

Atliq Hardware

**Consumer Goods
AD-Hoc INSIGHTS**

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About Company

AtliQ Hardwares (imaginary company) is one of the leading computer hardware producers in India and well expanded in other countries too. Specializing in the sale of computers and accessories with a strategic presence across APAC, LATAM, NA and EU.

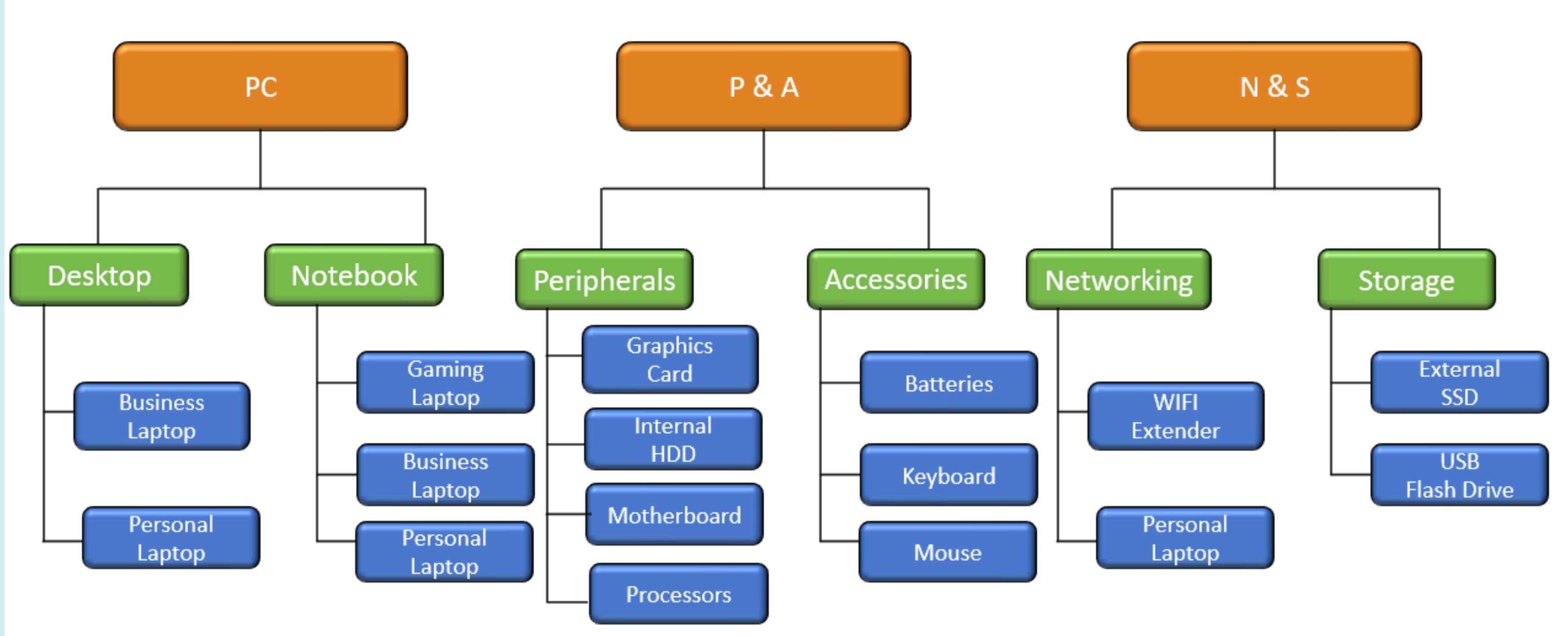


Problem Statement

- The management identified a lack of sufficient insights to enable quick and smart data-informed decisions.
- To address this, they plan to expand the data analytics team by recruiting several junior data analysts.
- Tony Sharma, the Director of Data Analytics, emphasized hiring candidates proficient in both technical and soft skills.
- A SQL challenge was organized to evaluate candidates' abilities in these key areas.



