AtliQ Hardware

Consumer Goods Ad-Hoc Insights

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AtliQ Hardware

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About the Company

- AtliQ Hardware is a Computer Hardware and Accessory Manufacturer.
- The Company manufactures products under 3 major divisions i.e., Networking and Storage, PC, Peripherals & Accesories
- AtliQ Hardware is operational in NA, LATAM, EU and APAC regions

ABOUT
Objectives

AtliQ Hardware (fictitious corporation) is one of the major computer hardware manufacturers in India, with a strong presence in other nations.

Nevertheless, the management did note that they do not have sufficient insights to make prompt, wise, and data-informed judgments.

Plan to expand the data analytics team by adding junior data analysts.

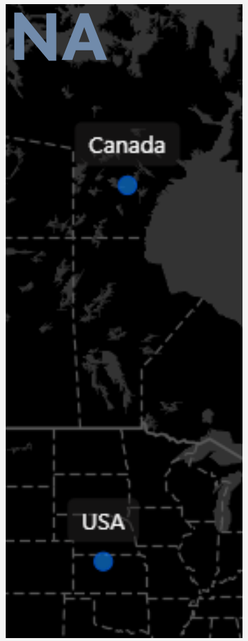
The company seeks insights for 10 ad hoc requests

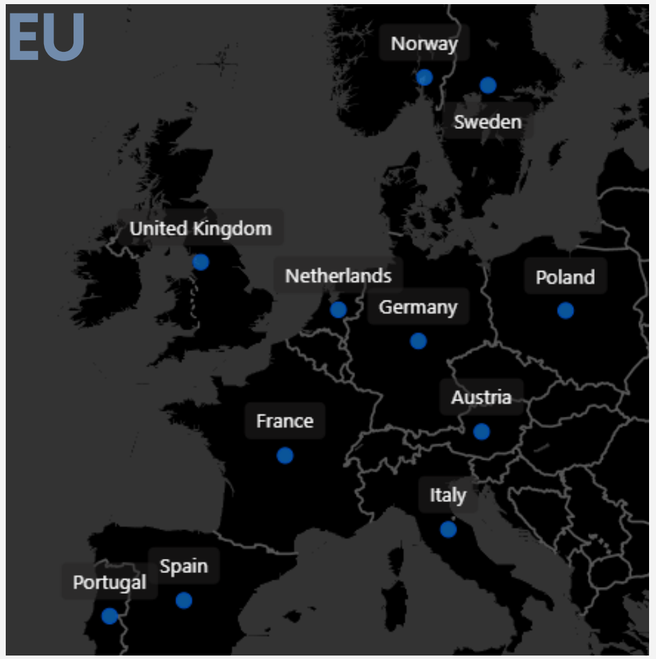
To assess candidates, Data analytics director, Tony Sharma plans to conduct a SQL Challenge to evaluate both tech and soft skills

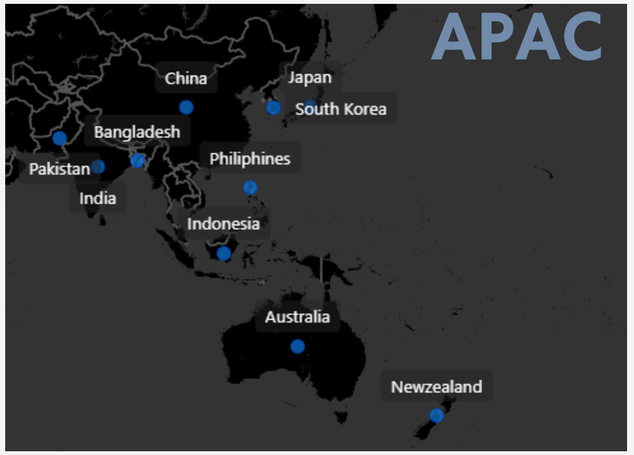
Company's Market

AtliQ Hardware operates across four major regions: North America (NA), Latin America (LATAM), Europe (EU), and Asia Pacific (APAC). This global presence allows AtliQ to serve diverse customer needs with products in Networking and Storage, PCs, Peripherals and Accessories.

In NA and EU, AtliQ benefits from strong demand for Advanced Computing Solutions. LATAM and APAC, with their growing economies, offer Significant Opportunities for Expansion. This strategic positioning ensures AtliQ's sustained growth and customer satisfaction worldwide.





