



# ATLIQ HARDWARE

## AD-HOC INSIGHTS ON CONSUMER GOODS

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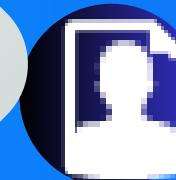
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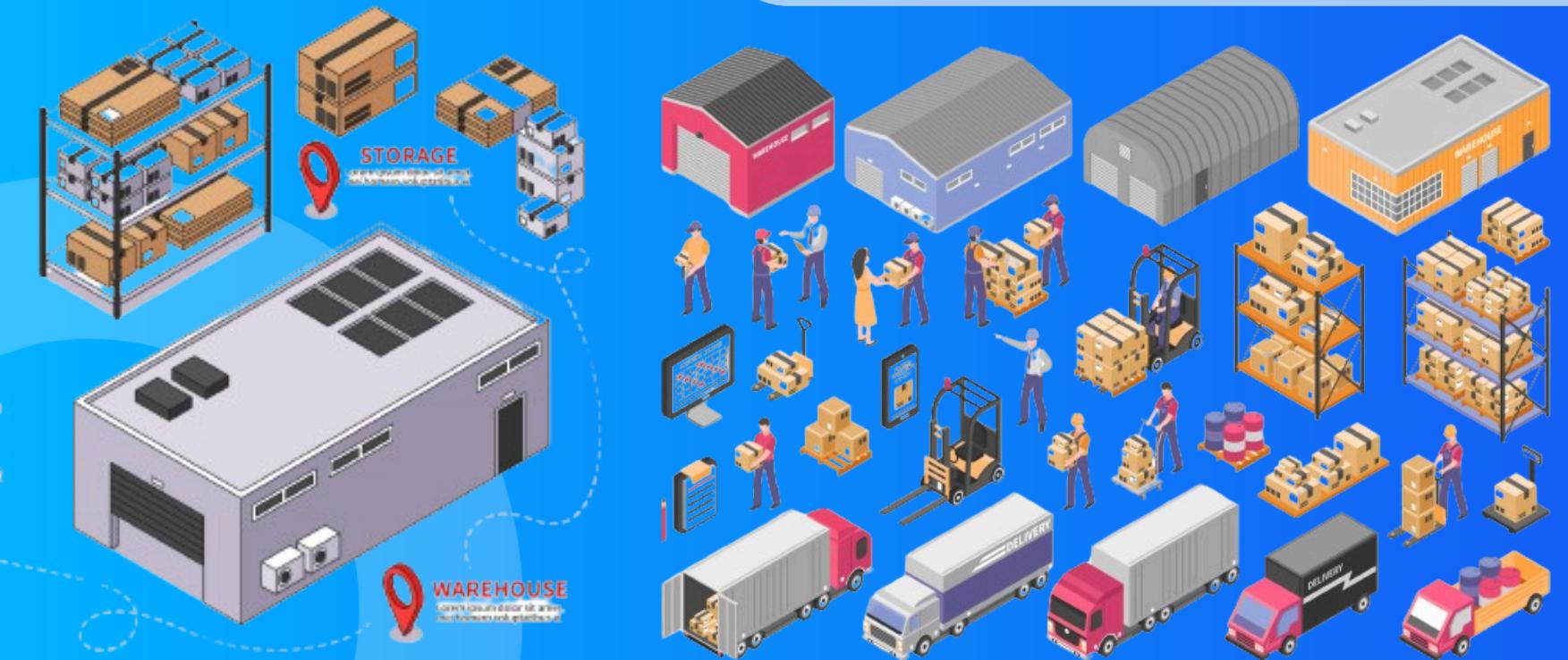


# COMPANY PROFILE



**Atliq Hardware:** is a Computer Hardware and Accessory manufacturer in India, with a significant presence in international markets. The company operates in 27 countries across four major regions:

- Asia-Pacific (APAC)
- European Union (EU)
- Latin America (LATAM)
- North America (NA)



## Manufacturing Products Categories:

**73 unique products across three divisions:**

- Networking & Storage (N&S)
- Personal Computers (PC)
- Peripherals & Accessories (P&A)

# OBJECTIVES



The management has identified a gap in their ability to derive timely and intelligent insights from data.

To improve the management's ability to derive actionable insights from data, the company is expanding its analytics team by hiring junior data analysts.



Tony Sharma, the Data Analytics Director, is conducting a SQL challenge to find candidates who excel in both technical and soft skills.



Candidates will analyze 10 ad-hoc requests, by writing precise SQL queries to extract data, and present their findings in clear, actionable reports and presentations for management.

# AD-HOC-REQUESTS

## Requests:

1. Provide the list of markets in which customer "Atiq 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

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 "Atiq 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,

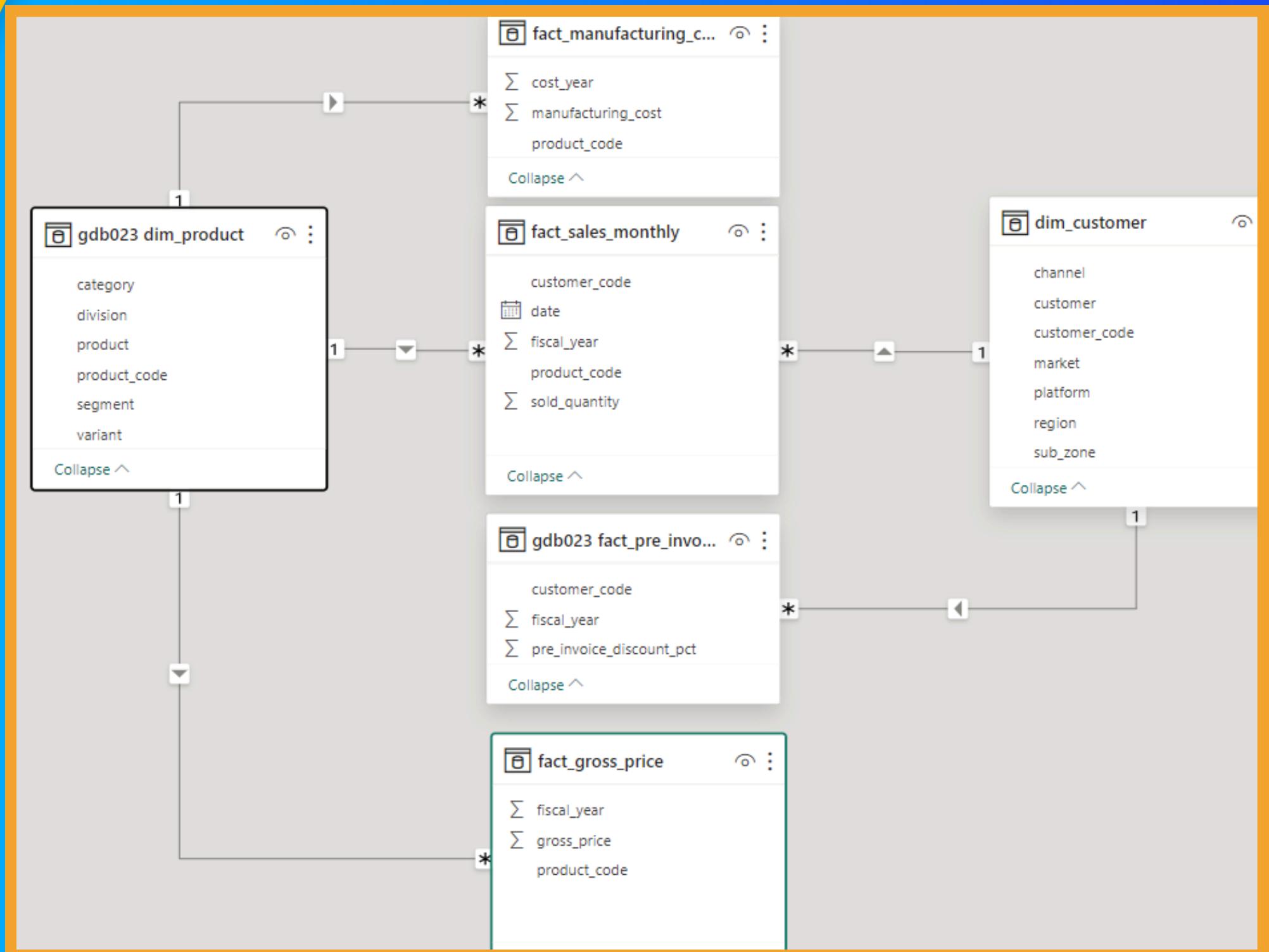
channel  
gross\_sales\_min  
percentage