Product Line Structure Overview



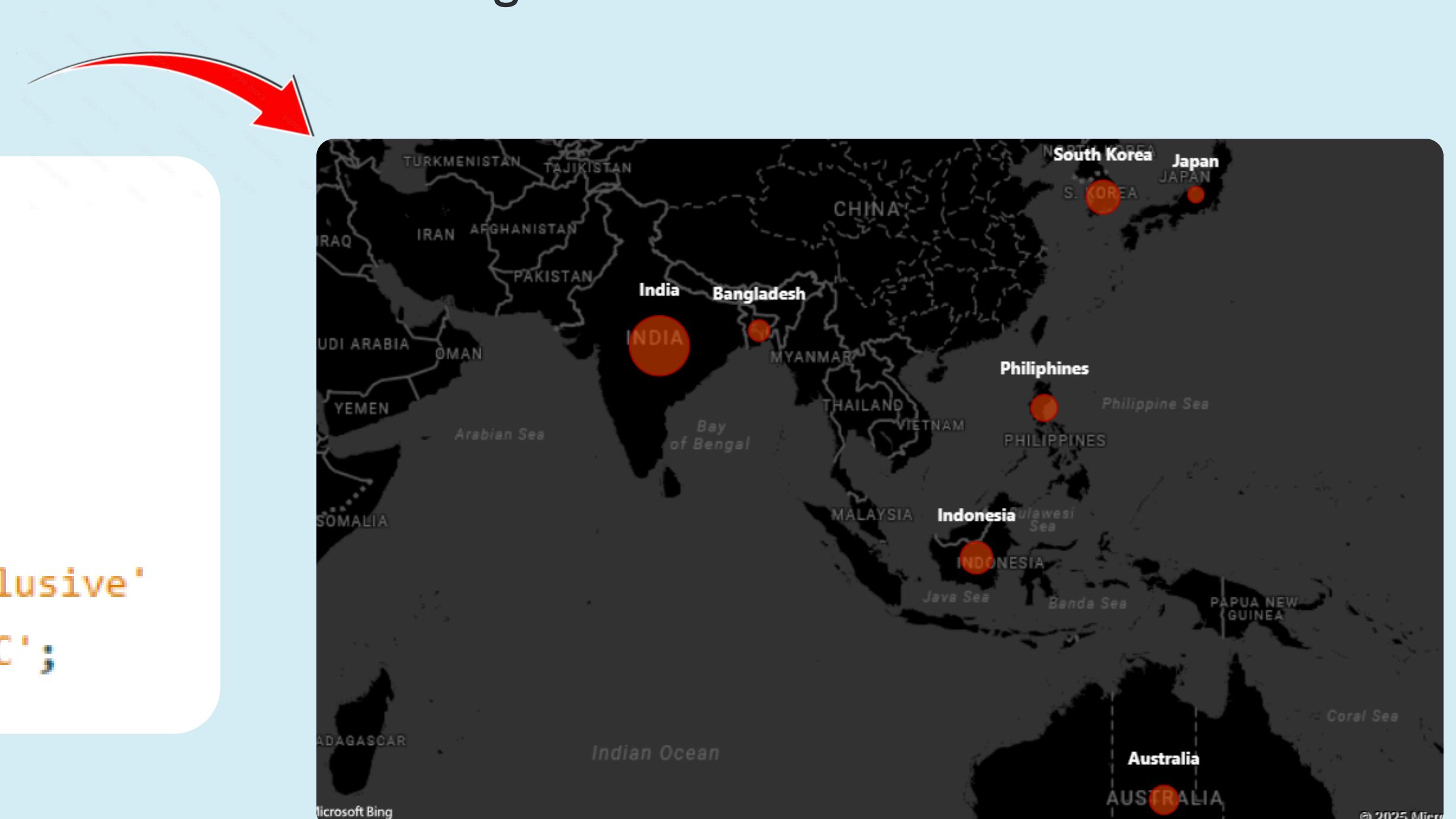
Fiscal Year : September to August

Sep-2019 to Aug-2020 = FY 2020

Sep-2020 to Aug-2021 = FY 2021

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

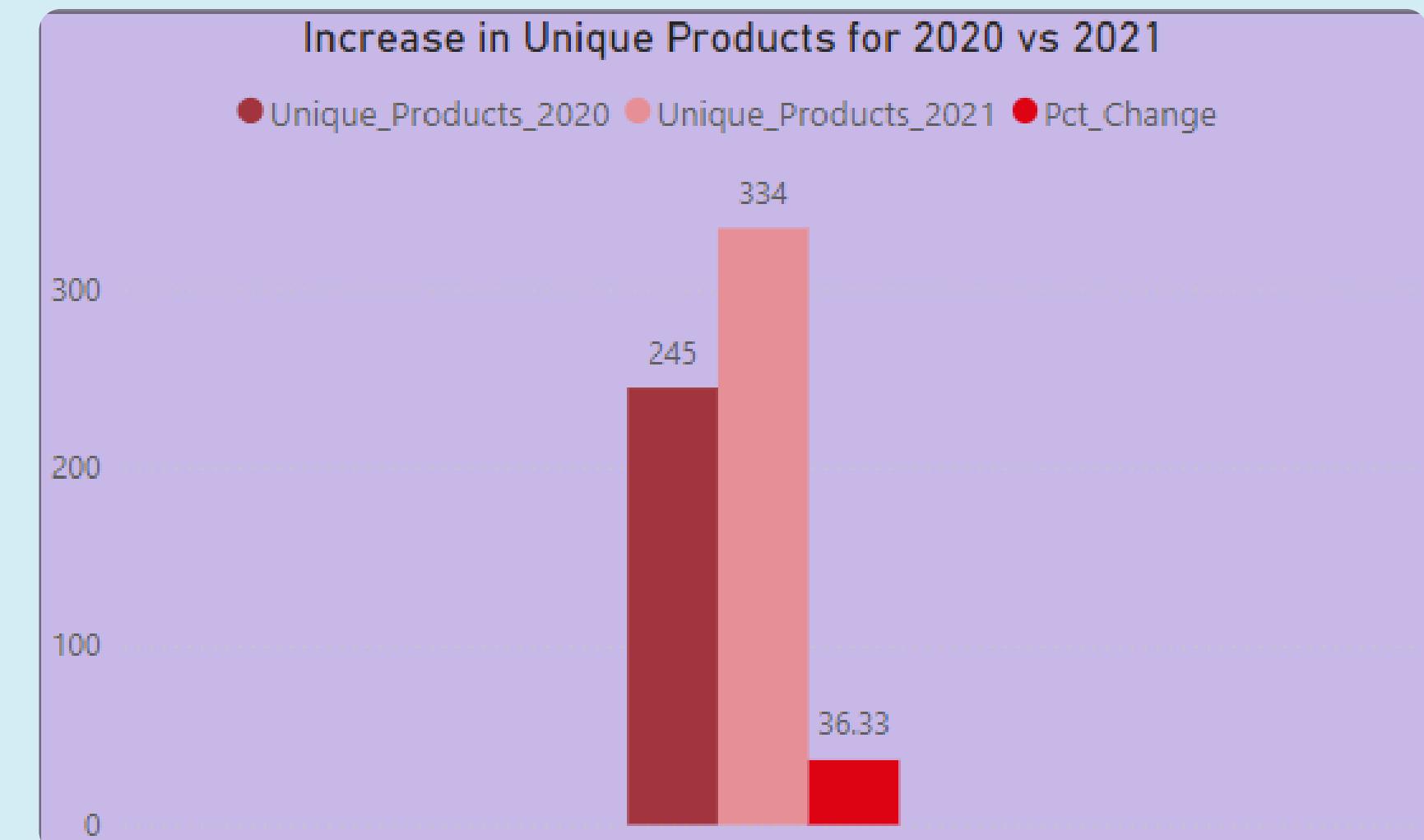
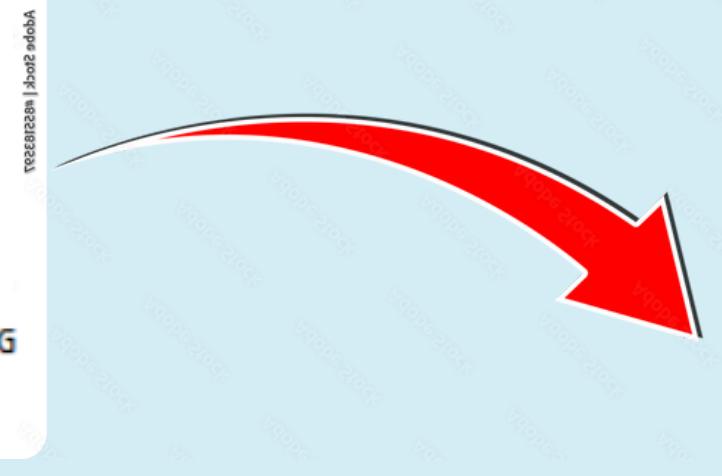
```
1  
2  
3 • SELECT DISTINCT  
4     market  
5 FROM  
6     dim_customer  
7 WHERE  
8     customer = 'Atliq Exclusive'  
9     AND region = 'APAC';  
10
```