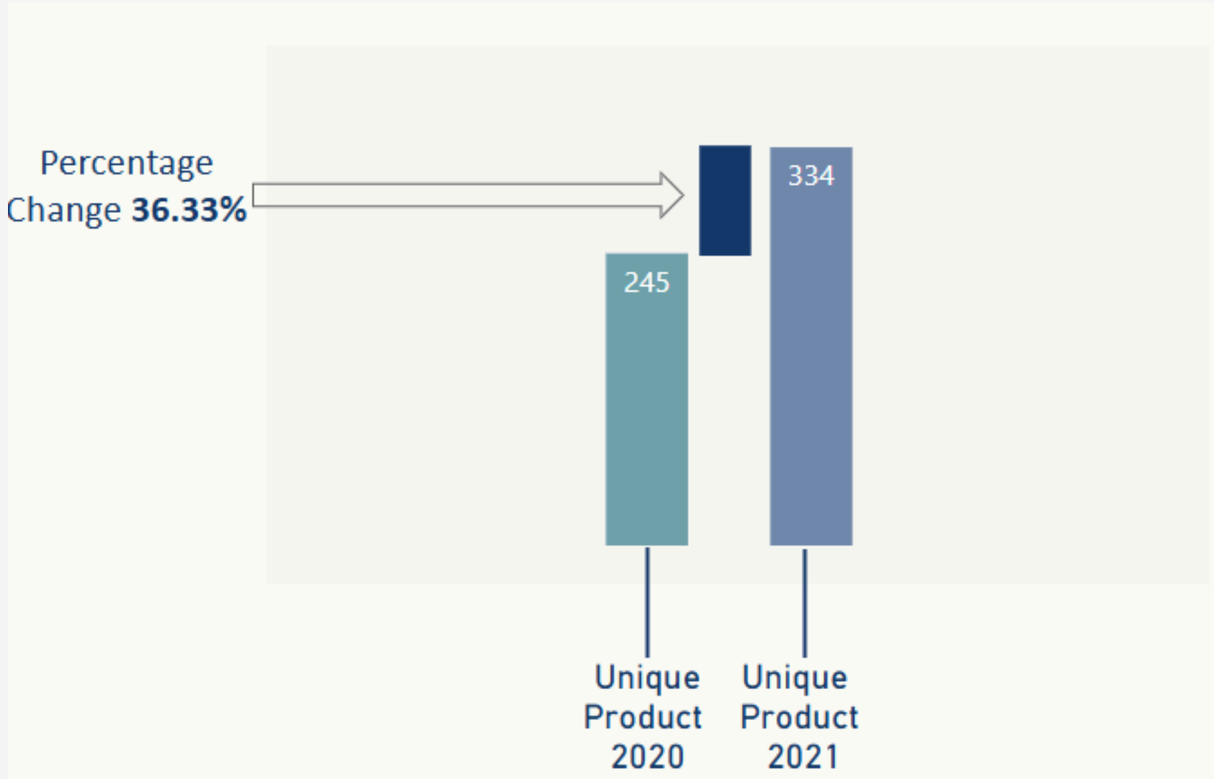


Request #1: Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.