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



# DATA MODEL



# QUERIES

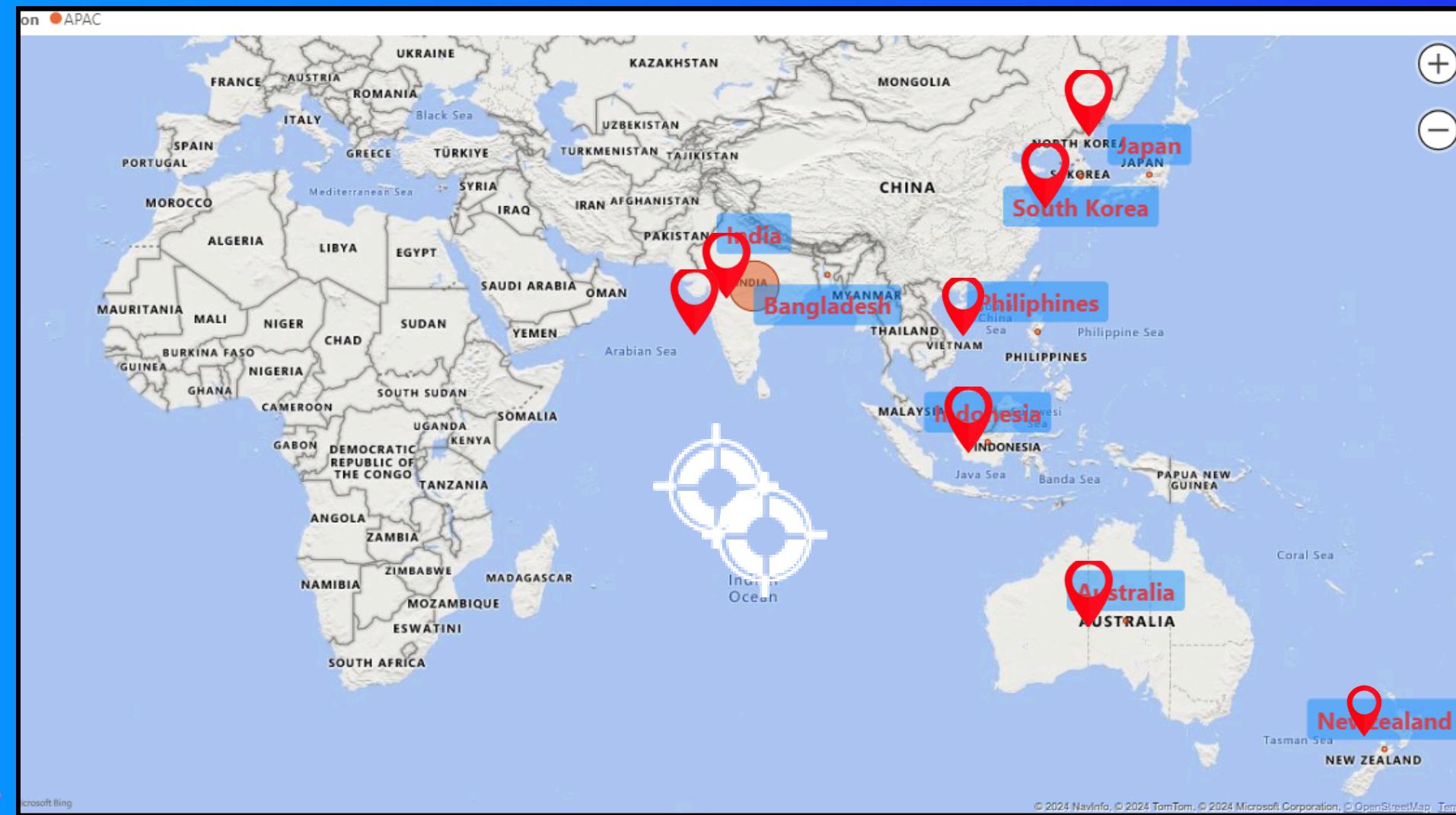
1. Provide the list of markets in which customer "AtliqExclusive" operates its business in the APAC region.



```
SELECT  
    MARKET  
FROM  
    DIM_CUSTOMER  
WHERE  
    REGION = 'APAC'  
AND CUSTOMER = 'ATLIQ EXCLUSIVE';
```

MARKET
India
Indonesia
Japan
Philippines
South Korea
Australia
Newzealand
Bangladesh

# INSIGHTS



Atliq Exclusive operates in 8 countries in the APAC region, indicating a strong presence in this market

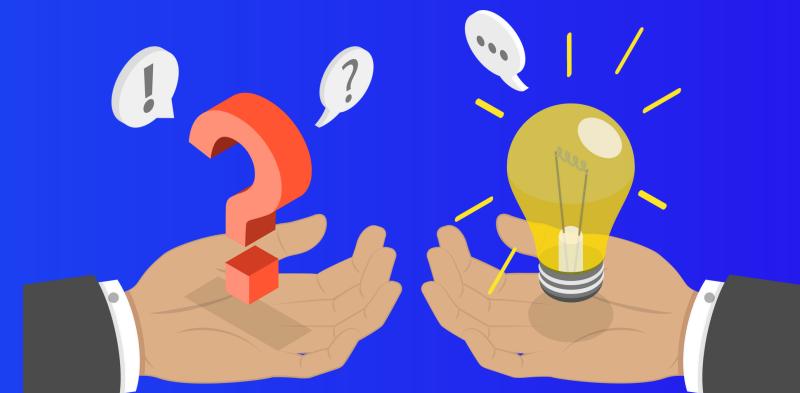


# QUERIES

2. What is the percentage of unique product increase in 2021 vs. 2020? The Final output contains these field,unique\_products\_2020, unique\_products\_2021 percentage\_chg