INSIGHTS : AtliQ Hardware operates in 8 countries within the APAC region, most gross sales coming from India and least gross sales from Japan

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

```
• WITH unique_product_2020 AS (
    SELECT COUNT(DISTINCT PRODUCT_CODE) AS unique_products_2020 FROM FACT_SALES_MONTHLY
    WHERE FISCAL_YEAR = 2020
),
unique_product_2021 AS (
    SELECT COUNT(DISTINCT PRODUCT_CODE) AS unique_products_2021 FROM FACT_SALES_MONTHLY
    WHERE FISCAL_YEAR = 2021)
SELECT unique_products_2020, unique_products_2021,
CONCAT(ROUND(((unique_products_2021-unique_products_2020)/unique_products_2020)*100,2), "%") AS PCT_CHG
FROM unique_product_2020, unique_product_2021;
```



Insights

AtliQ Hardware experienced a 36.33% increase in unique products in 2021 compared to 2020, demonstrating remarkable year-over-year growth in product variety.

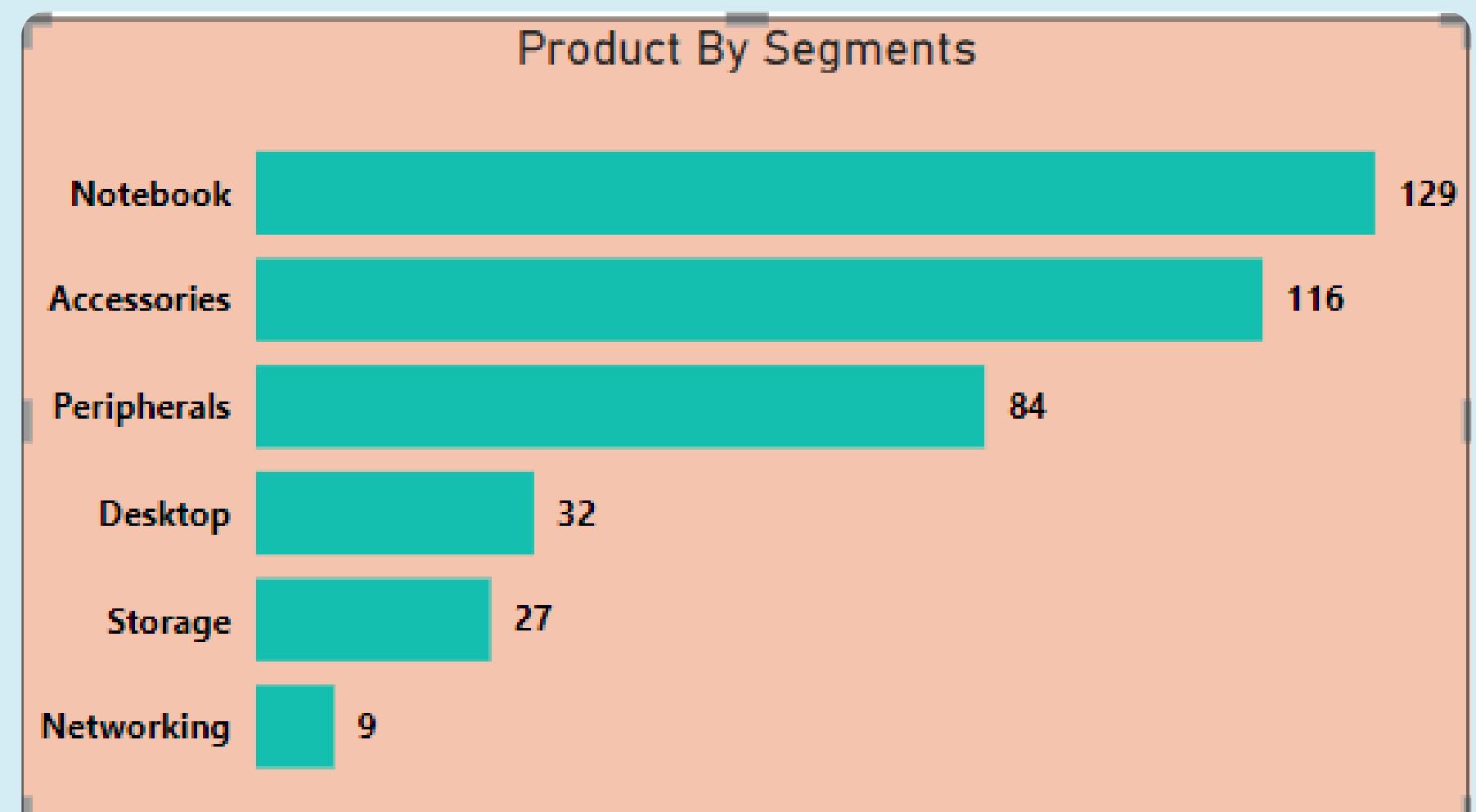
3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields, segment, product_count

• **SELECT**

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

Result Grid | Filter Rows:

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

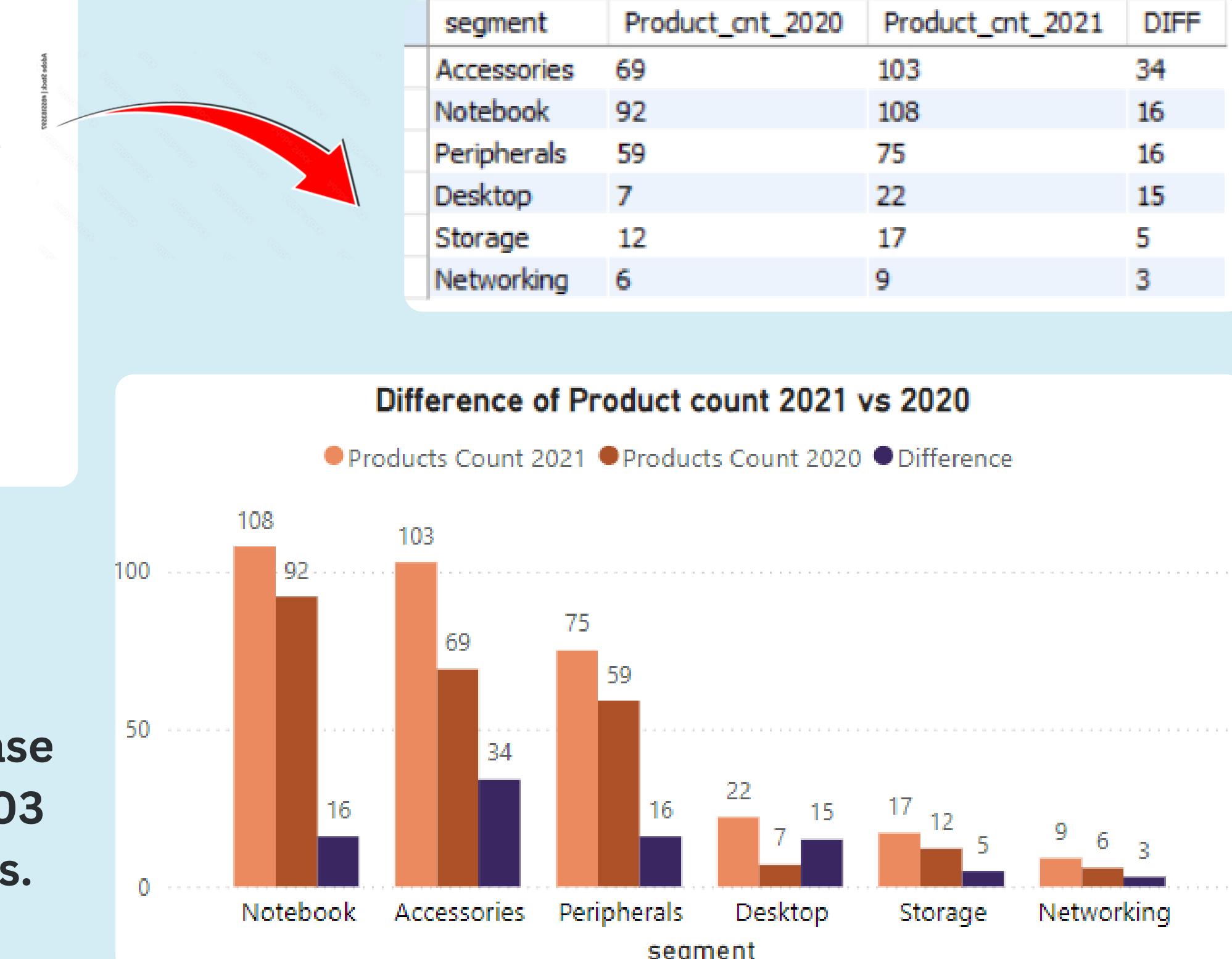


4. Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields, segment product_count_2020 product_count_2021 difference

```
WITH cte1 AS (SELECT segment, count(distinct p.product_code) as Product_cnt_2020
  FROM dim_product p
  JOIN fact_sales_monthly s
    ON p.product_code = s.product_code
   WHERE fiscal_year = 2020
  GROUP BY segment),
cte2 AS ( SELECT segment, count(distinct p.product_code) as Product_cnt_2021
  FROM dim_product p
  JOIN fact_sales_monthly s
    ON p.product_code = s.product_code
   WHERE fiscal_year = 2021
  GROUP BY segment)
SELECT cte1.segment, Product_cnt_2020, Product_cnt_2021,
       (Product_cnt_2021 - Product_cnt_2020) AS DIFF
  FROM cte1 JOIN cte2 ON cte1.segment = cte2.segment ORDER BY DIFF desc;
```

Insight:

The Accessories segment saw the largest increase in unique products, rising from 69 in 2020 to 103 in 2021, resulting in a difference of 34 products.



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

```
WITH cte AS (
    SELECT
        MAX(manufacturing_cost) AS max_cost,
        MIN(manufacturing_cost) AS min_cost
    FROM
        fact_manufacturing_cost
)
SELECT
    p.product_code,
    p.product, p.category,
    m.manufacturing_cost
FROM
    dim_product p
JOIN
    fact_manufacturing_cost m
ON p.product_code = m.product_code
CROSS JOIN
    cte
WHERE
    m.manufacturing_cost IN (cte.max_cost, cte.min_cost)
ORDER BY manufacturing_cost desc;
```

