Consumer Goods Ad_Hoc Insights

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Agenda

About the Company

Markets and Products

Input Data

Ad-Hoc Requests

About the Company

- AtliQ Hardwares (Imaginary Company) is recognized as one of India's top-tier producers of computer hardware. With a strong presence in the technology sector, AtliQ Hardwares is committed to delivering high-quality components that power today's digital infrastructure.

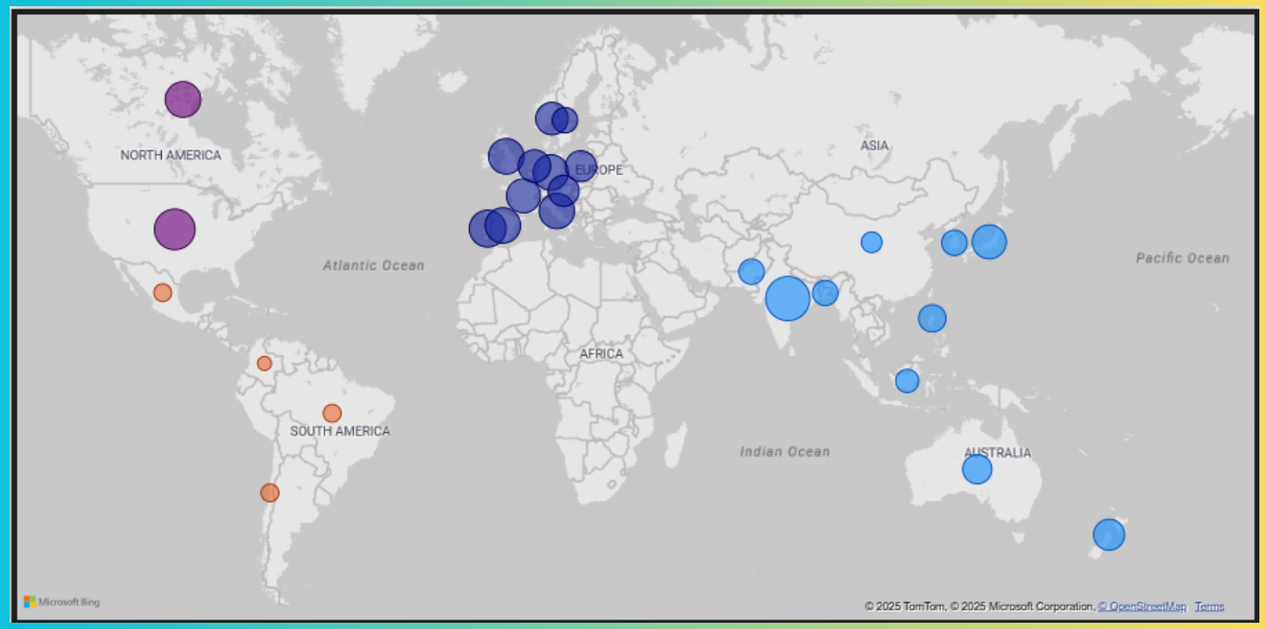
- However, despite their market leadership, the management team observed a critical gap - a lack of timely and actionable data insights. This gap has been slowing down decision-making and limiting their ability to respond swiftly to market changes.

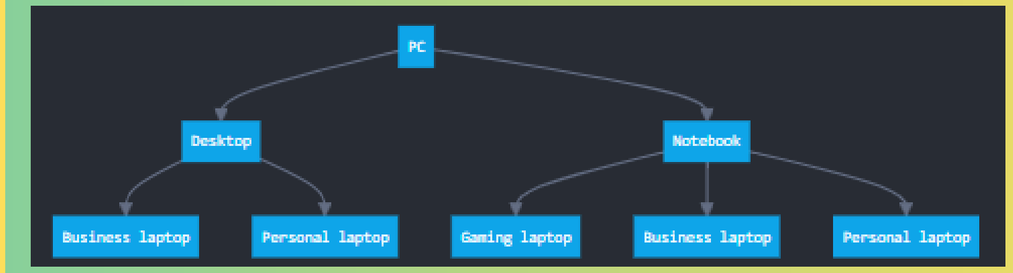
- To overcome this challenge, the company has outlined 10 specific ad-hoc business questions that require data-driven answers. The objective is to harness the power of SQL to extract meaningful insights, transform them into clear and impactful visualizations, and present them to senior leadership - enabling smarter, faster, and more strategic decisions across the organization.

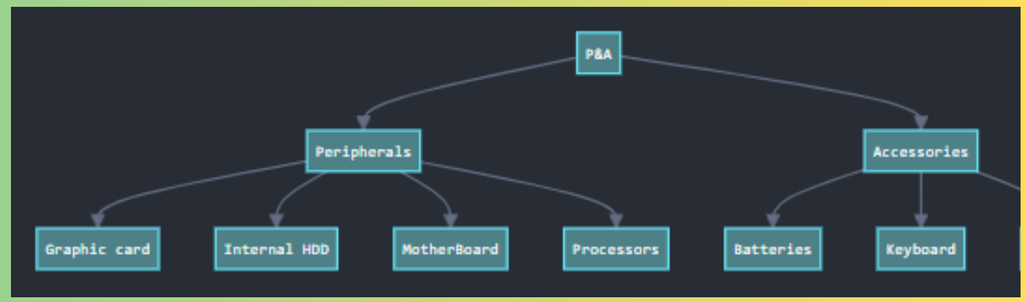
AtliQ's Market and Products

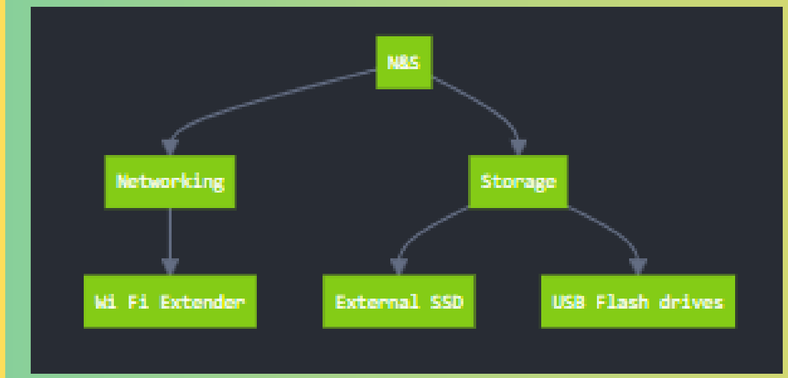
Region
- APAC
- EU
- LATAM
- NA

AtliQ operates in a competitive global market across Asia-Pacific, Europe, Latin America, and North America. It serves key hardware segments including PCs, peripherals, accessories, networking, and storage solutions.



