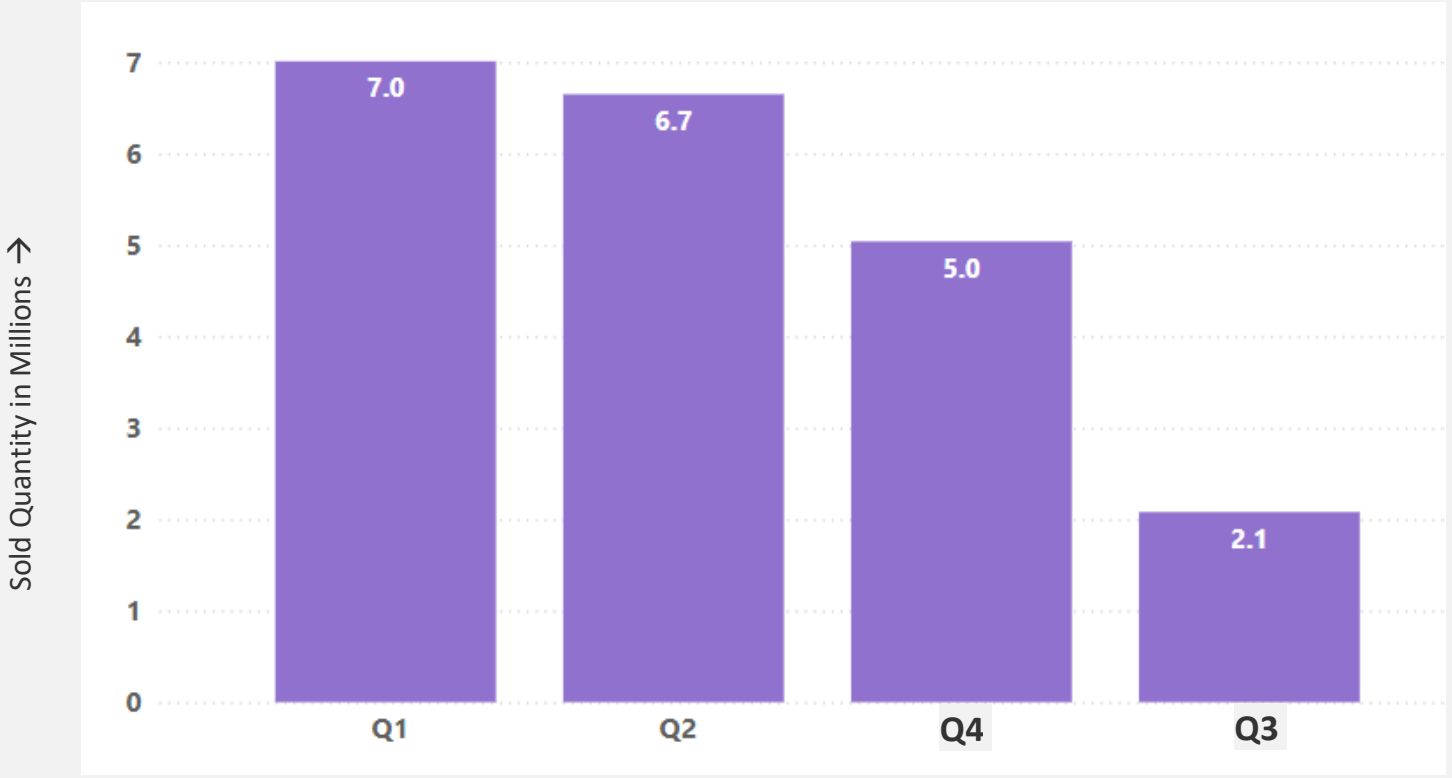
Output :

Quarters	Total_sold_quantity_mln
Q1	7.01M
Q2	6.65M
Q4	5.04M
Q3	2.08M

Insight :

This complements the previous insight regarding the impact of COVID-19 on our sales.
The sold quantity dropped to 2.1 million units in Q3 of FY 2020, encompassing March, April, and May, when the pandemic was at its peak.

However, we began to recover quite early, even as the pandemic continued. This early recovery in Q4 can likely be attributed to the increased demand for hardware such as desktops and notebooks, as many students started or continued their coursework online. This period saw a significant surge in demand for computer accessories.