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

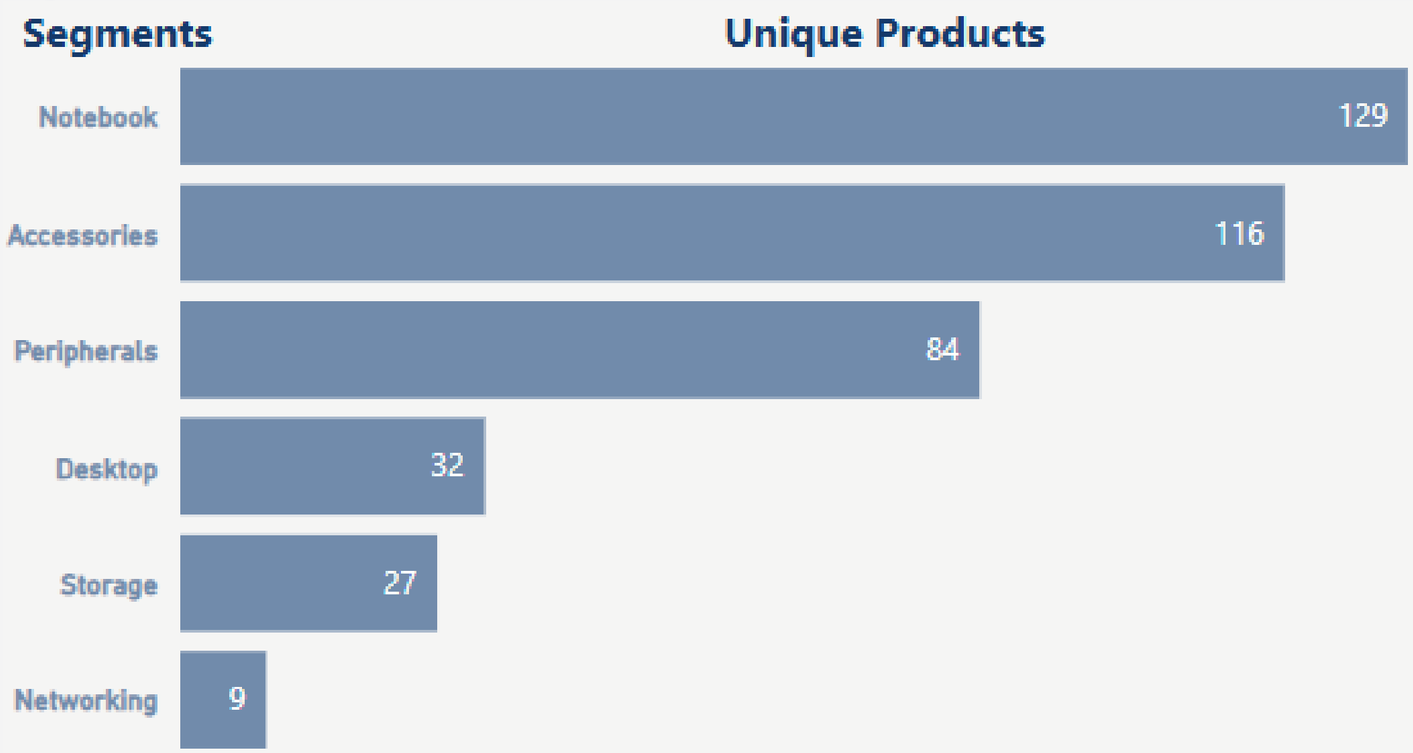
Request #2: What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields: unique_products_2020, unique_products_2021 and percentage_chg

```sql
WITH
    unique_products_2020 AS (
        SELECT
            COUNT( DISTINCT product_code ) AS unique_products_2020
        FROM
            fact_sales_monthly
        WHERE
            fiscal_year = 2020
    ),
    unique_products_2021 AS (
        SELECT
            COUNT( DISTINCT product_code ) AS unique_products_2021
        FROM
            fact_sales_monthly
        WHERE
            fiscal_year = 2021
    )
SELECT
    up20.unique_products_2020,
    up21.unique_products_2021,
    ROUND( ( (unique_products_2021 - unique_products_2020) * 100 ) / unique_products_2020, 2 ) AS percentage_chg
FROM
    unique_products_2020 up20,
    unique_products_2021 up21;
```