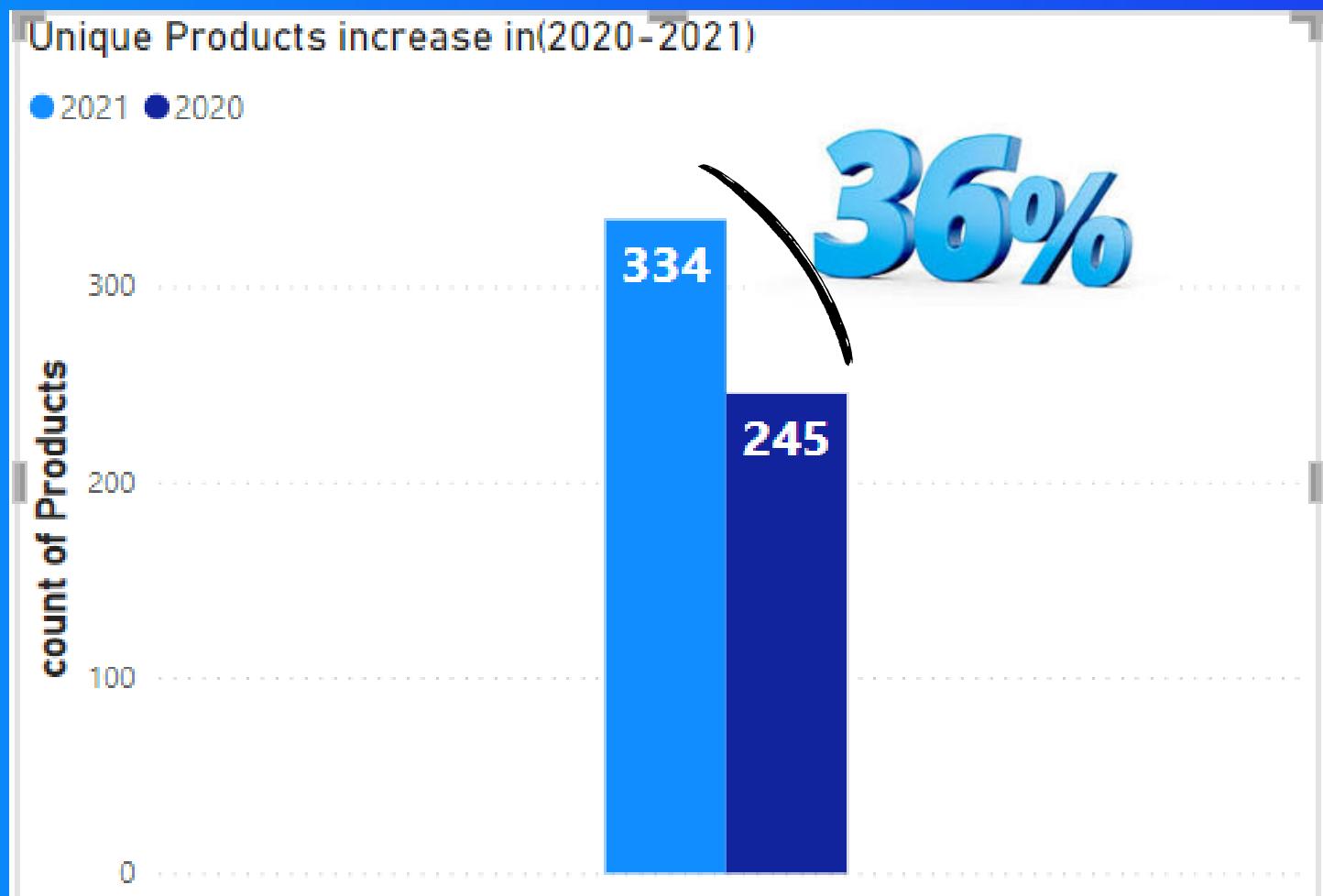


```
WITH CTE1 AS (
    SELECT COUNT(DISTINCT PRODUCT_CODE) AS UNIQUE_PRODUCTS_INC_2020
    FROM fact_sales_monthly
    WHERE fiscal_year = 2020  ),
CTE2 AS (
    SELECT COUNT(DISTINCT PRODUCT_CODE) AS UNIQUE_PRODUCTS_INC_2021
    FROM fact_sales_monthly
    WHERE fiscal_year = 2021  )
SELECT
    C1.UNIQUE_PRODUCTS_INC_2020,
    C2.UNIQUE_PRODUCTS_INC_2021,
    ROUND(
        (C2.UNIQUE_PRODUCTS_INC_2021 - C1.UNIQUE_PRODUCTS_INC_2020) /
        CAST(C1.UNIQUE_PRODUCTS_INC_2020 AS FLOAT) * 100, 2
    ) AS PERCENTAGE_CHG
FROM CTE1 C1
CROSS JOIN CTE2 C2 ;
```



UNIQUE_PRODUCTS_INC_2020	245
UNIQUE_PRODUCTS_INC_2021	334
PERCENTAGE_CHG	36.33

# INSIGHTS



**In 2021, the number of unique products increased by 36% compared to 2020, indicating significant product expansion and potential market growth.**

# QUERIES

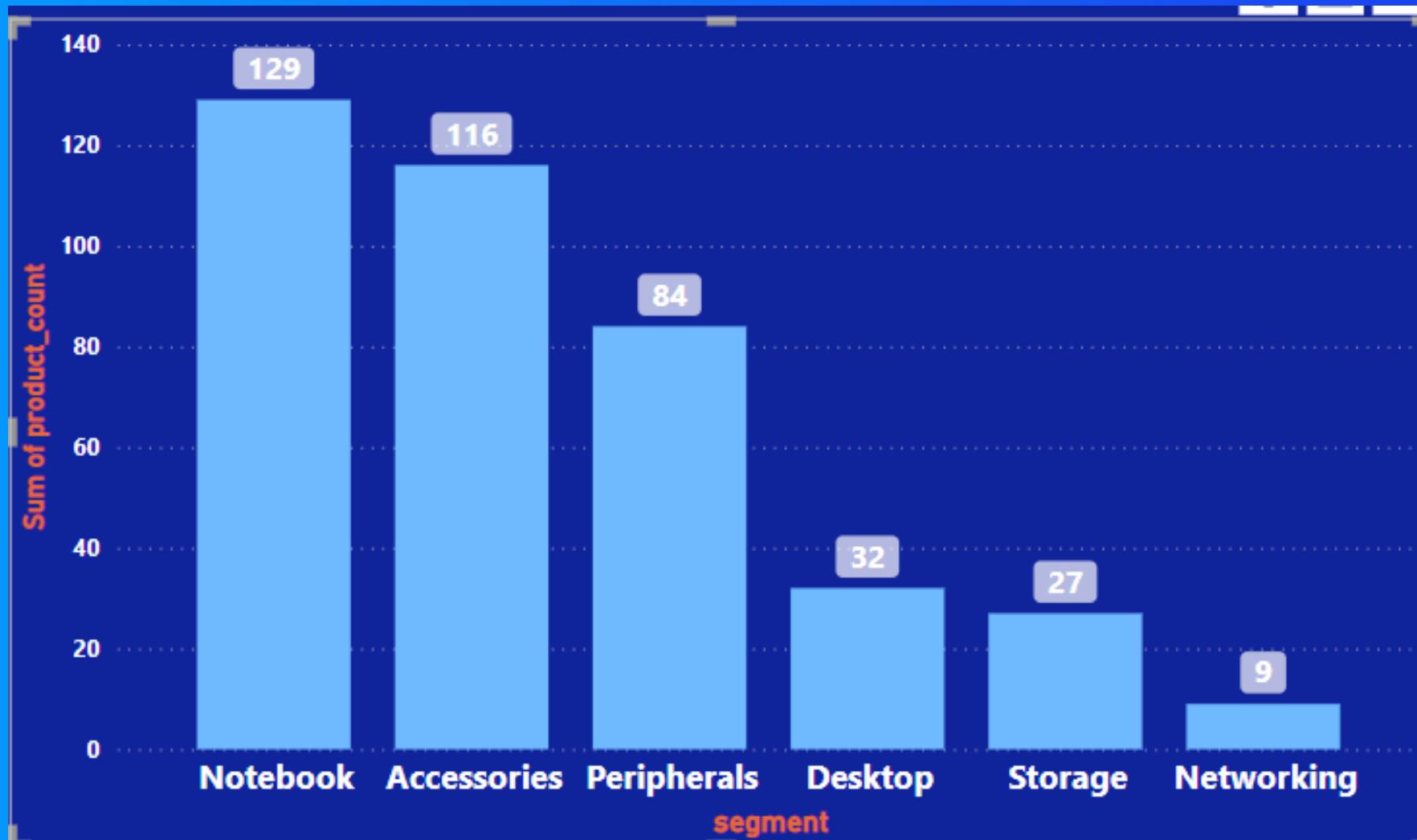
**3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts.  
The final output contains 2 fields, 1.segment 2.product\_count**



```
SELECT  
    COUNT(DISTINCT PRODUCT_CODE) AS  
    PRODUCT_COUNT, SEGMENT  
FROM  
    DIM_PRODUCT  
GROUP BY  
    SEGMENT  
ORDER BY  
    PRODUCT_COUNT DESC;
```