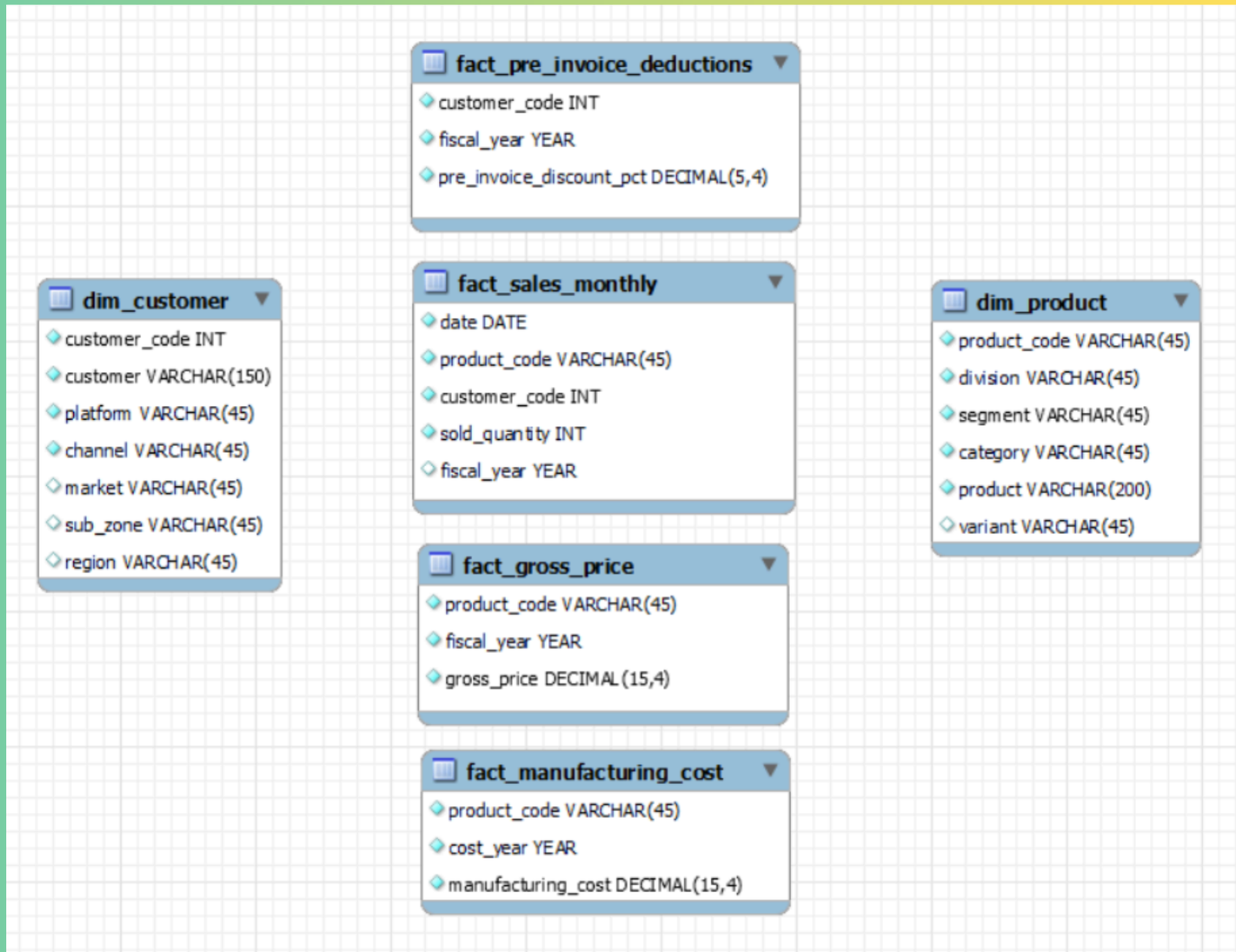






Input Data

The dataset includes sales information spanning fiscal years 2020 and 2021, accompanied by various supporting reference tables such as customer profiles, product specifications, and additional related data dimensions.



Ad-Hoc Requests

10 specific ad-hoc business questions that require data-driven answers

Q1. Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.