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 and product_count

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



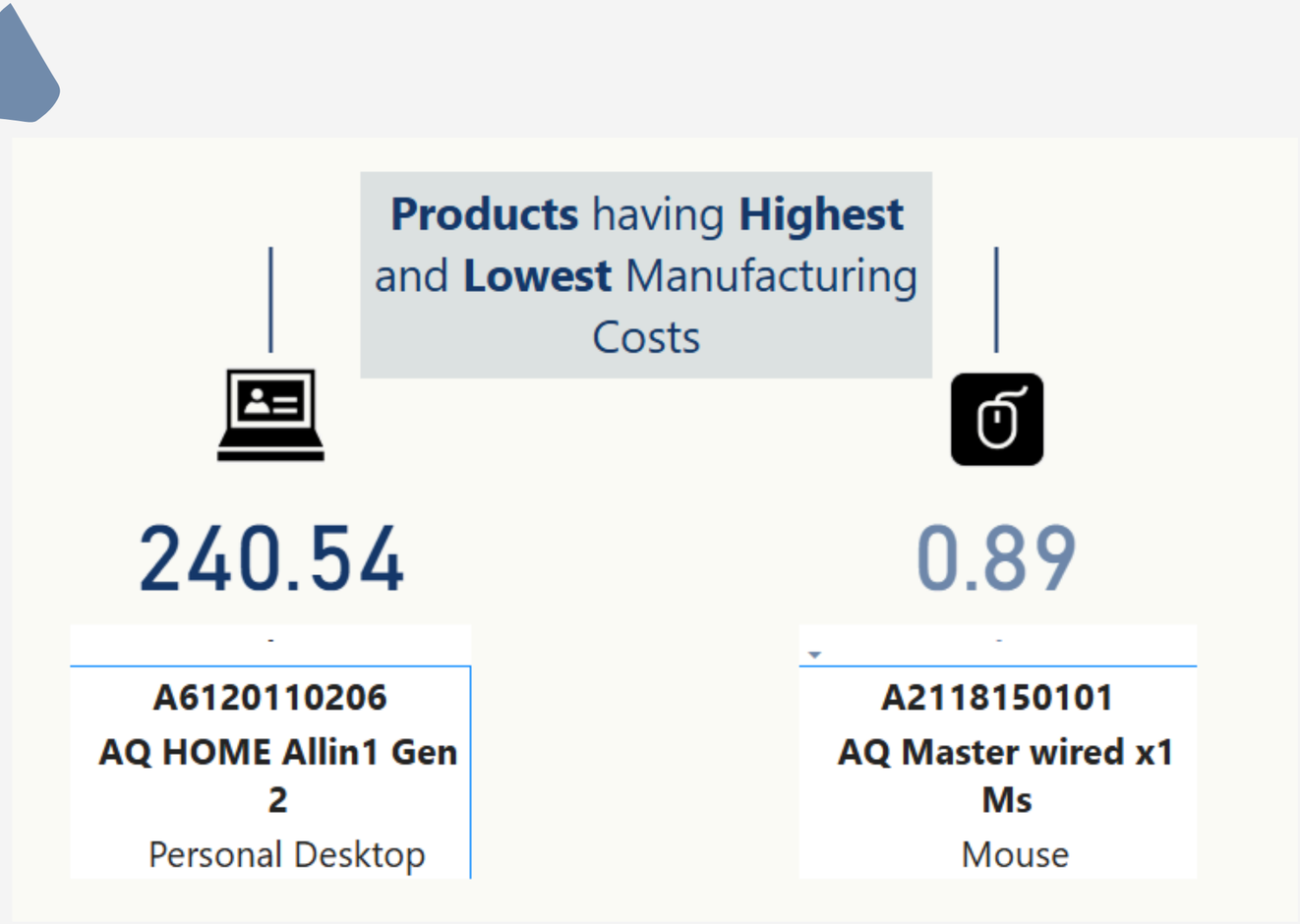
Request #4: Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields: segment product_count_2020 product_count_2021 difference

```sql
WITH count_2020 AS (
        SELECT dp.segment,
        COUNT( DISTINCT fsm.product_code ) AS product_count_2020
        FROM dim_product dp
        JOIN fact_sales_monthly fsm
        ON dp.product_code = fsm.product_code
        WHERE fsm.fiscal_year = 2020
        GROUP BY dp.segment
    ),
    count_2021 AS (
        SELECT dp.segment,
        COUNT( DISTINCT fsm.product_code ) AS product_count_2021
        FROM dim_product dp
        JOIN fact_sales_monthly fsm
        ON dp.product_code = fsm.product_code
        WHERE fsm.fiscal_year = 2021
        GROUP BY dp.segment
    )
SELECT
    c20.segment, c20.product_count_2020,
    c21.product_count_2021,
    ( c21.product_count_2021 - c20.product_count_2020 ) AS difference
FROM count_2020 c20
JOIN count_2021 c21
ON c20.segment = c21.segment
ORDER BY difference DESC;
```

Segment	Unique Products of 2020	Unique Products of 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