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

# INSIGHTS

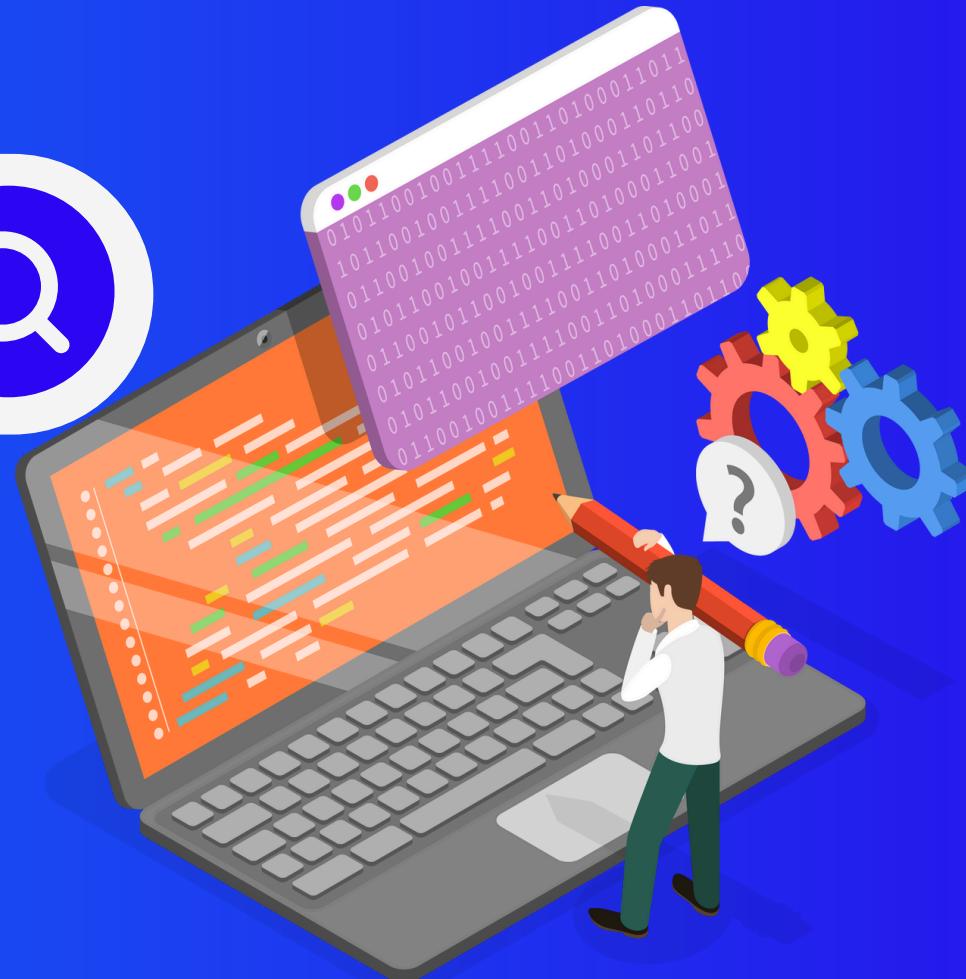


The '**Notebook**' segment leads with **129 unique products**, while '**Networking**' has the fewest with **9**, indicating diverse product ranges and opportunities for growth in less emphasized segments