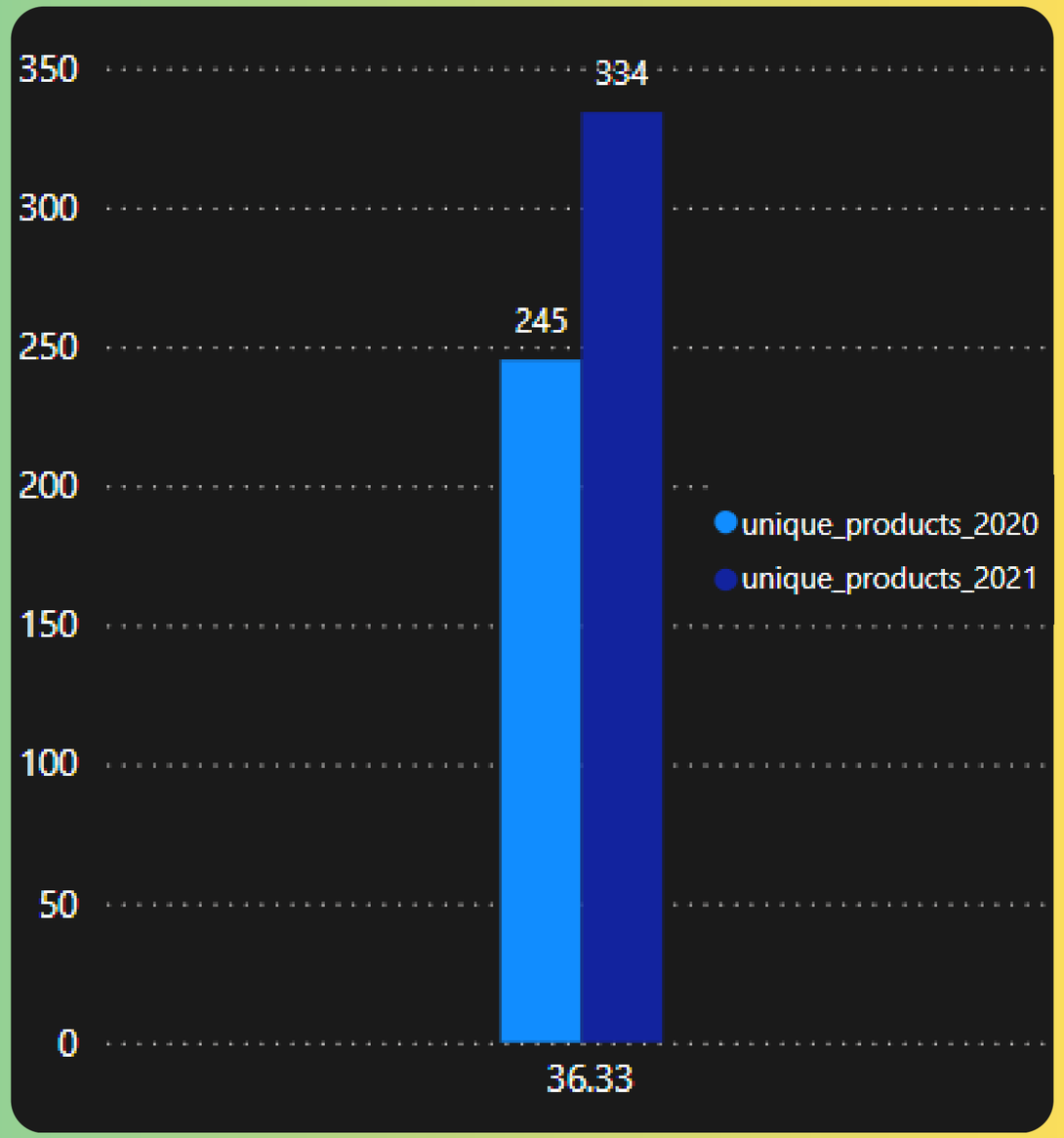
```sql
SELECT DISTINCT market
FROM dim_customer
WHERE customer = "Atliq Exclusive" AND region = "APAC";
```

market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

Q2. What is the percentage of unique product increase in 2021 vs. 2020?

```sql
WITH CTE1 AS (
    SELECT COUNT(DISTINCT product_code) AS Year_2020
    FROM fact_sales_monthly
    WHERE fiscal_year = 2020),
CTE2 AS (
    SELECT COUNT(DISTINCT product_code) AS Year_2021
    FROM fact_sales_monthly
    WHERE fiscal_year = 2021)
SELECT CTE1.Year_2020 AS unique_products_2020,
       CTE2.Year_2021 AS unique_products_2021,
       ROUND(((CTE2.Year_2021-CTE1.Year_2020)*100/CTE1.Year_2020),2)
            AS percentage_chg
    FROM CTE1 CROSS JOIN CTE2;
```

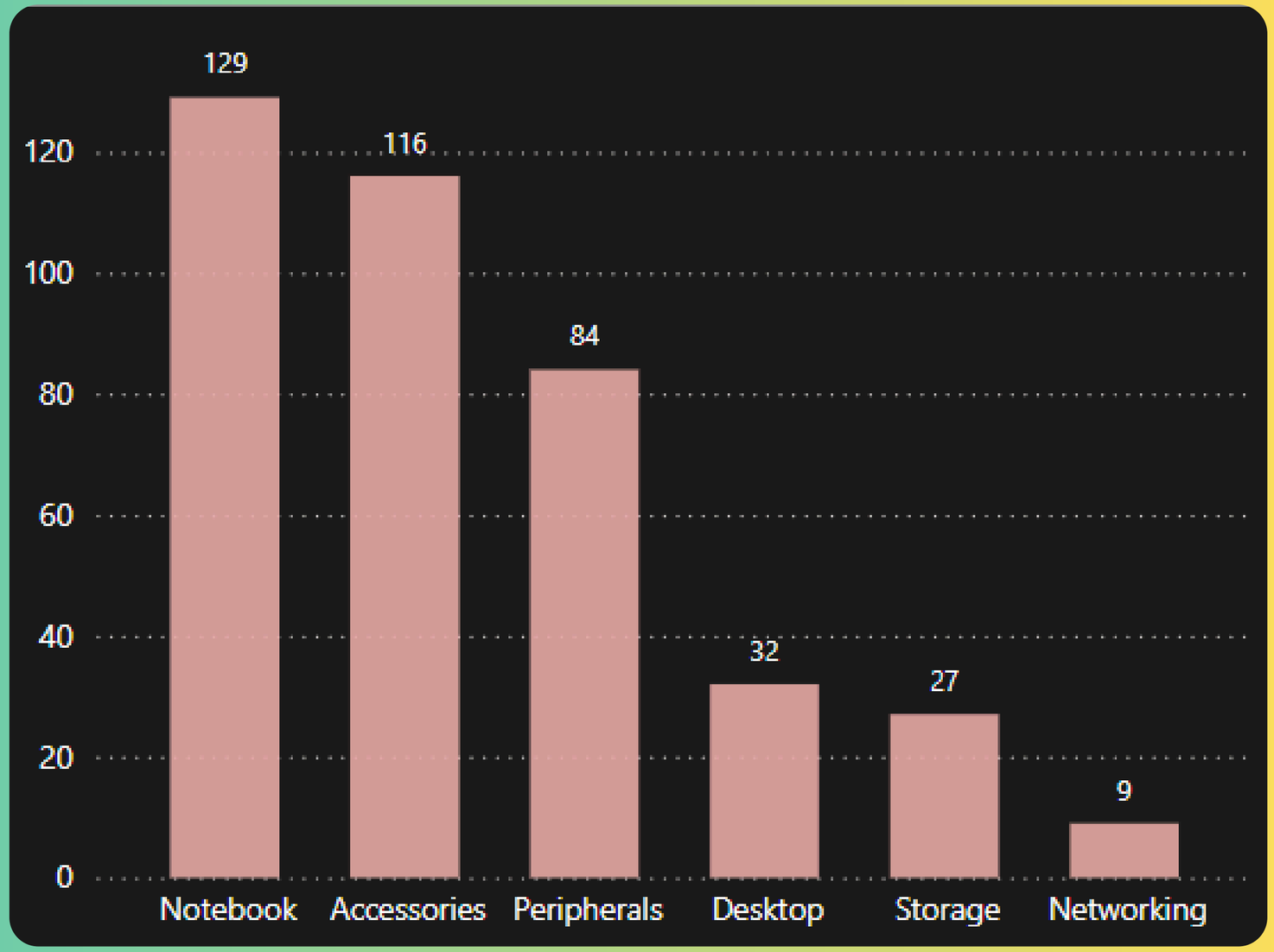
	unique_products_2020	unique_products_2021	percentage_chg
▶	245	334	36.33