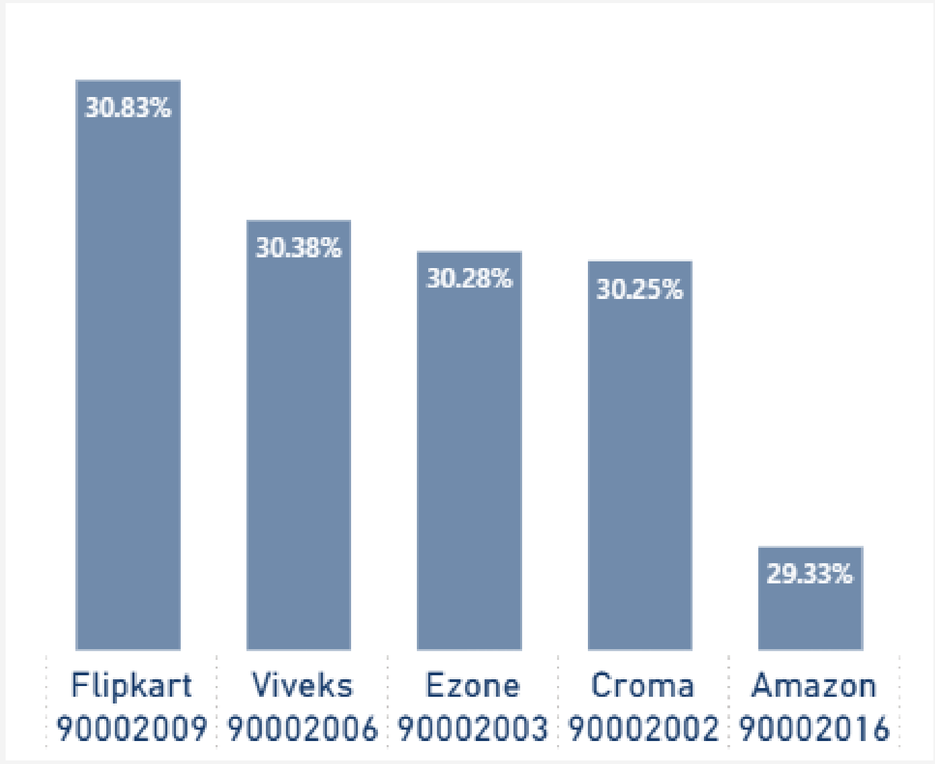
Request #5: Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields: product_code product manufacturing_cost

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



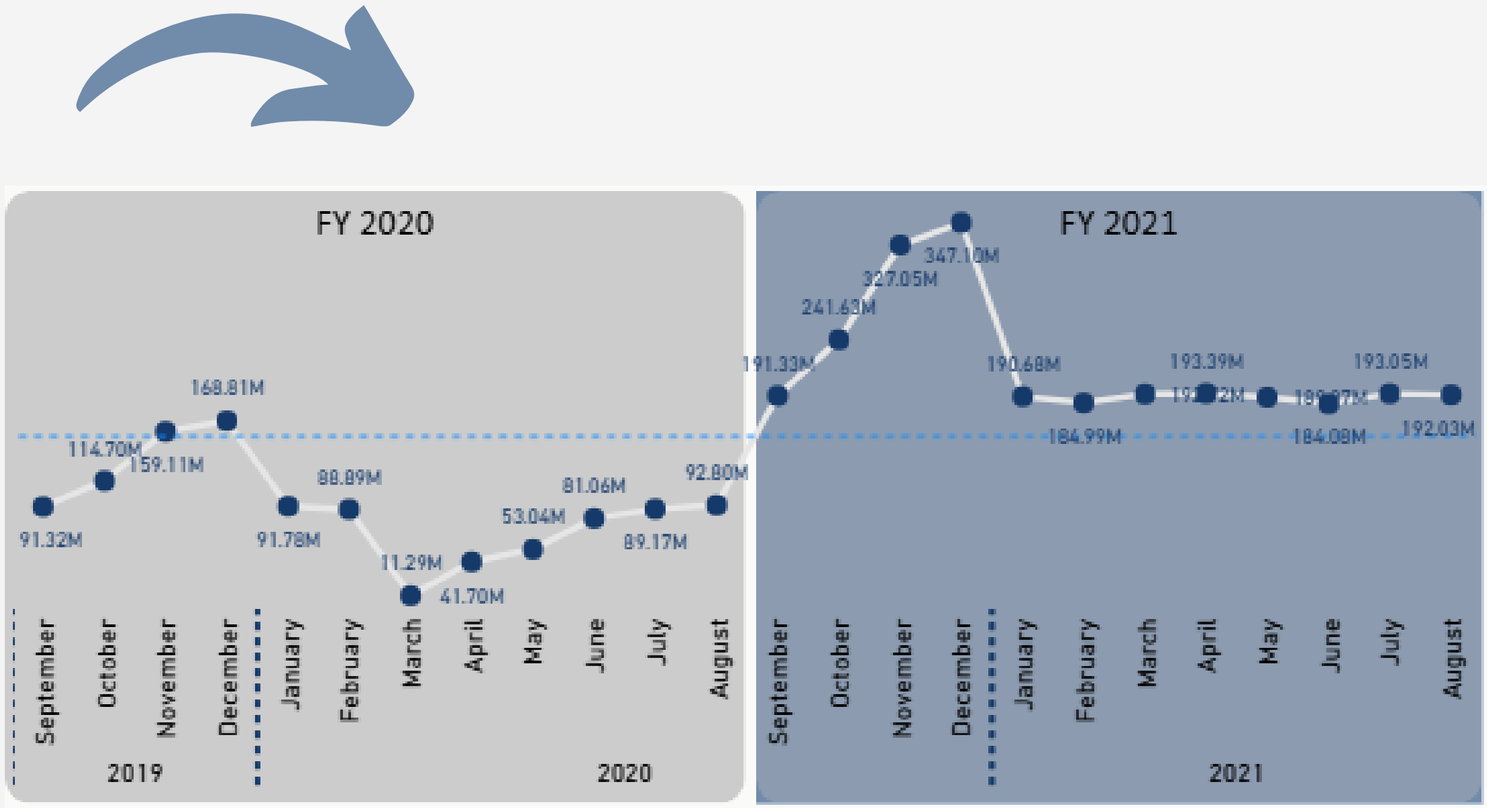
Request #6: Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields: customer_code, customer and average_discount_percentage

```sql
WITH tbl1 as (
SELECT
    customer_code AS cust_code_a,
    AVG(pre_invoice_discount_pct) AS pre_idp
FROM fact_pre_invoice_deductions
WHERE fiscal_year = 2021
GROUP BY customer_code
),

tbl2 as (
SELECT customer_code AS cust_code_b, customer AS cust FROM dim_customer WHERE market="india"
)

SELECT tbl2.cust_code_b, tbl2.cust, ROUND(tbl1.pre_idp, 4) as average_discount_percentage
FROM tbl1
JOIN tbl2
ON tbl1.cust_code_a = tbl2.cust_code_b
ORDER BY average_discount_percentage DESC
LIMIT 5;
```