\$ 0.89



\$ 240.55



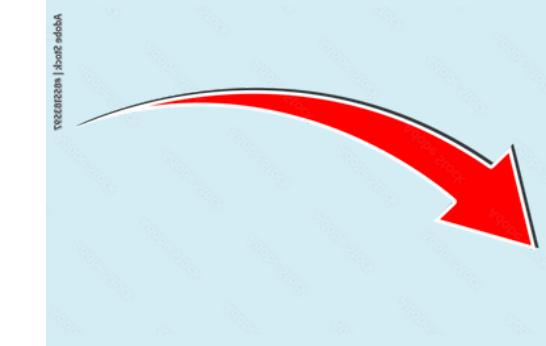
AQ HOME Allin1 Gen 2

AQ Master
wired x1 Ms

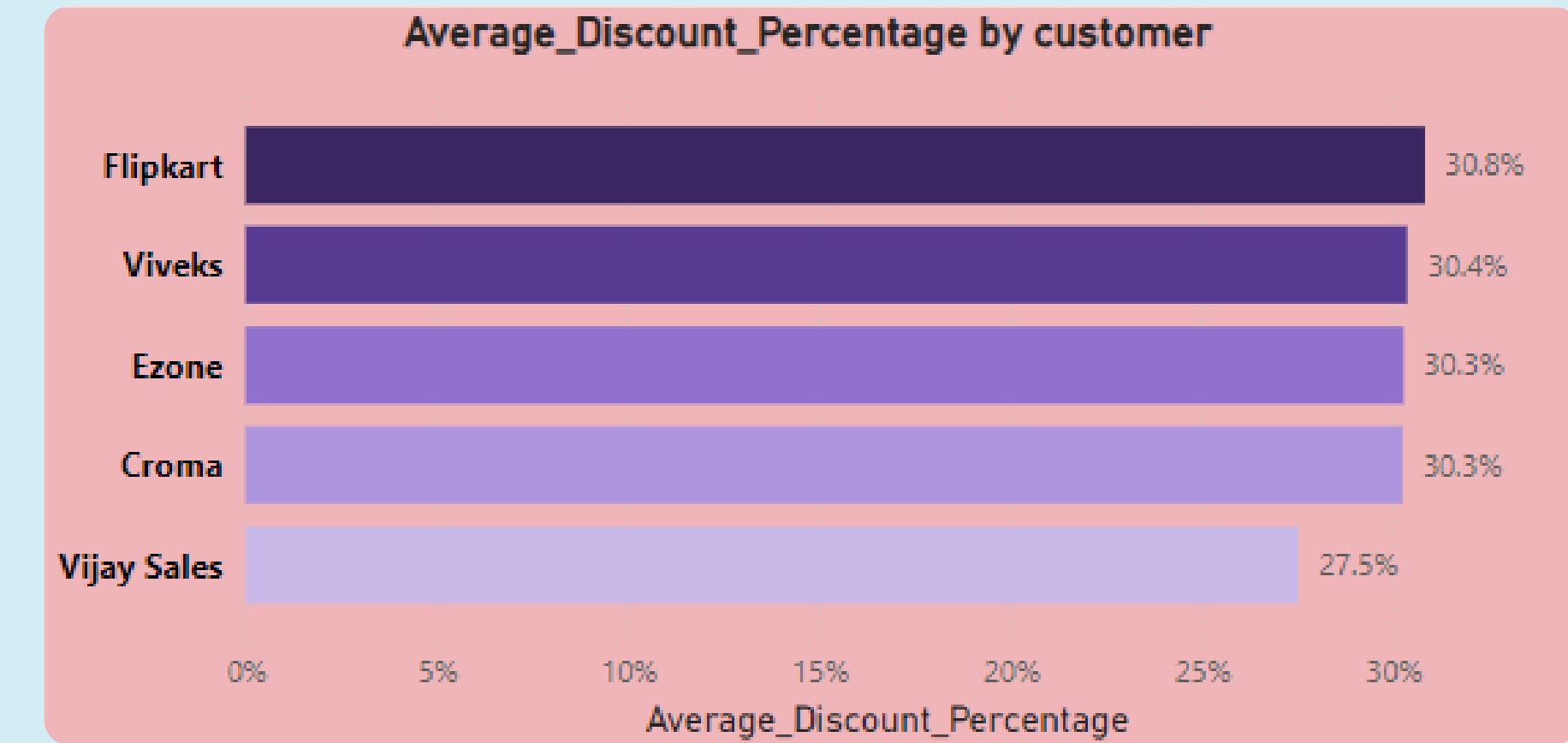
product_code	product	category	manufacturing_cost
A6120110206	AQ HOME Allin1 Gen 2	Personal Desktop	240.5364
A2118150101	AQ Master wired x1 Ms	Mouse	0.8920

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, a)customer_code b)customer c)average_discount_percentage

```
SELECT c.customer, c.customer_code,
       CONCAT(ROUND(AVG(pre.pre_invoice_discount_pct*100),2),"") AS average_discount_percentage
  FROM fact_pre_invoice_deductions pre
  JOIN dim_customer c ON
    pre.customer_code = c.customer_code
 WHERE c.market = "INDIA" AND pre.fiscal_year = 2021
 GROUP BY c.customer, c.customer_code
 ORDER BY AVG(pre.pre_invoice_discount_pct*100) DESC
 LIMIT 5 ;
```



INSIGHTS:
The top 5 customers in India are led by Flipkart, which provides the highest average discount and significantly contributes to sales, while Vijay Sales ranks lowest in terms of contribution.



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: a)Month b)Year c)Gross sales Amount

QUERY

```

SELECT
    MONTHNAME(s.date) AS Month,
    s.fiscal_year,
    CONCAT(ROUND(SUM((s.sold_quantity * g.gross_price)) / 1000000,
                  2),
           ' mln') AS Gross_sales_Amount
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
    c.customer = 'ATLIQ EXCLUSIVE'
GROUP BY MONTHNAME(s.date), s.fiscal_year
ORDER BY s.fiscal_year;

```

OUTPUT

Month	fiscal_year	Gross_sales_Amount
September	2020	9.09 mln
October	2020	10.38 mln
November	2020	15.23 mln
December	2020	9.76 mln
January	2020	9.58 mln
February	2020	8.08 mln
March	2020	0.77 mln
April	2020	0.80 mln
May	2020	1.59 mln
June	2020	3.43 mln
July	2020	5.15 mln
August	2020	5.64 mln
September	2021	19.53 mln
October	2021	21.02 mln
November	2021	32.25 mln
December	2021	20.41 mln
January	2021	19.57 mln
February	2021	15.99 mln
March	2021	19.15 mln
April	2021	11.48 mln
May	2021	19.20 mln
June	2021	15.46 mln
July	2021	19.04 mln
August	2021	11.32 mln