Q3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts.

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

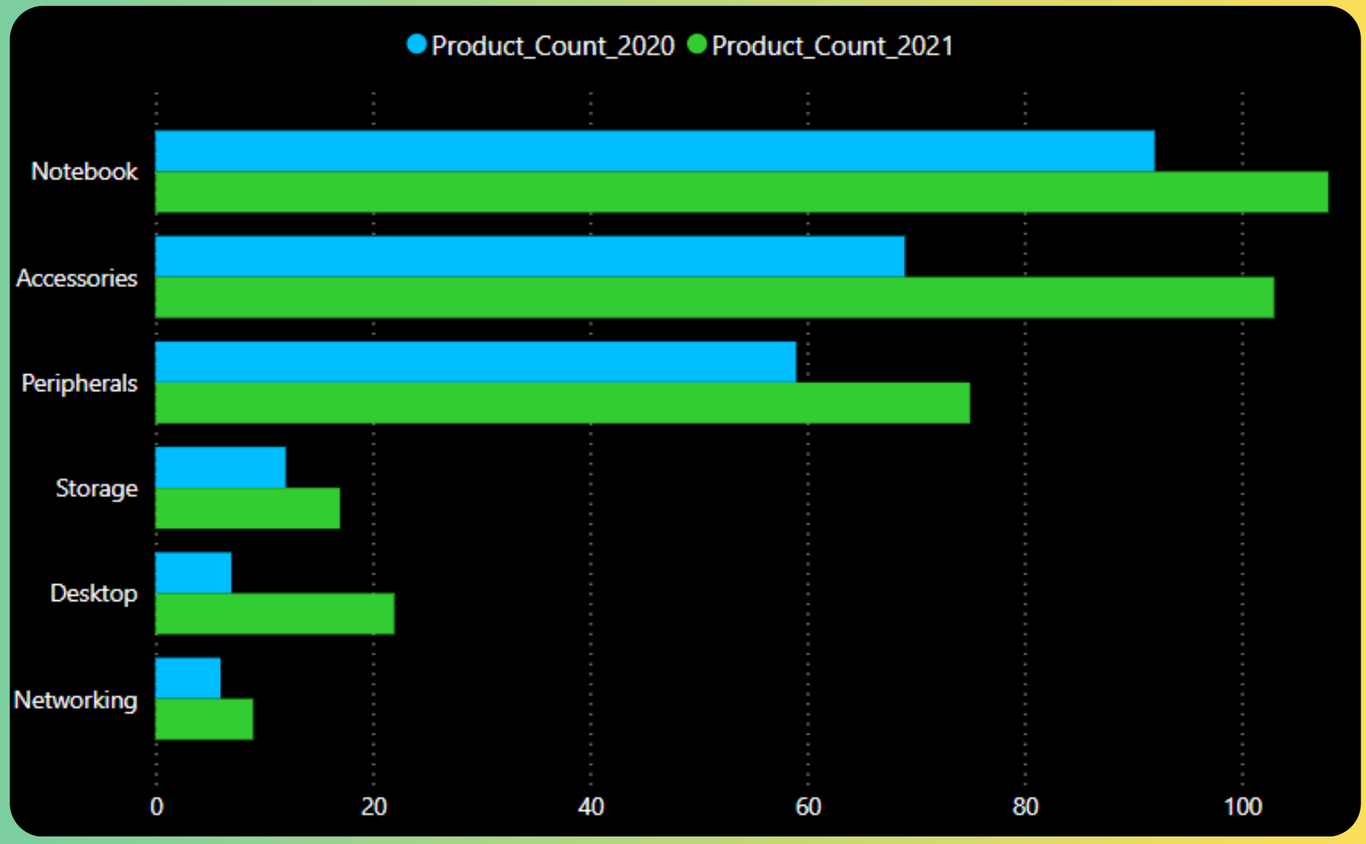
segment	product_count
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9



Q4. Which segment had the most increase in unique products in 2021 vs 2020?