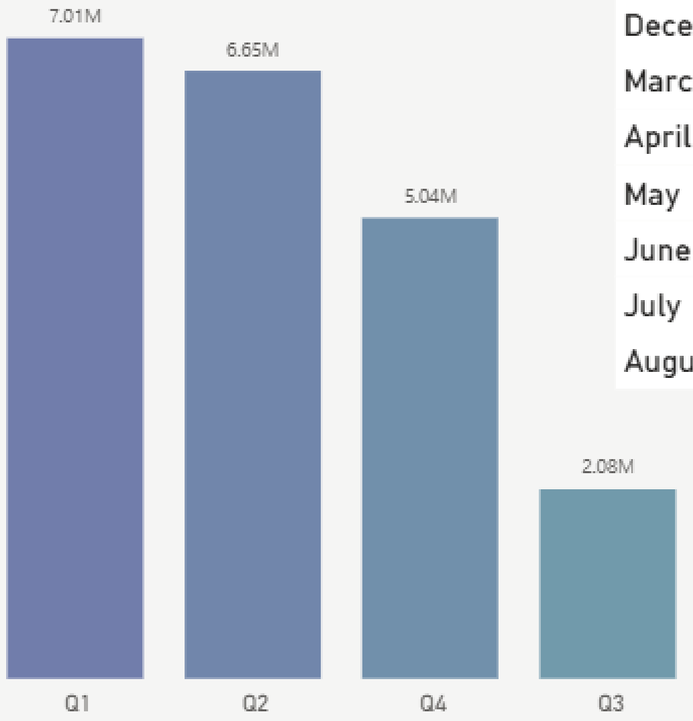
Request #7: Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month. This analysis helps to get an idea of low and high performing months and take strategic decisions. The final report contains these columns: Month, Year and Gross sales Amount

```sql
SELECT
    DATE_FORMAT( fsm.date, '%M (%Y)' ) AS Month,
    fsm.fiscal_year AS Fiscal_Year,
    ROUND( SUM( (fsm.sold_quantity * fgp.gross_price) ), 2 ) AS Gross_Sales_Amount
FROM
    fact_sales_monthly fsm
JOIN
    dim_customer dc
        ON
            dc.customer_code = fsm.customer_code
JOIN
    fact_gross_price fgp
        ON
            fgp.product_code = fsm.product_code
            AND
            fgp.fiscal_year = fsm.fiscal_year
WHERE
    dc.customer = 'Atliq Exclusive'
GROUP BY
    Month,
    Fiscal_Year
ORDER BY
    Fiscal_Year;
```