# QUERIES

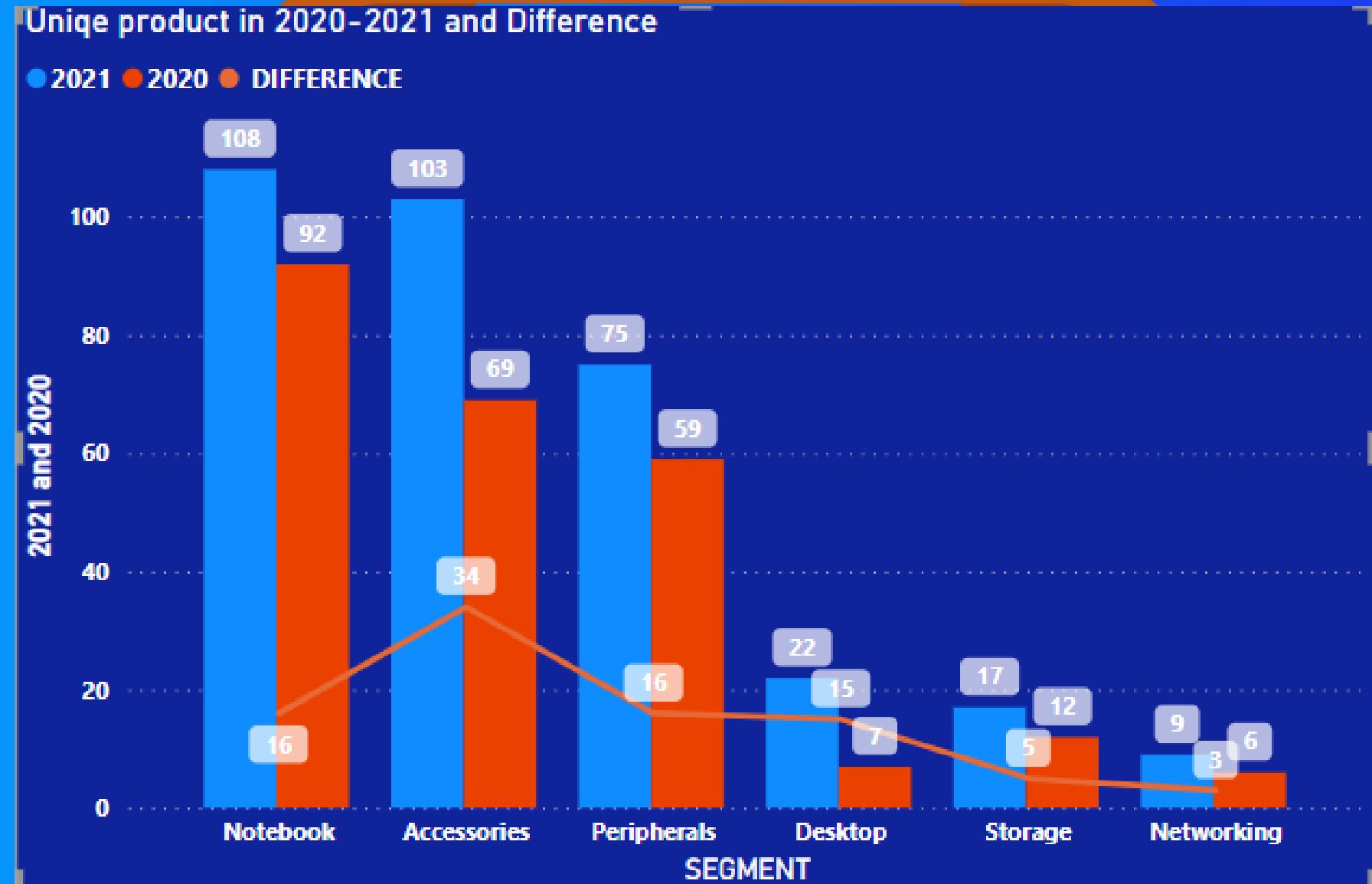
4. Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields, segment product\_count\_2020 product\_count\_2021 difference



```
WITH CTE1 AS (
    SELECT SEGMENT, COUNT(DISTINCT PRODUCT_CODE) AS
    PRODUCT_COUNT_2020 FROM DIM_PRODUCT
    JOIN FACT_GROSS_PRICE USING (PRODUCT_CODE)
    WHERE FISCAL_YEAR = 2020 GROUP BY SEGMENT ),
CTE2 AS (
    SELECT SEGMENT, COUNT(DISTINCT PRODUCT_CODE) AS
    PRODUCT_COUNT_2021 FROM DIM_PRODUCT
    JOIN FACT_GROSS_PRICE USING (PRODUCT_CODE) WHERE
    FISCAL_YEAR = 2021 GROUP BY SEGMENT )
SELECT
    CTE1.SEGMENT, CTE1.PRODUCT_COUNT_2020,
    CTE2.PRODUCT_COUNT_2021,
    (CTE2.PRODUCT_COUNT_2021 - CTE1.PRODUCT_COUNT_2020) AS
    DIFFERENCE FROM CTE1
JOIN CTE2 USING (SEGMENT) ORDER BY DIFFERENCE DESC ;
```

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

# INSIGHTS



The Accessories segment saw the largest increase in unique products with 34 new items, followed by Notebooks and Peripherals each adding 16, Desktops adding 15, Storage adding 5, and Networking adding 3 unique products from 2020 to 2021.reflecting market demand and growth opportunities



# QUERIES

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

```
SELECT
    P.PRODUCT_CODE,
    P.PRODUCT,
    F.MANUFACTURING_COST
FROM
    DIM_PRODUCT P
JOIN
    FACT_MANUFACTURING_COST F
USING (PRODUCT_CODE)
JOIN
    (SELECT
        MIN(MANUFACTURING_COST) AS MinCost,
        MAX(MANUFACTURING_COST) AS MaxCost
        FROM FACT_MANUFACTURING_COST) M
```

```
ON
    F.MANUFACTURING_COST = M.MinCost
OR
    F.MANUFACTURING_COST = M.MaxCost;
```

	PRODUCT_CODE	PRODUCT	MANUFACTURING_COST
▶	A2118150101	AQ Master wired x1 Ms	0.8920
	A6120110206	AQ HOME Allin1 Gen 2	240.5364



# QUERIES

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

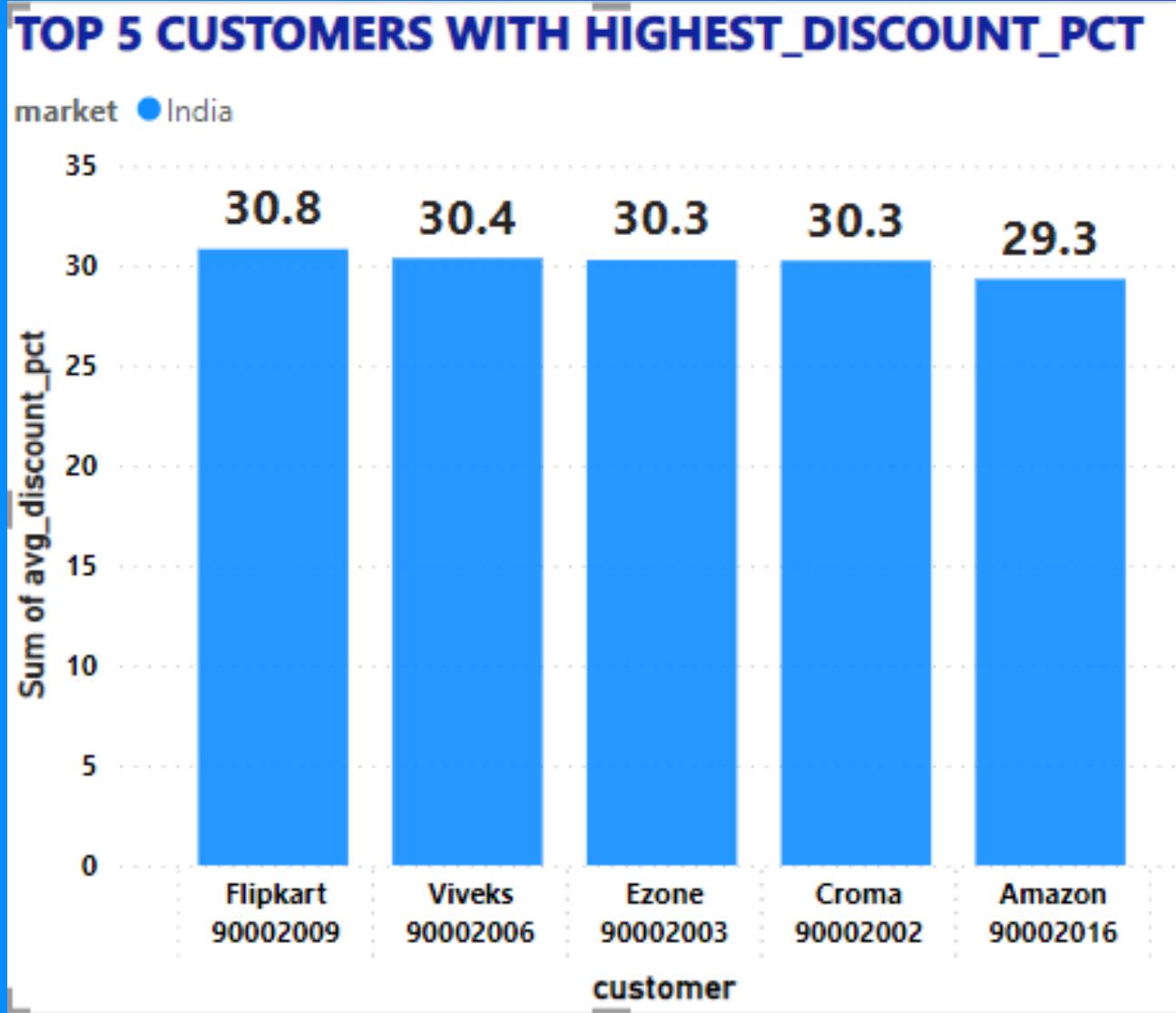


```
SELECT
    CUSTOMER_CODE,
    CUSTOMER,
    MARKET,
    ROUND(AVG(PRE_INVOICE_DISCOUNT_PCT) * 100, 2) AS
    AVG_DISCOUNT_PCT
FROM
    DIM_CUSTOMER
JOIN
    FACT_PRE_INVOICEDEDUCTIONS
    USING (CUSTOMER_CODE)
WHERE
    MARKET = 'INDIA'
    AND FISCAL_YEAR = 2021
GROUP BY
    CUSTOMER_CODE, CUSTOMER, MARKET
ORDER BY
    AVG_DISCOUNT_PCT DESC
LIMIT 5;
```