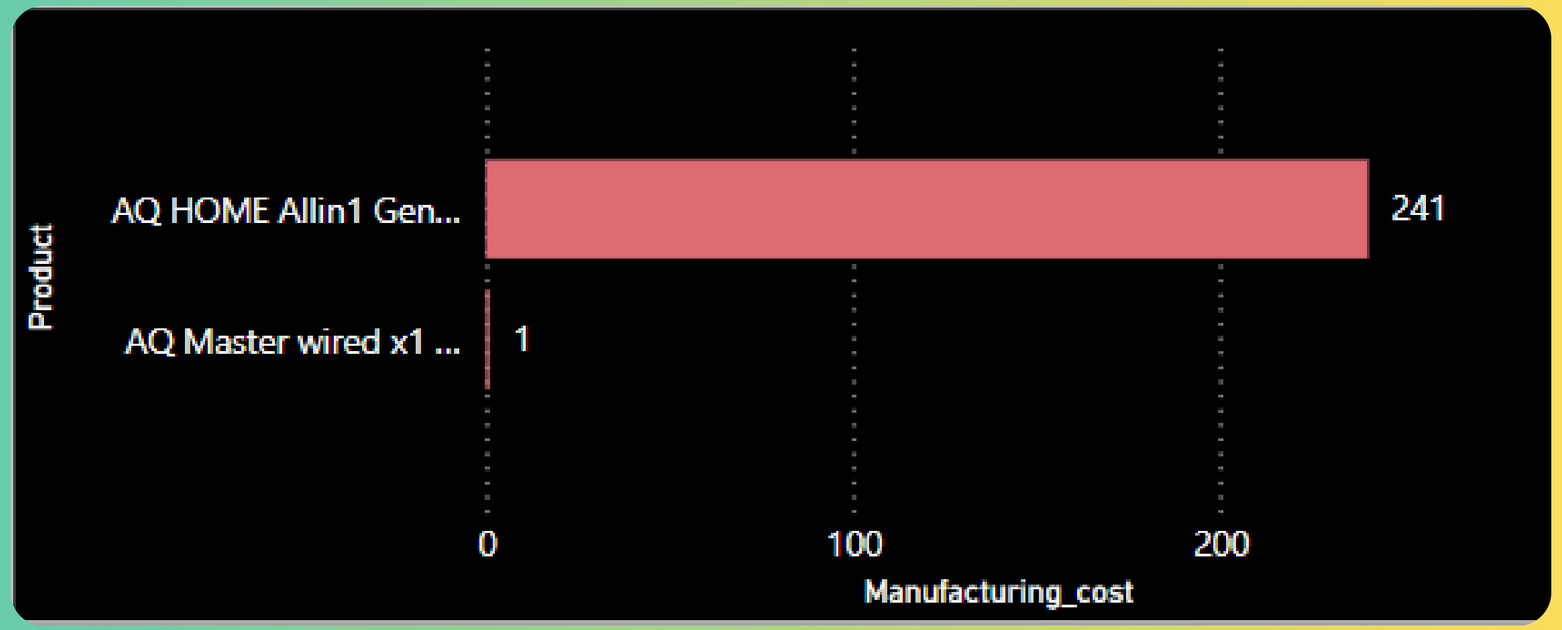
```sql
WITH CTE1 AS (
        SELECT
            p.segment,
            COUNT(DISTINCT s.product_code) AS product_count_2020
        FROM fact_sales_monthly s
        JOIN dim_product p
            ON p.product_code = s.product_code
        WHERE fiscal_year = 2020
        GROUP BY p.segment
        ORDER BY product_count_2020 DESC),
CTE2 AS (
        SELECT
            p.segment,
            COUNT(DISTINCT s.product_code) AS product_count_2021
        FROM fact_sales_monthly s
        JOIN dim_product p
            ON p.product_code = s.product_code
        WHERE fiscal_year = 2021
        GROUP BY p.segment
        ORDER BY product_count_2021 DESC)
SELECT
    CTE1.segment,
    product_count_2020,
    product_count_2021,
    (product_count_2021-product_count_2020) AS difference
FROM CTE1
JOIN CTE2
    ON CTE1.segment = CTE2.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



Q5. Get the products that have the highest and lowest manufacturing costs.