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

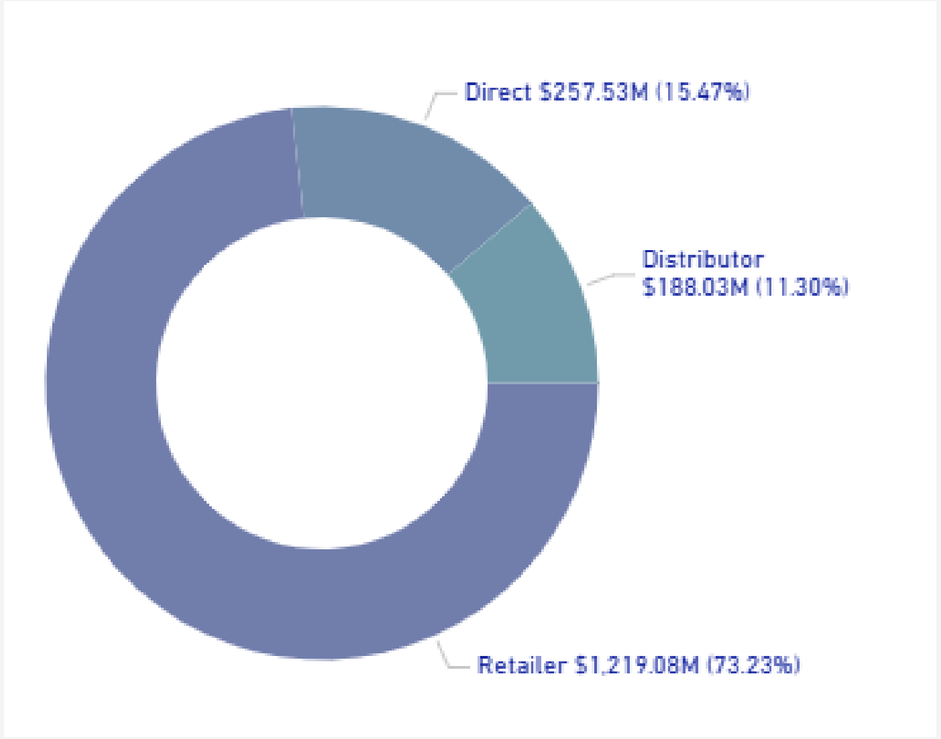
```sql
SELECT
CASE
    WHEN MONTH(date) IN (9, 10, 11) THEN 'Q1'
    WHEN MONTH(date) IN (12, 1, 2) THEN 'Q2'
    WHEN MONTH(date) IN (3, 4, 5) THEN 'Q3'
    WHEN MONTH(date) IN (6, 7, 8) THEN 'Q4'
 END AS Quarters,
ROUND(SUM(sold_quantity)/1000000,2) AS total_sold_quantity
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY Quarters
ORDER BY total_sold_quantity DESC;
```



Month	Quarters	Sum of sold_quantity
September	Q1	1.76M
October	Q1	2.19M
November	Q1	3.05M
January	Q2	1.76M
February	Q2	1.70M
December	Q2	3.18M
March	Q3	0.24M
April	Q3	0.82M
May	Q3	1.02M
June	Q4	1.56M
July	Q4	1.69M
August	Q4	1.79M