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

# INSIGHTS



**In FY 2021, Flipkart led with the highest average discount of 30.83% among the top 5 customers in India, while Amazon had the lowest at 29.33%.**

# QUERIES

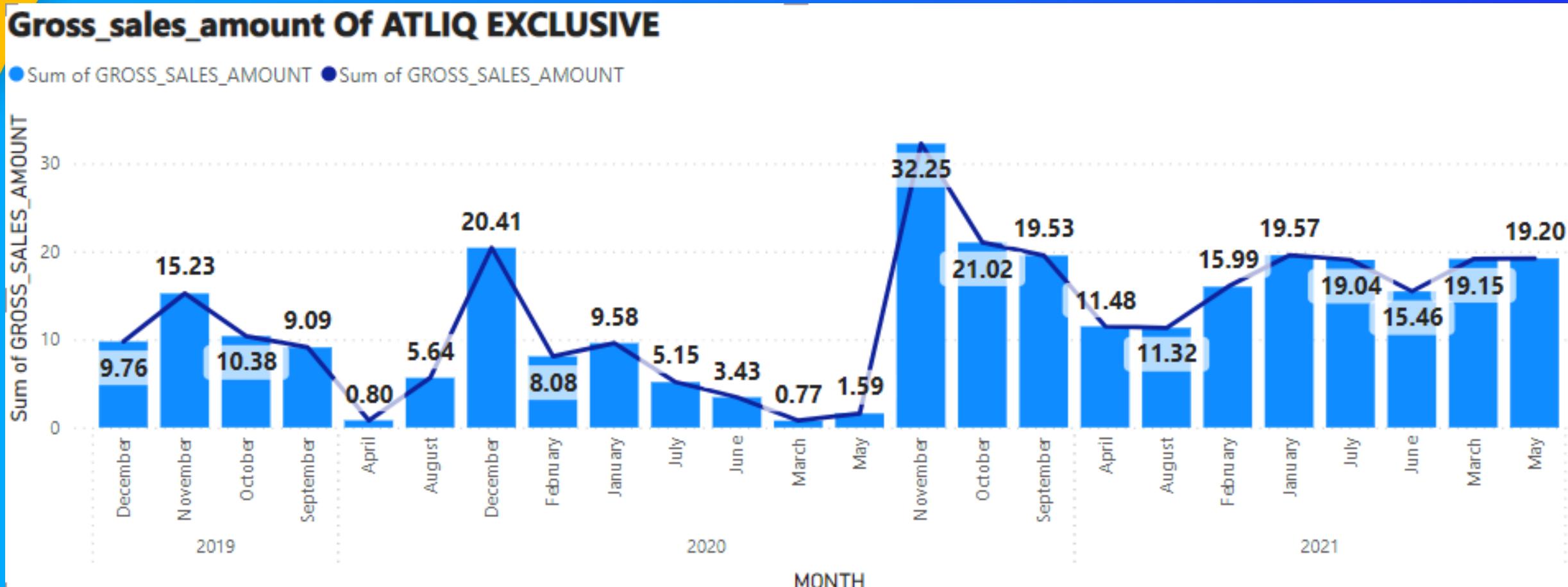
7. Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month. This analysis helps to get an idea of low and high-performing months and take strategic decisions. The final report contains these columns: Month Year Gross sales Amount



```
WITH CTE1 AS (
    SELECT
        MONTH(F.DATE) AS MONTH_NUM, MONTHNAME(F.DATE) AS MONTH,
        YEAR(F.DATE) AS YEAR,
        ROUND(G.GROSS_PRICE * F.SOLD_QUANTITY / 1000000, 2) AS SALES_AMOUNT
    FROM FACT_SALES_MONTHLY AS F
    JOIN FACT_GROSS_PRICE AS G USING (PRODUCT_CODE)
    JOIN DIM_CUSTOMER AS C USING (CUSTOMER_CODE)
    WHERE C.CUSTOMER = 'Atliq Exclusive'
    SELECT
        MONTH_NUM, MONTH, YEAR SUM(SALES_AMOUNT) AS
        GROSS_SALES_AMOUNT
    FROM CTE1
    GROUP BY YEAR, MONTH_NUM, MONTH
    ORDER BY YEAR, MONTH_NUM;
```

	MONTH_NUM	MONTH	YEAR	GROSS_SALES_AMOUNT
▶	9	September	2019	9.09
	10	October	2019	10.38
	11	November	2019	15.23
	12	December	2019	9.76
	1	January	2020	9.58
	2	February	2020	8.08
	3	March	2020	0.77
	4	April	2020	0.80
	5	May	2020	1.59
	6	June	2020	3.43
	7	July	2020	5.15
	8	August	2020	5.64
	9	September	2020	19.53
	10	October	2020	21.02