```sql
SELECT
    m.product_code,
    p.product,
    m.manufacturing_cost
FROM fact_manufacturing_cost m
JOIN dim_product p
    ON m.product_code = p.product_code
WHERE manufacturing_cost IN (
        SELECT
            MAX(manufacturing_cost)
        FROM fact_manufacturing_cost
        UNION
        SELECT
            MIN(manufacturing_cost)
        FROM fact_manufacturing_cost)
ORDER BY manufacturing_cost DESC;
```

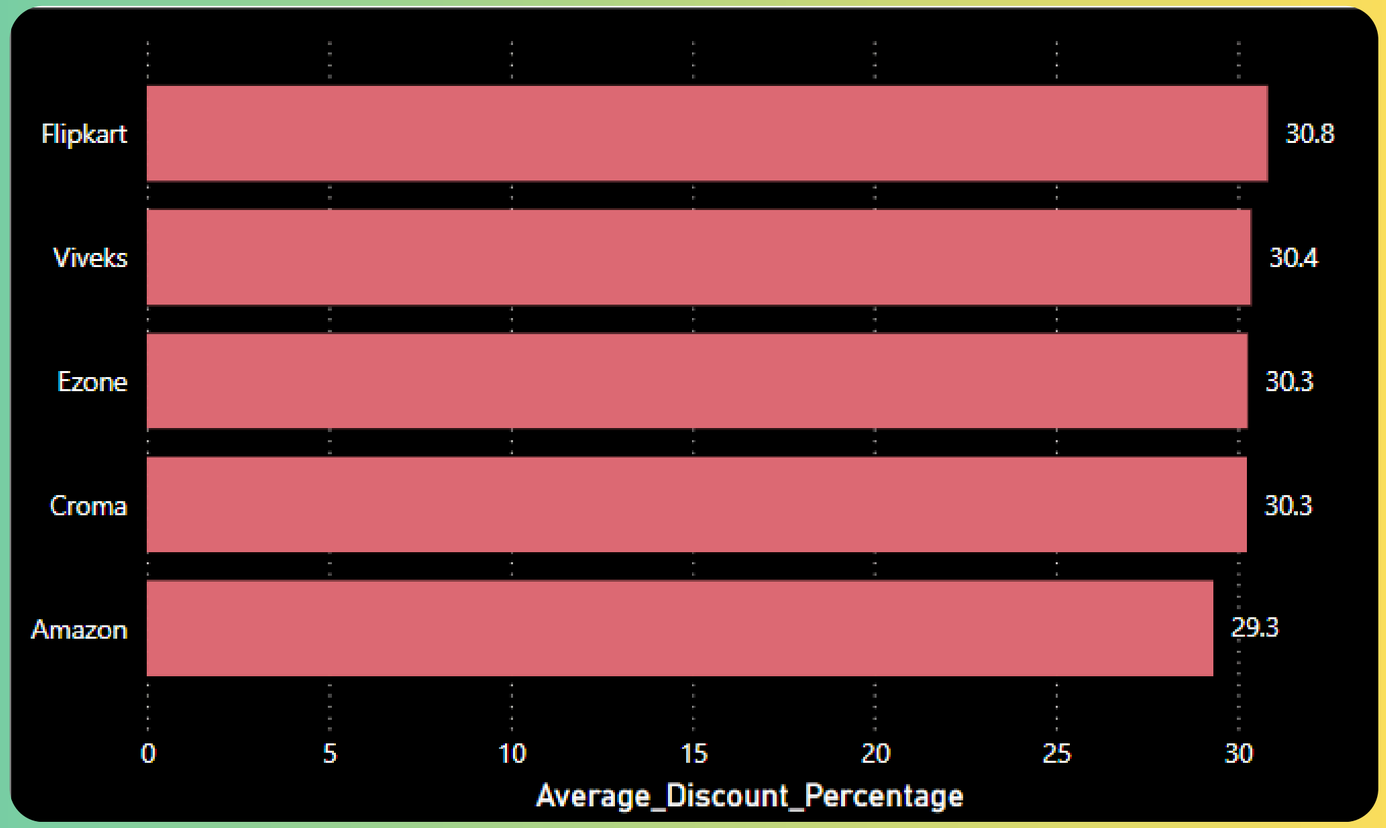


product_code	product	manufacturing_cost
A6120110206	AQ HOME Allin1 Gen 2	240.5364
A2118150101	AQ Master wired x1 Ms	0.8920

Q6. 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.

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

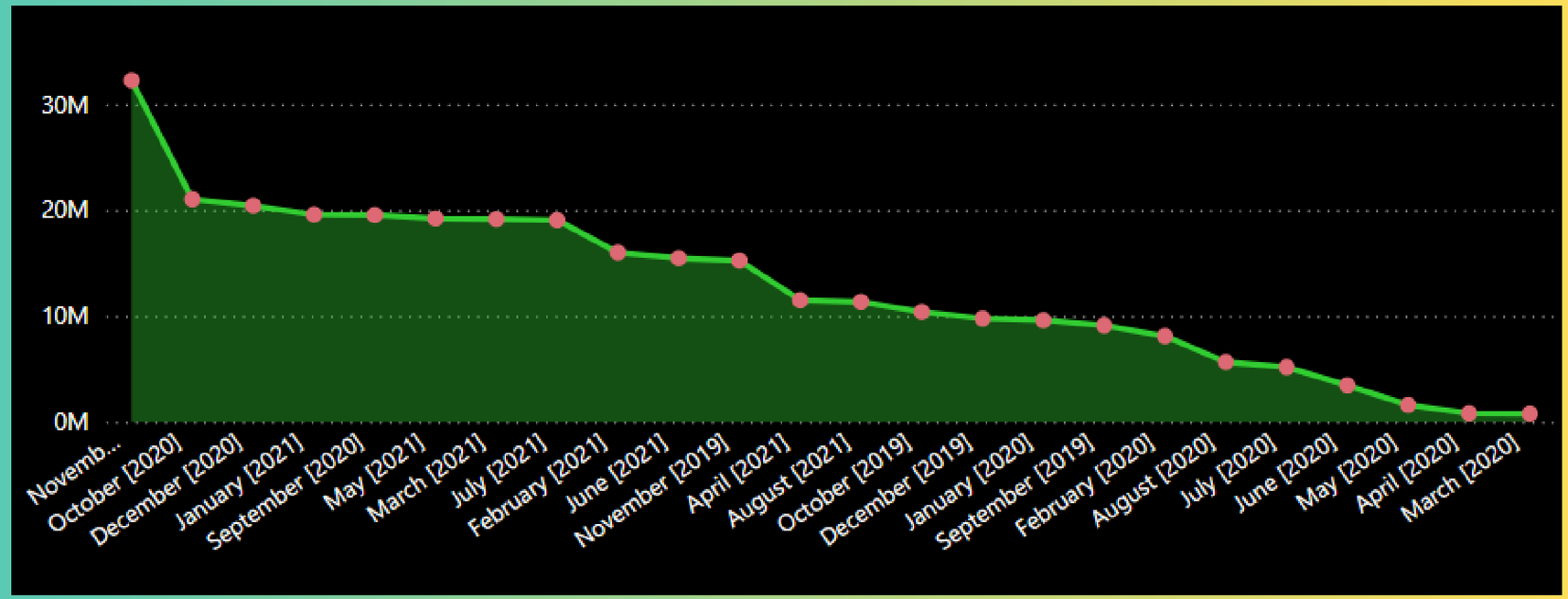
customer_code	customer	average_discount_percentage
90002009	Flipkart	30.83
90002006	Viveks	30.38
90002003	Ezone	30.28
90002002	Croma	30.25
90002016	Amazon	29.33



Q7. 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.

Month	Year	Gross_Sales_Amount
September [2019]	2020	9092670.34
October [2019]	2020	10378637.60
November [2019]	2020	15231894.97
December [2019]	2020	9755795.06
January [2020]	2020	9584951.94
February [2020]	2020	8083995.55
March [2020]	2020	766976.45
April [2020]	2020	800071.95
May [2020]	2020	1586964.48
June [2020]	2020	3429736.57
July [2020]	2020	5151815.40
August [2020]	2020	5638281.83
September [2020]	2021	19530271.30
October [2020]	2021	21016218.21
November [2020]	2021	32247289.79
December [2020]	2021	20409063.18
January [2021]	2021	19570701.71
February [2021]	2021	15986603.89
March [2021]	2021	19149624.92
April [2021]	2021	11483530.30
May [2021]	2021	19204309.41
June [2021]	2021	15457579.66
July [2021]	2021	19044968.82
August [2021]	2021	11324548.34

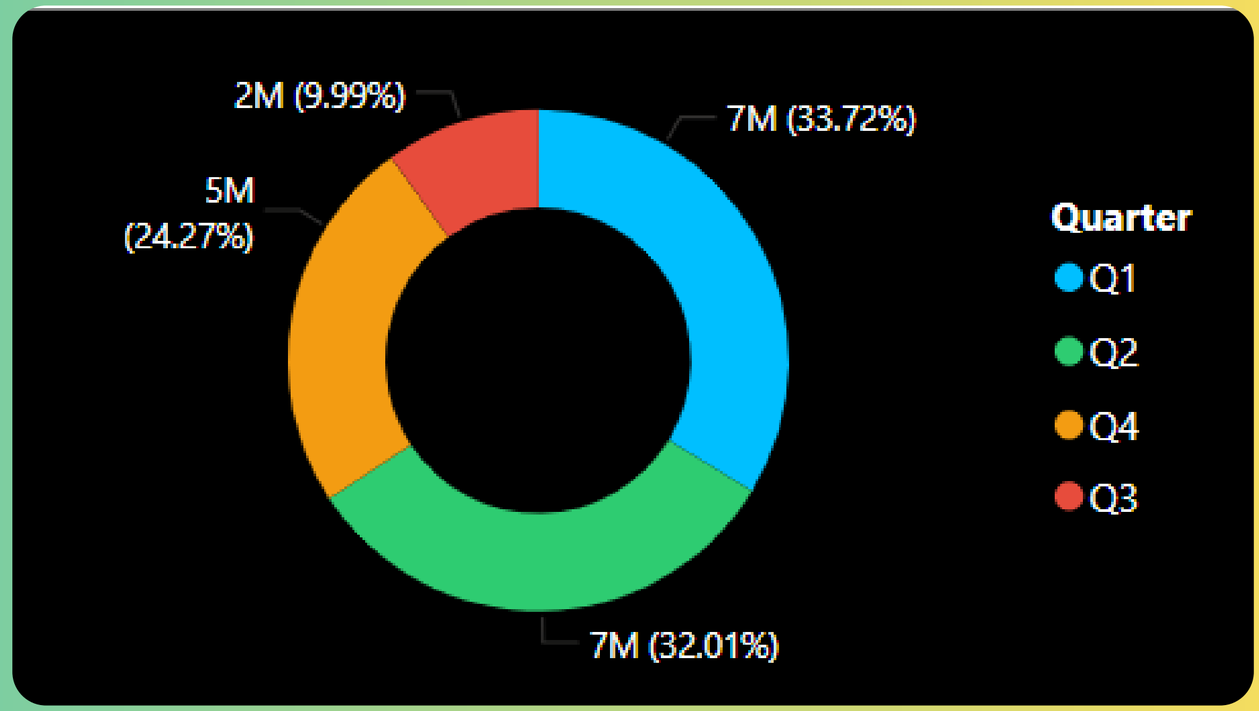
```sql
SELECT
    CONCAT(MONTHNAME(s.date), ' [', YEAR(s.date), ']') AS Month,
    s.fiscal_year AS Year,
    ROUND(SUM(s.sold_quantity * g.gross_price), 2) AS Gross_Sales_Amount
FROM fact_sales_monthly s
JOIN dim_customer c
    ON s.customer_code = c.customer_code
JOIN fact_gross_price g
    ON s.product_code = g.product_code
WHERE c.customer = 'Atliq Exclusive'
GROUP BY Month, s.fiscal_year
ORDER BY s.fiscal_year;
```



Q8. In which quarter of 2020, got the maximum total_sold_quantity?