REQUEST 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

Query :

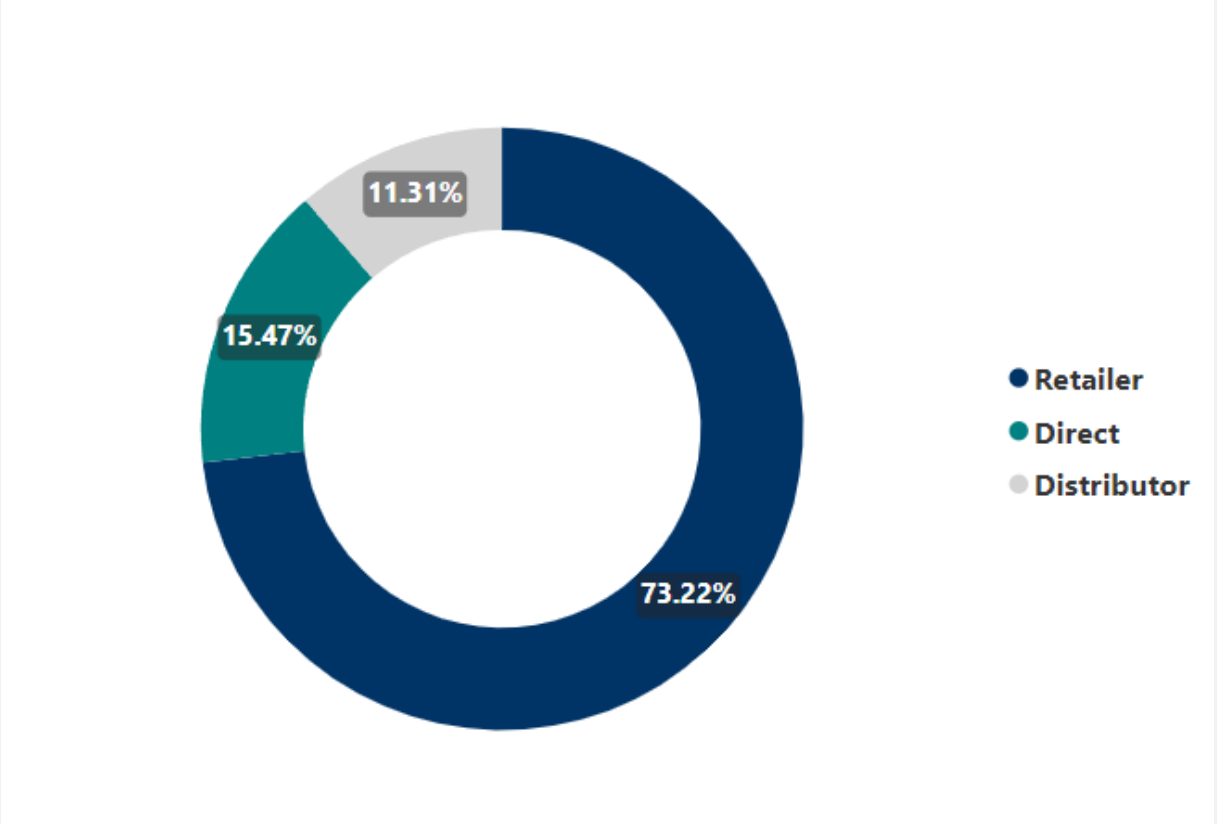
```sql
WITH cte AS (
      SELECT c.channel,sum(s.sold_quantity * g.gross_price) AS total_sales
  FROM
  fact_sales_monthly s
  JOIN fact_gross_price g ON s.product_code = g.product_code
  JOIN dim_customer c ON s.customer_code = c.customer_code
  WHERE s.fiscal_year= 2021
  GROUP BY c.channel
  ORDER BY total_sales DESC
)
SELECT
  channel,
  round(total_sales/1000000,2) AS gross_sales_in_millions,
  round(total_sales/(sum(total_sales) OVER())*100,2) AS percentage
FROM cte;
```

Output :

channel	gross_sales_in_millions	percentage
Retailer	1924.17	73.22
Direct	406.69	15.47
Distributor	297.18	11.31

Insight :

The majority of our sales, **75%** of the total, were made through retailers.
Only a small percentage occurred through direct and distributor channels.



REQUEST 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

Query :

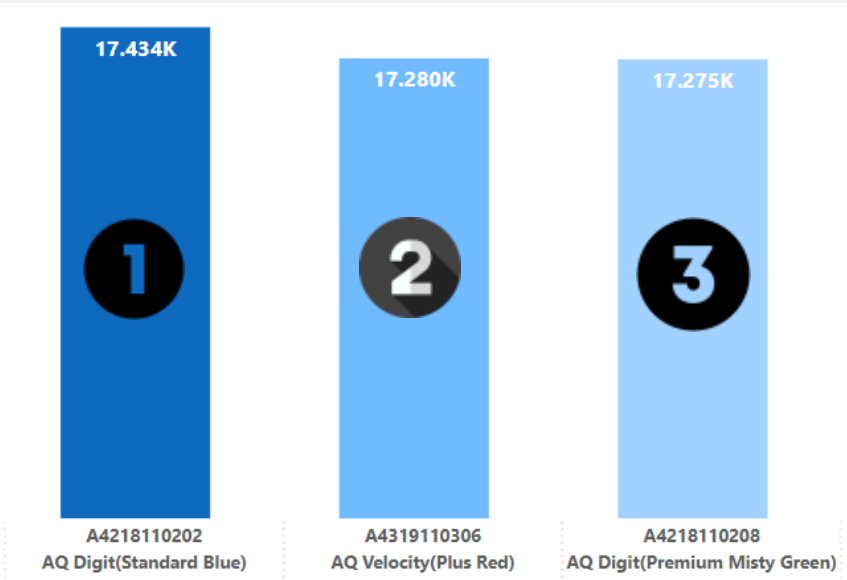
```sql
WITH cte AS (
    SELECT
        p.division,
        s.product_code,
        CONCAT(p.product, '(', p.variant, ')') AS product,
        SUM(s.sold_quantity) AS total_sold_quantity,
        RANK() OVER (PARTITION BY p.division ORDER BY SUM(s.sold_quantity) DESC) AS rank_order
    FROM fact_sales_monthly s
    JOIN dim_product p ON s.product_code = p.product_code
    WHERE s.fiscal_year = 2021
    GROUP BY p.division, s.product_code, p.product, p.variant
)
SELECT *
FROM cte
WHERE rank_order IN (1, 2, 3);
```