# INSIGHTS



**AtliQ Exclusive achieved its peak sales in November 2020, while March 2020 marked the lowest point in sales**



# QUERIES

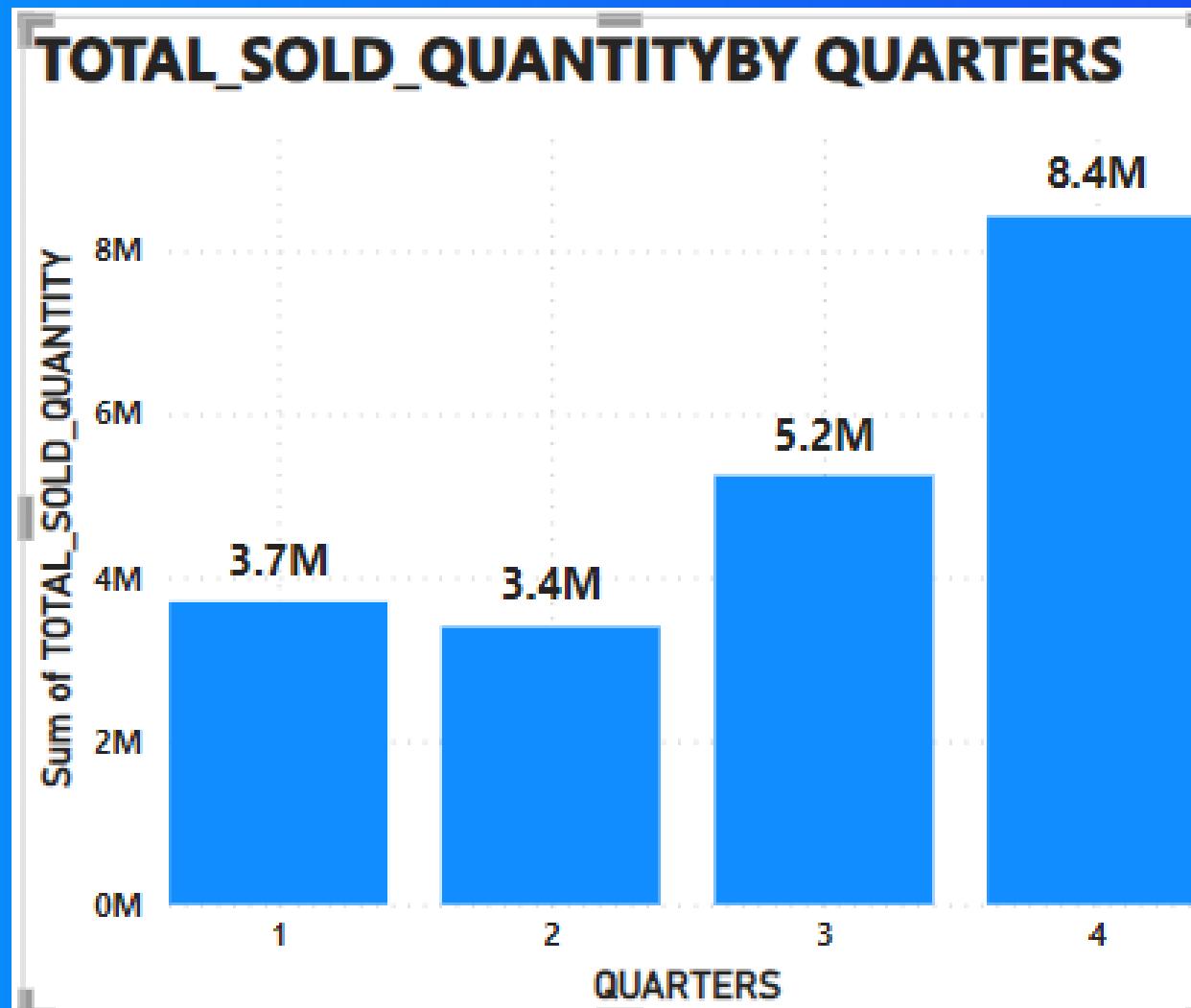
8. In which quarter of 2020, got the maximum total\_sold\_quantity?  
The final output contains these fields sorted by the  
total\_sold\_quantity, Quarter total\_sold\_quantity



```
SELECT
    QUARTER(DATE) AS QUARTERS,
    SUM(SOLD_QUANTITY) AS
    TOTAL_SOLD_QUANTITY
FROM
    FACT_SALES_MONTHLY
WHERE
    FISCAL_YEAR = 2020
GROUP BY QUARTERS
ORDER BY QUARTERS, TOTAL_SOLD_QUANTITY
```

QUARTERS	TOTAL_SOLD_QUANTITY
1	3704398
2	3395899
3	5246770
4	8425822

# INSIGHTS



**Q4 2020 had the highest total sold quantity at 8.43 million units, driven by holiday sales, while Q2 had the lowest at 3.40 million units, likely impacted by the pandemic.**