```sql
SELECT
    CASE
        WHEN date BETWEEN '2019-09-01' AND '2019-11-30' THEN 'Q1'
        WHEN date BETWEEN '2019-12-01' AND '2020-02-29' THEN 'Q2'
        WHEN date BETWEEN '2020-03-01' AND '2020-05-31' THEN 'Q3'
        WHEN date BETWEEN '2020-06-01' AND '2020-08-31' THEN 'Q4'
    END AS quarter,
    SUM(sold_quantity) AS total_sold_quantity
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY quarter;
```

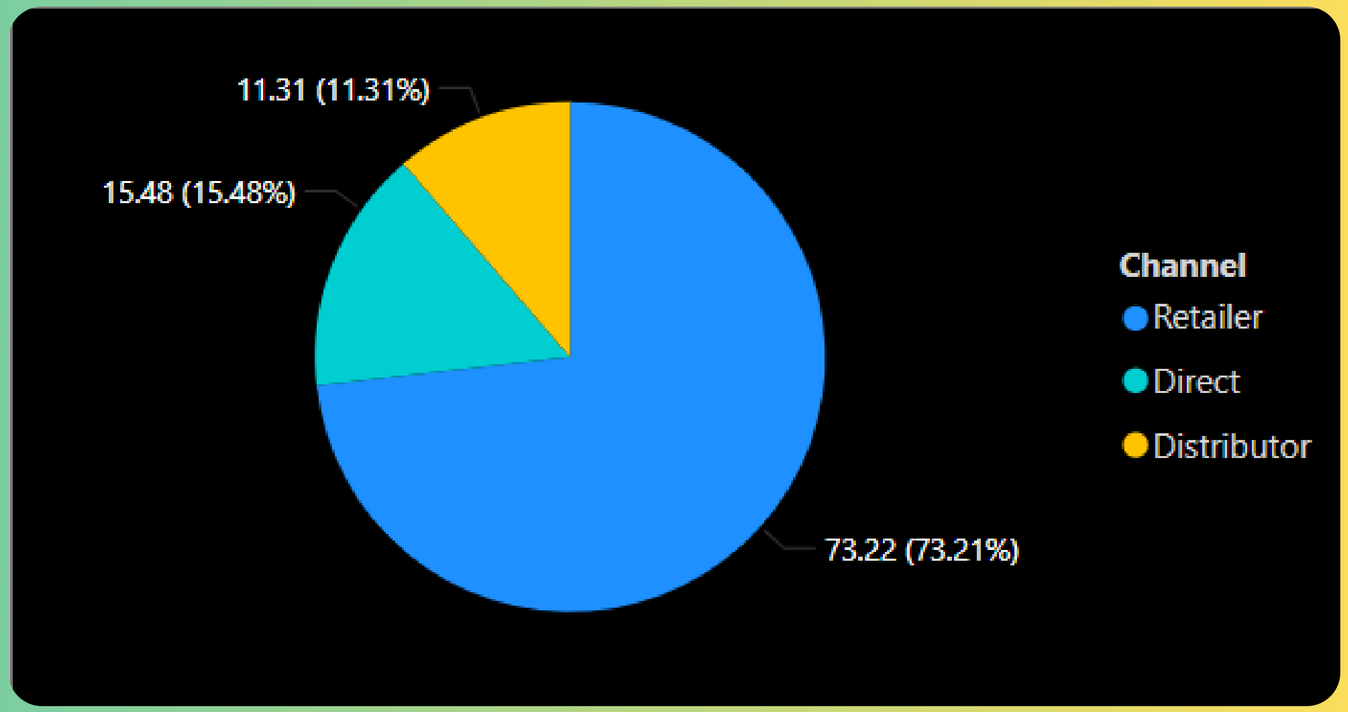
quarter	total_sold_quantity
Q1	7005619
Q2	6649642
Q3	2075087
Q4	5042541



Q9. Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution?