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

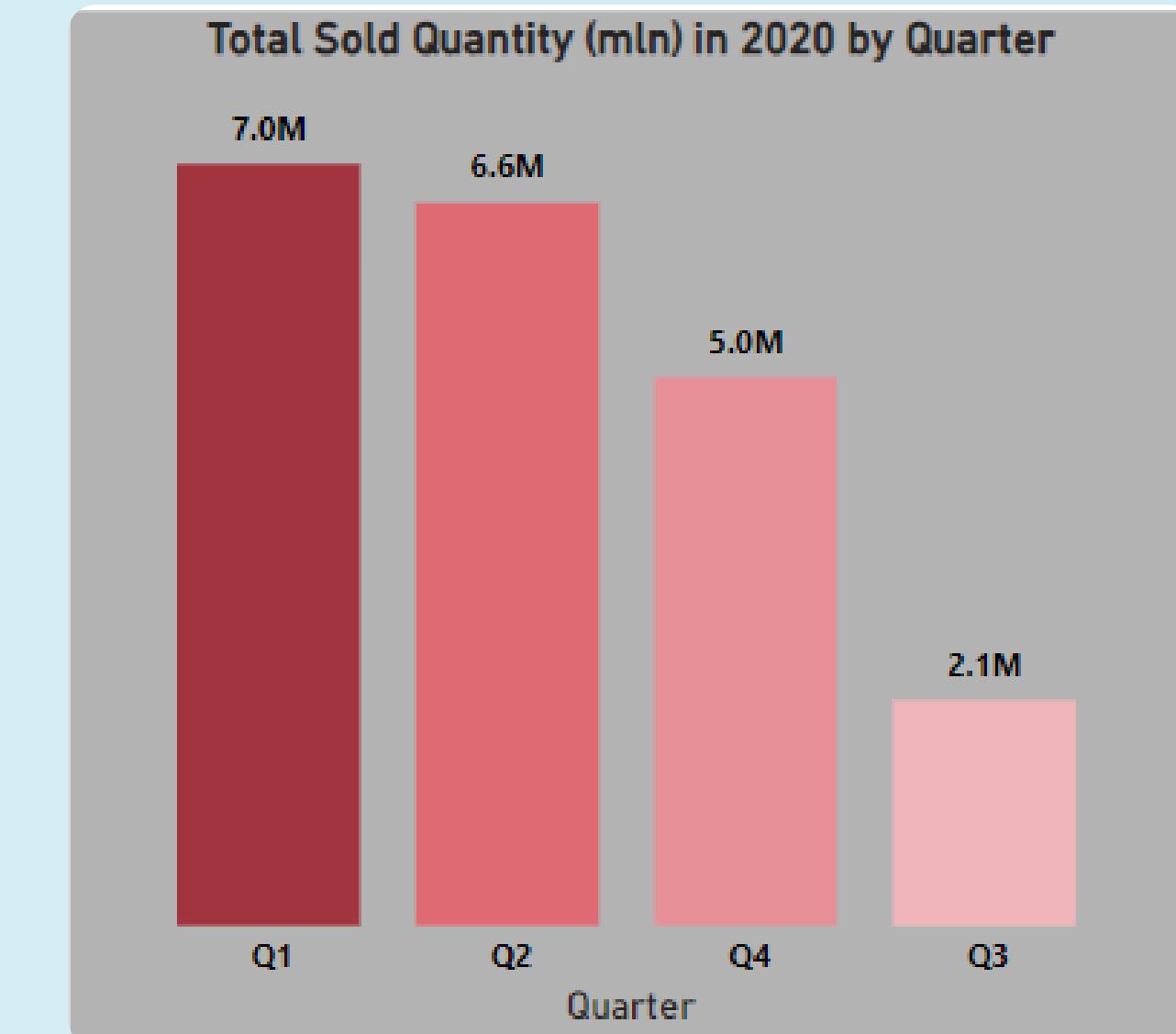
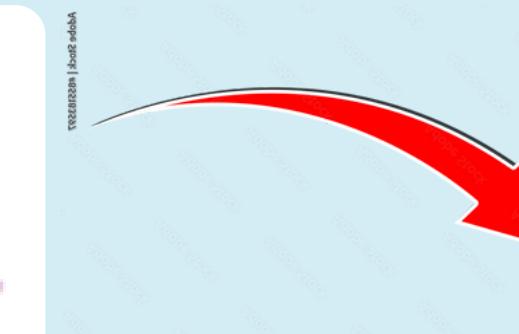
```

SELECT
CASE
    WHEN MONTH(DATE) IN (9 , 10, 11) THEN 'Q1'
    WHEN MONTH(DATE) IN (12 , 01, 02) THEN 'Q2'
    WHEN MONTH(DATE) IN (03 , 04, 05) THEN 'Q3'
    WHEN MONTH(DATE) IN (06 , 07, 08) THEN 'Q4'
END AS QUARTERS,
CONCAT(ROUND(SUM(SOLD_QUANTITY) / 1000000, 2),
       ' mln') AS TOTAL_SOLD_QUANTITY
FROM
    FACT_SALES_MONTHLY
WHERE
    FISCAL_YEAR = 2020
GROUP BY QUARTERS
ORDER BY TOTAL_SOLD_QUANTITY DESC;

```

Insight :

In 2020, Q1 recorded the highest sold quantity, indicating that the beginning of the year had the strongest sales performance. Conversely, Q3 had the lowest sold quantity, highlighting a significant decline during that period.