**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**

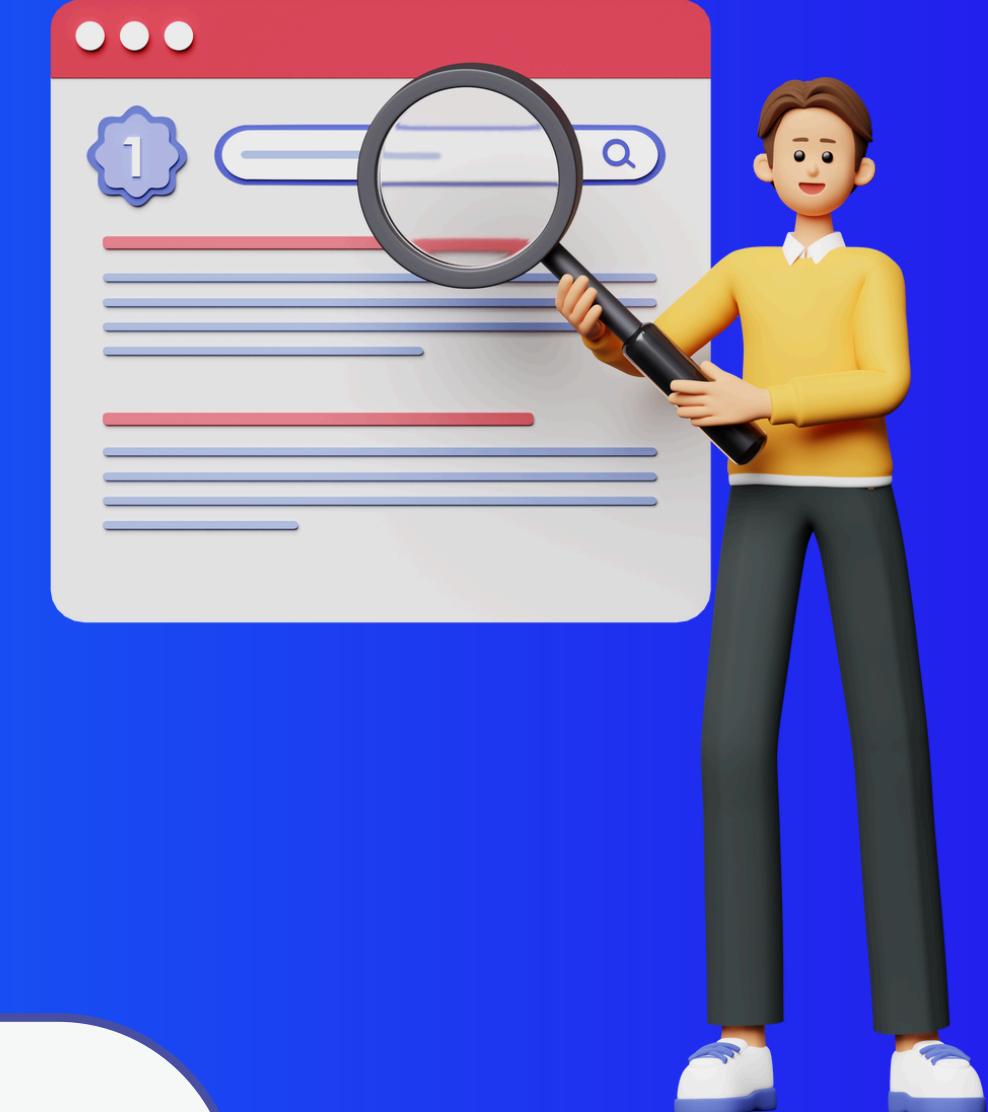
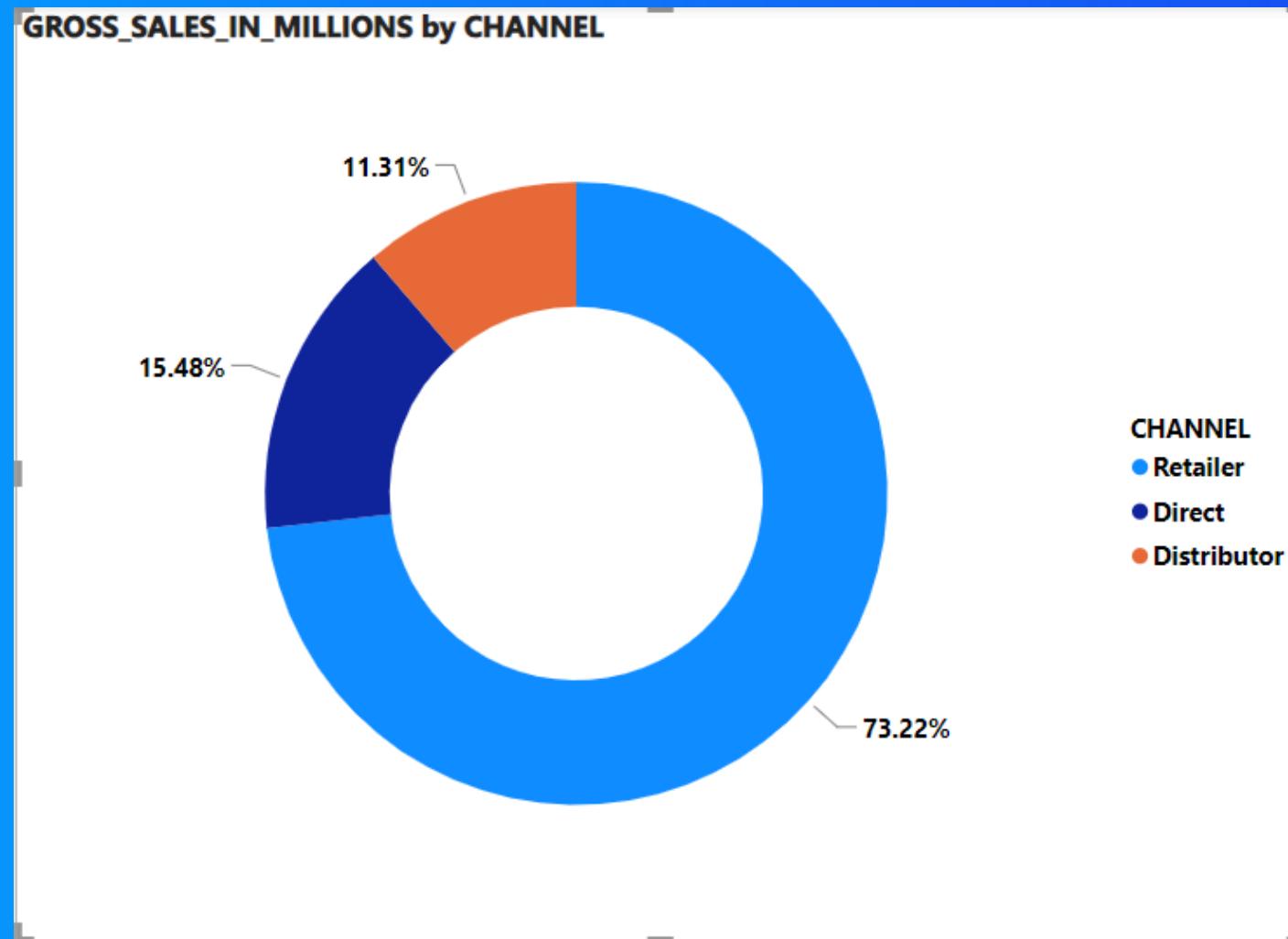


```

WITH CTE1 AS (
    SELECT C.CHANNEL, SUM(S.SOLD_QUANTITY *
G.GROSS_PRICE) AS TOTAL_SALES
    FROM FACT_SALES_MONTHLY S
    JOIN FACT_GROSS_PRICE G USING(PRODUCT_CODE)
    JOIN DIM_CUSTOMER C USING(CUSTOMER_CODE)
    WHERE S.FISCAL_YEAR = 2021
    GROUP BY C.CHANNEL
)
SELECT CHANNEL,
    ROUND(TOTAL_SALES / 1000000, 2) AS
GROSS_SALES_IN_MILLIONS,
    ROUND(TOTAL_SALES / (SUM(TOTAL_SALES) OVER ()) * 100,
2) AS PERCENTAGE
    FROM CTE1
    ORDER BY TOTAL_SALES DESC;
  
```

CHANNEL	GROSS_SALES_IN_MILLIONS	PERCENTAGE
Retailer	1924.17	73.22
Direct	406.69	15.47
Distributor	297.18	11.31

# INSIGHTS



**Retailers dominate with 73.22% of total sales, while Direct and Distributor channels contribute 15.47% and 11.31% respectively.**

# QUERIES

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



```
WITH CTE1 AS (
    SELECT P.DIVISION, P.PRODUCT_CODE, P.PRODUCT,
    SUM(S.SOLD_QUANTITY) AS TOTAL SOLD QUANTITY
    FROM DIM_PRODUCT P
    JOIN FACT_SALES_MONTHLY S ON S.PRODUCT_CODE = P.PRODUCT_CODE
    WHERE S.FISCAL_YEAR = 2021
    GROUP BY P.DIVISION, P.PRODUCT_CODE, P.PRODUCT
),
CTE2 AS (
    SELECT *, DENSE_RANK() OVER (PARTITION BY DIVISION ORDER BY
    TOTAL SOLD QUANTITY DESC) AS RANK_ORDER
    FROM CTE1
)
SELECT DIVISION, PRODUCT_CODE, PRODUCT, TOTAL SOLD QUANTITY,
RANK_ORDER
FROM CTE2
WHERE
RANK_ORDER <= 3;
```

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



**The highest number of product sold in Networking and storage division followed by Peripherals and accessories.**

## OVER ALL-INSIGHTS

- **APAC Market Presence:** Atliq Exclusive operates in 8 APAC countries, indicating a strong regional footprint.
- **Product Growth:** Unique products increased by 36.33% from 2020 to 2021, reflecting market responsiveness.
- **Top Product Segments:** Notebooks lead in product count; Networking lags behind.
- **Segment Expansion:** Accessories saw the most new products; Networking had minimal growth.
- **Cost Extremes:** AQ HOME Alin 1 Gen 2 is the most expensive; AQ Master wired x 1 Ms is the least expensive.
- **Top Indian Discounts:** Flipkart leads with a 30.83% discount;
- **Sales Trends:** November 2021 had peak sales; March 2020 saw the lowest due to the pandemic.
- **Quarterly Sales:** Q4 2020 had the highest sales; Q2 was the lowest, impacted by pandemic restrictions.
- **Sales Channels:** Retailer channel contributed 73.23% of 2021 sales, the highest among all channels.
- **Top Products of 2021:** AQ Pen Drive 2 in 1 (Networking), AQ Gamers Ms (Accessories), AQ Digit

# Thank You