```sql
WITH CTE1 AS (
        SELECT
            c.channel,
            ROUND(SUM(g.gross_price * s.sold_quantity)/ 1000000, 2) AS gross_sales_mln
        FROM fact_sales_monthly s
        JOIN dim_customer c
            ON s.customer_code = c.customer_code
        JOIN fact_gross_price g
            ON s.product_code = g.product_code
        WHERE s.fiscal_year = 2021
        GROUP BY c.channel)
SELECT *,
        ROUND(gross_sales_mln*100/SUM(gross_sales_mln) OVER(),2) AS percentage
FROM CTE1
ORDER BY percentage DESC;
```

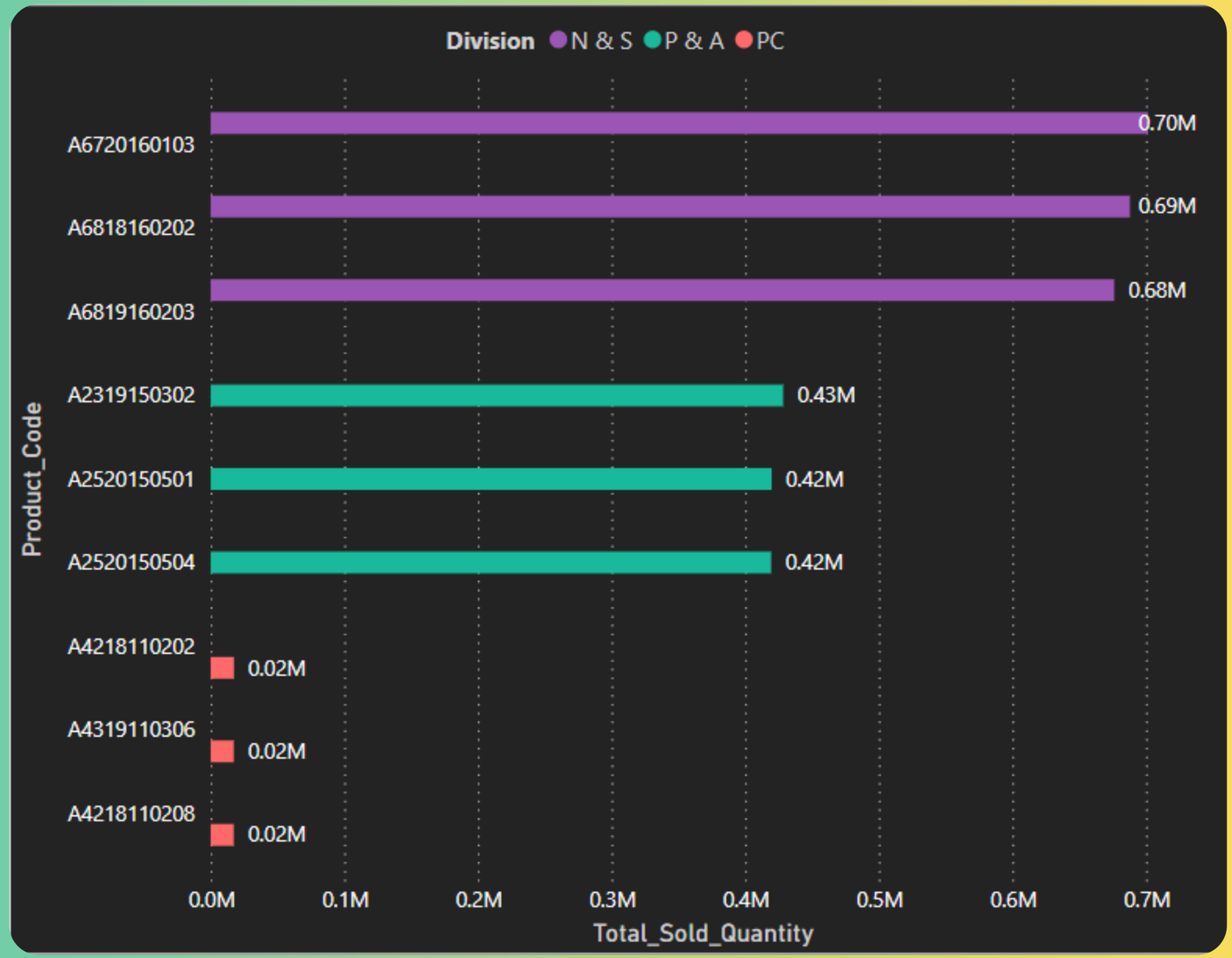
channel	gross_sales_mln	percentage
Retailer	1924.17	73.22
Direct	406.69	15.48
Distributor	297.18	11.31



Q10. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021

```sql
WITH CTE1 AS(
    SELECT
        division,
        s.product_code,
        product,
        SUM(s.sold_quantity) AS total_sold_quantity
    FROM dim_product p
    JOIN fact_sales_monthly s
        ON p.product_code = s.product_code
    WHERE fiscal_year = 2021
    GROUP BY division, s.product_code, product
),
CTE2 AS (
    SELECT
        *,
        RANK() OVER (PARTITION BY division ORDER BY total_sold_quantity DESC) AS rank_order
    FROM CTE1)
SELECT *
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



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