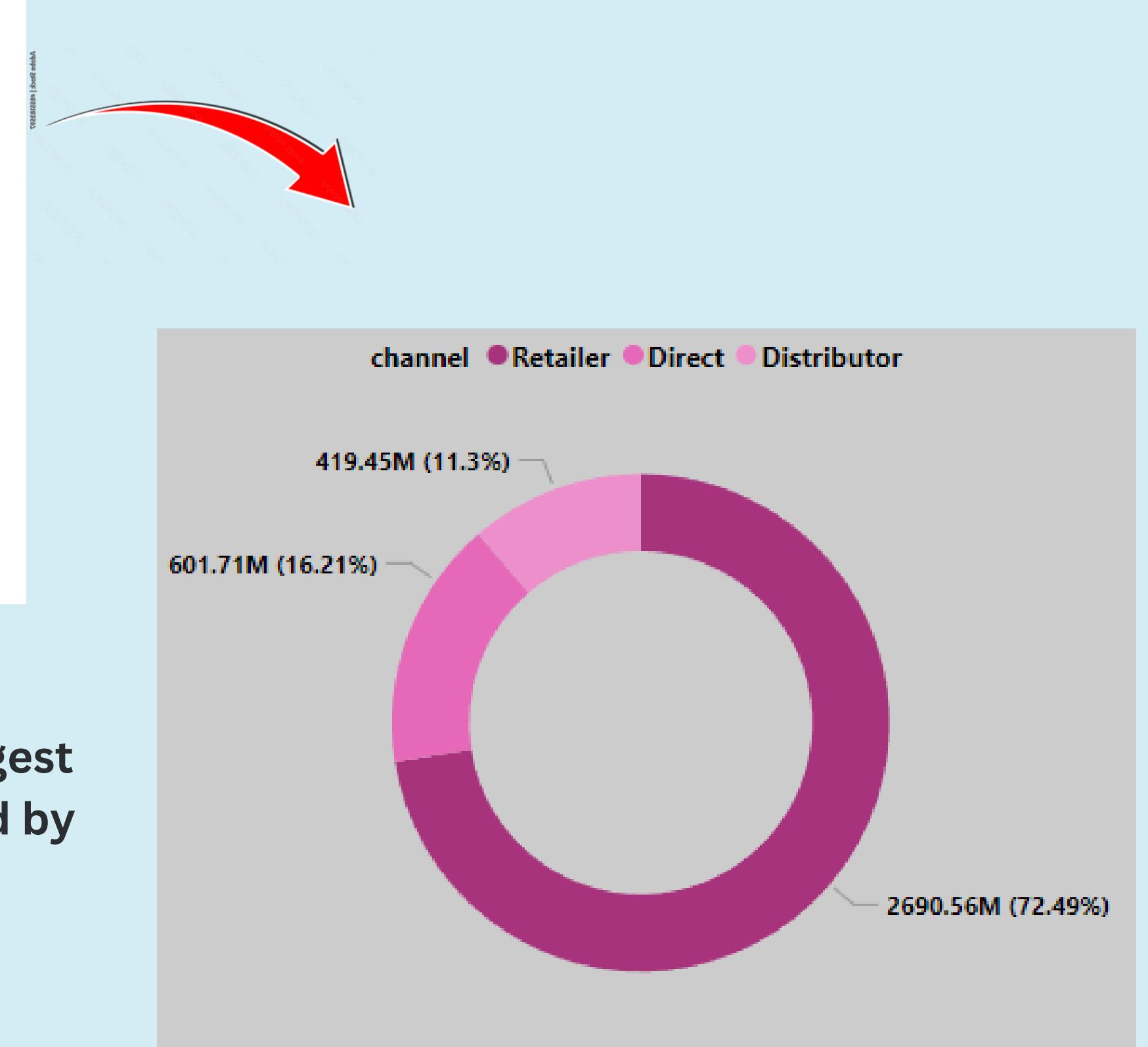


QUARTERS	TOTAL_SOLD_QUANTITY
Q1	7.01 mln
Q2	6.65 mln
Q4	5.04 mln
Q3	2.08 mln

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, a)channel
b)gross_sales_mln c)percentage

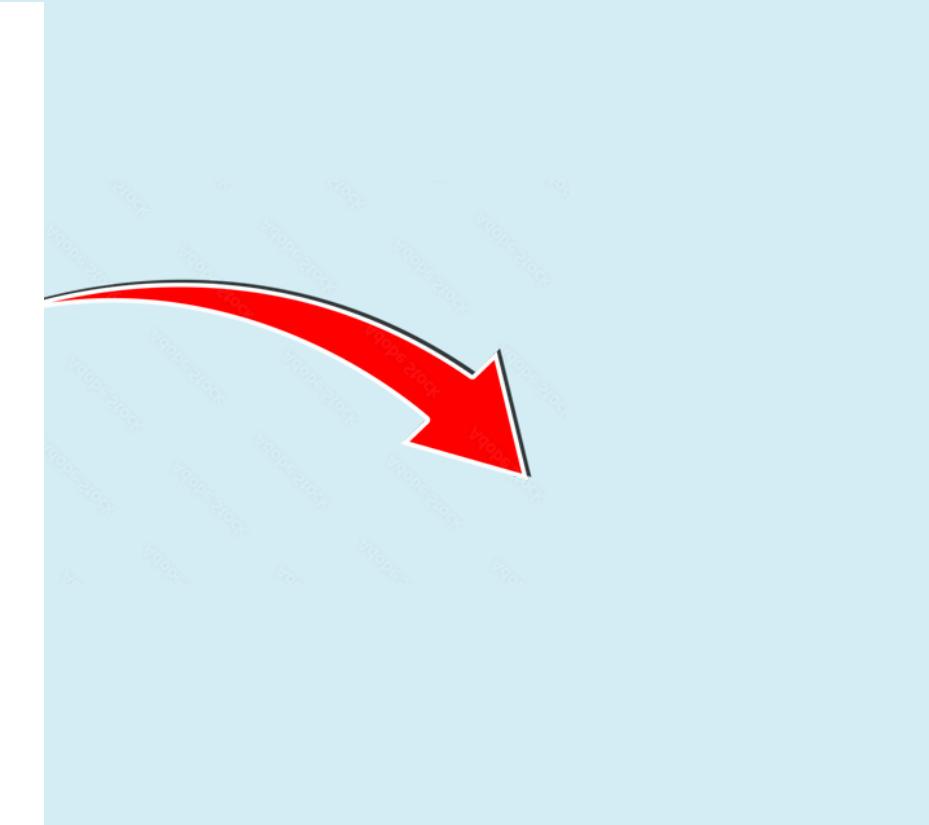
```
WITH cte AS (SELECT c.channel,  
ROUND(SUM(g.gross_price*s.sold_quantity)/100000,2) AS Gross_sales_mln  
FROM fact_sales_monthly s  
JOIN dim_customer c USING(customer_code)  
JOIN fact_gross_price g USING(product_code)  
WHERE s.fiscal_year = 2021  
GROUP BY c.channel)  
SELECT Channel, Gross_Sales_mln,  
ROUND((Gross_Sales_mln/(SELECT SUM(Gross_Sales_mln) FROM cte))*100,2)  
AS Percentage FROM cte  
ORDER BY Gross_Sales_mln DESC;
```

INSIGHTS : In FY 2021, the Retailer channel was the largest contributor to gross sales, accounting for 72%, followed by Direct at 16% and Distributor at 11%.