Output :

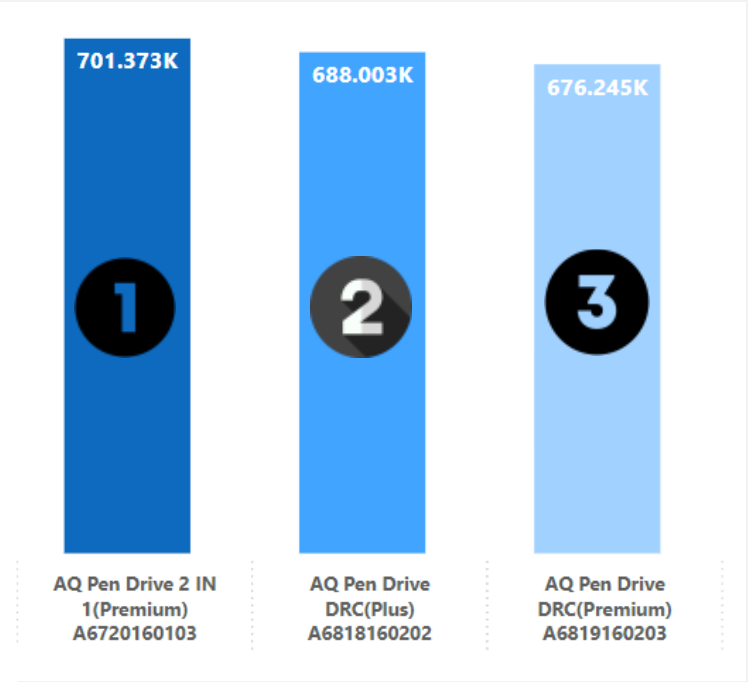
division	product_code	product	total_sold_quantity	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1(Premium)	701373	1
N & S	A6818160202	AQ Pen Drive DRC(Plus)	688003	2
N & S	A6819160203	AQ Pen Drive DRC(Premium)	676245	3
P & A	A2319150302	AQ Gamers Ms(Standard 2)	428498	1
P & A	A2520150501	AQ Maxima Ms(Standard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

Insight :

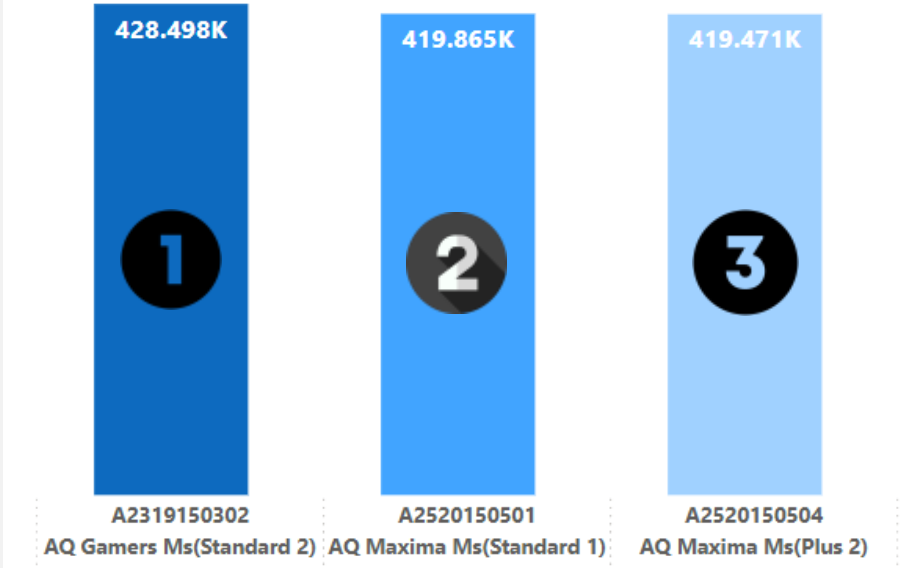
Division : PC



Division : N & S



Division : P & A



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THANK YOU