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 and percentage

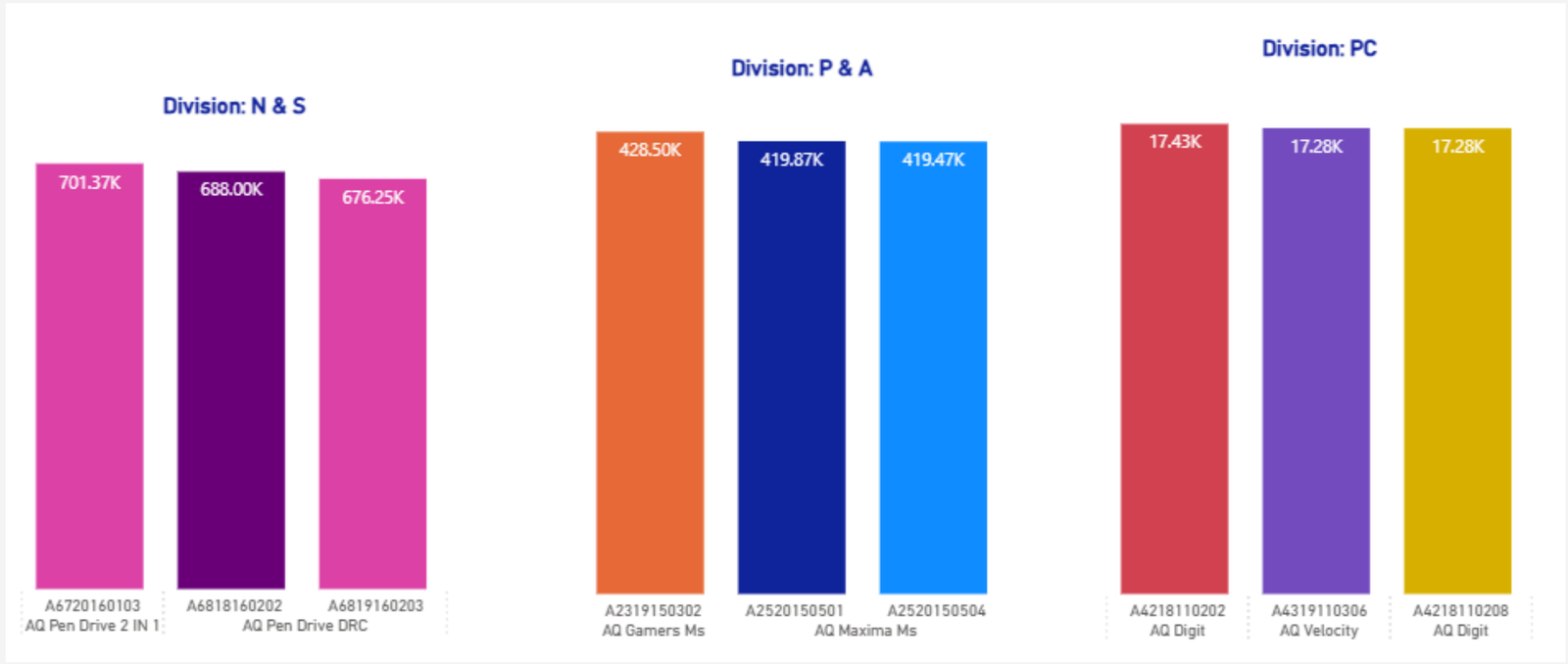
```sql
WITH
    channel_sales_2021 AS(
        SELECT
            dc.channel,
            ROUND( SUM( (fsm.sold_quantity * fgp.gross_price) / 1000000 ), 2 ) AS gross_sales_mln
        FROM
            fact_sales_monthly fsm
        JOIN
            dim_customer dc
                ON
                    fsm.customer_code = dc.customer_code
        JOIN
            fact_gross_price fgp
                ON
                    fsm.product_code = fgp.product_code
                    AND
                    fsm.fiscal_year = fgp.fiscal_year
        WHERE
            fsm.fiscal_year = 2021
        GROUP BY
            dc.channel
        ORDER BY
            gross_sales_mln DESC
    ),
    total_sales_2021 AS(
        SELECT
            SUM(gross_sales_mln) AS total_gross_sales_mln
        FROM
            channel_sales_2021
    )
```


```sql
SELECT
    cs21.channel,
    CONCAT( cs21.gross_sales_mln, 'M' ) AS gross_sales_mln,
    CONCAT( ROUND( ( (cs21.gross_sales_mln * 100) / ts21.total_gross_sales_mln ), 2 ), '%' ) AS percentage
FROM
    channel_sales_2021 cs21,
    total_sales_2021 ts21;
```

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, product, total_sold_quantity and rank_order

```sql
WITH product_table AS (
  SELECT
    p.division,
    p.product_code,
    p.product,
    SUM(fs.sold_quantity) AS total_sold_quantity
  FROM fact_sales_monthly fs
  JOIN dim_product p ON fs.product_code = p.product_code
  WHERE fs.fiscal_year = 2021
  GROUP BY p.division, p.product_code, p.product
),
ranked_products AS (
  SELECT
    division,
    product_code,
    product,
    total_sold_quantity,
    DENSE_RANK() OVER (PARTITION BY division ORDER BY total_sold_quantity DESC) AS rank_order
  FROM product_table
)
SELECT
  division,
  product_code,
  product,
  total_sold_quantity,
  rank_order
FROM ranked_products
WHERE rank_order <= 3;
```



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