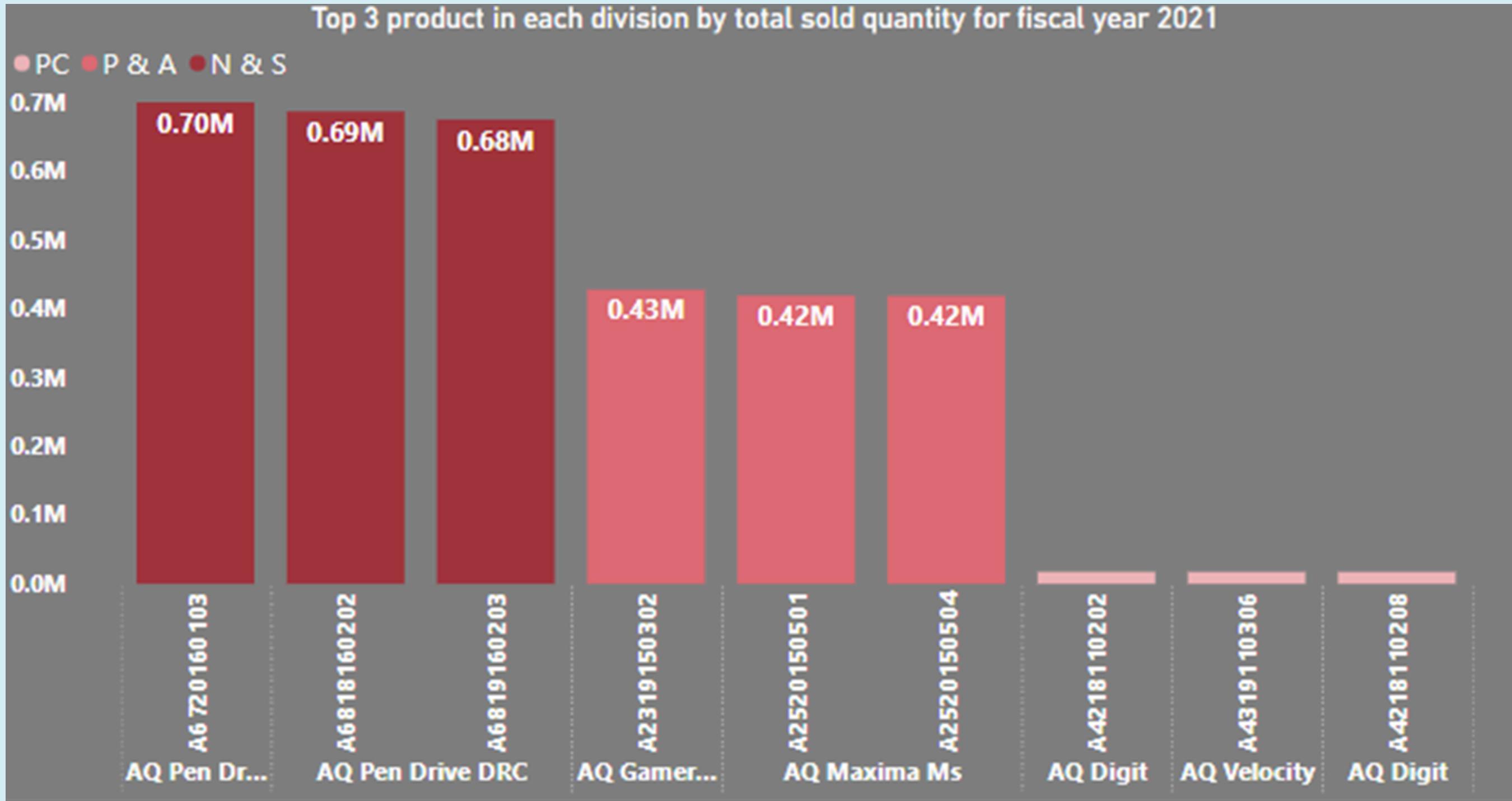


10. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021? The final output contains these fields, a)division b)product_code c)product d)total_sold_quantity e)rank_order

```
WITH cte AS
(
    SELECT p.division, s.product_code, p.product,
           CONCAT(ROUND(SUM(s.sold_quantity)/1000000,2), " mln") AS total_sold_quantity,
           DENSE_RANK() OVER(PARTITION BY p.division ORDER BY SUM(s.sold_quantity) DESC) AS 'rank_order'
    FROM dim_product p JOIN fact_sales_monthly s
    ON p.product_code = s.product_code
    WHERE s.fiscal_year = 2021
    GROUP BY p.division, s.product_code, p.product)
    SELECT * FROM cte
    WHERE rank_order <= 3
    ORDER BY division, rank_order;
```



division	product_code	product	total_sold_quantity	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1	0.70 mln	1
N & S	A6818160202	AQ Pen Drive DRC	0.69 mln	2
N & S	A6819160203	AQ Pen Drive DRC	0.68 mln	3
P & A	A2319150302	AQ Gamers Ms	0.43 mln	1
P & A	A2520150501	AQ Maxima Ms	0.42 mln	2
P & A	A2520150504	AQ Maxima Ms	0.42 mln	3
PC	A4218110202	AQ Digit	0.02 mln	1
PC	A4319110306	AQ Velocity	0.02 mln	2
PC	A4218110208	AQ Digit	0.02 mln	3



Insight:

In FY 2021, the top 3 products in each division—Pen Drive, Mouse, and Desktop—made a significant contribution to the total sold quantities.

Thank You

