

# CONSUMER GOODS ANALYSIS

*Presented by: Sanjeev Chaurasia*



# OVERVIEW

AtliqHardwaresis one of the leading computer hardware producers in India and well expanded in other countries too. Founded in 2017, AtliQ emerged as an IT & Business Consulting company dedicated to facilitating the seamless integration of business processes through automated tools.

Their strategic insights and dependable processes have yielded exceptional outcomes across diverse industries, fostering contented clients, fruitful partnerships, and rapid expansion.



# OBJECTIVE

The management noticed that they do not get enough insights to make quick and smart data-informed decisions.

They want to expand their data analytics team by adding several junior data analysts.

Tony Sharma, their data analytics director wanted to hire someone who is good at both tech and soft skills. Hence, he decided to conduct a SQL challenge which will help him understand both the skills.

As part of this challenge, I have solved the 10 AD-Hoc requests and presented my insights.

Let's go over how I did it.



# AD\_HOC-REQUEST:1

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

```
AD-HOC-REQUEST-1  
...  
  
SELECT DISTINCT market  
FROM dim_customer  
WHERE customer = 'Atliq Exclusive'  
AND region = 'APAC';
```

SQL Query

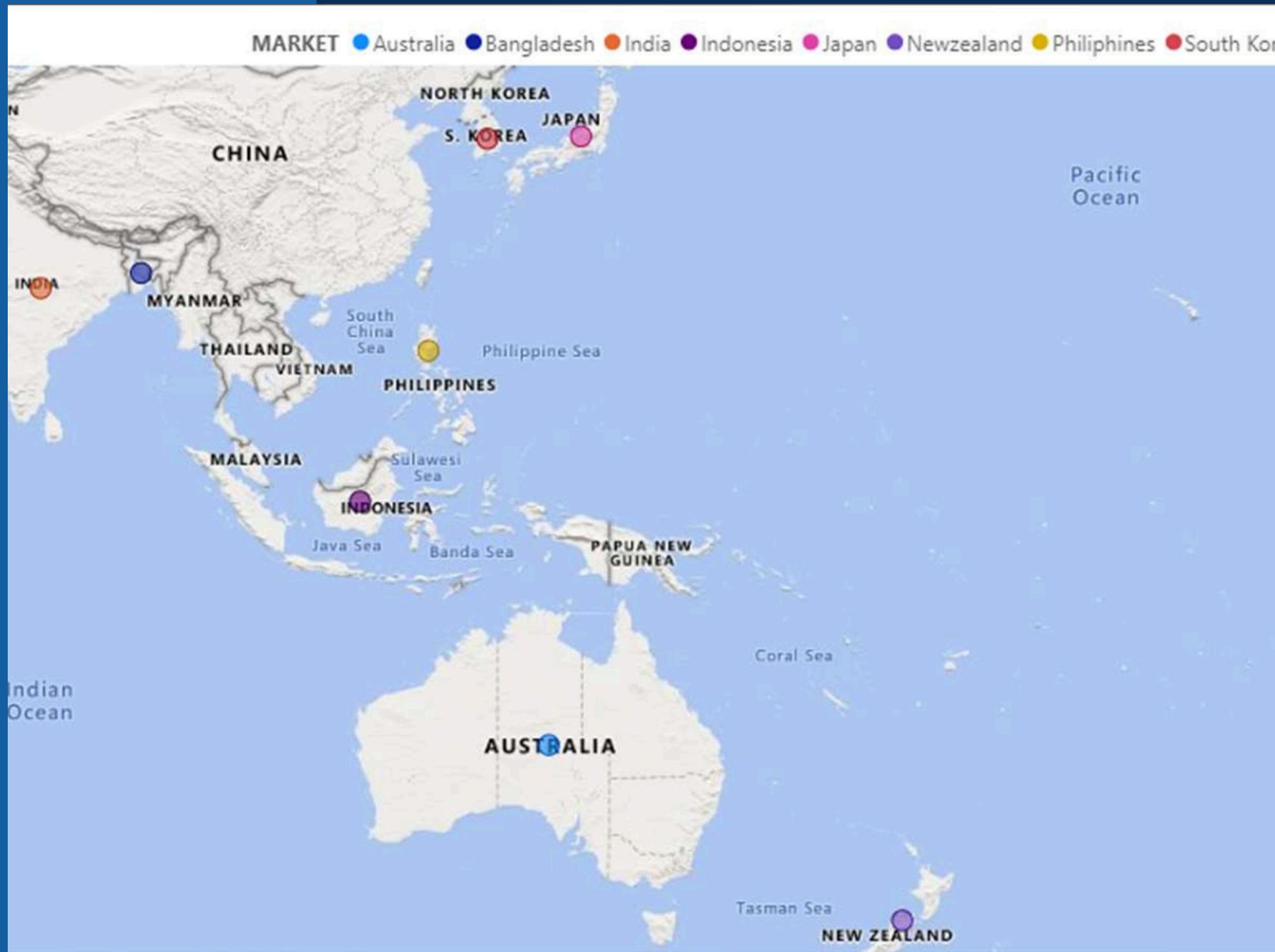
Output

Market
India
Indonesia
Japan
Philippines
South Korea
Australia
Newzealand
Bangladesh

# VISUALS-1

## Insight

- "AtliqExclusive" has a presence in several countries across the APAC region, including India, Indonesia, Japan, the Philippines, South Korea, Australia, New Zealand, and Bangladesh.
- It reflects a robust market presence and adaptability to different cultural and economic contexts in the Asia-Pacific region.



# AD\_HOC-REQUEST:2

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

SQL Query

Output

	Unique_product_2020	Unique_product_2021	ptc_change
▶	245	334	36.33

AD-HOC-REQUEST-2

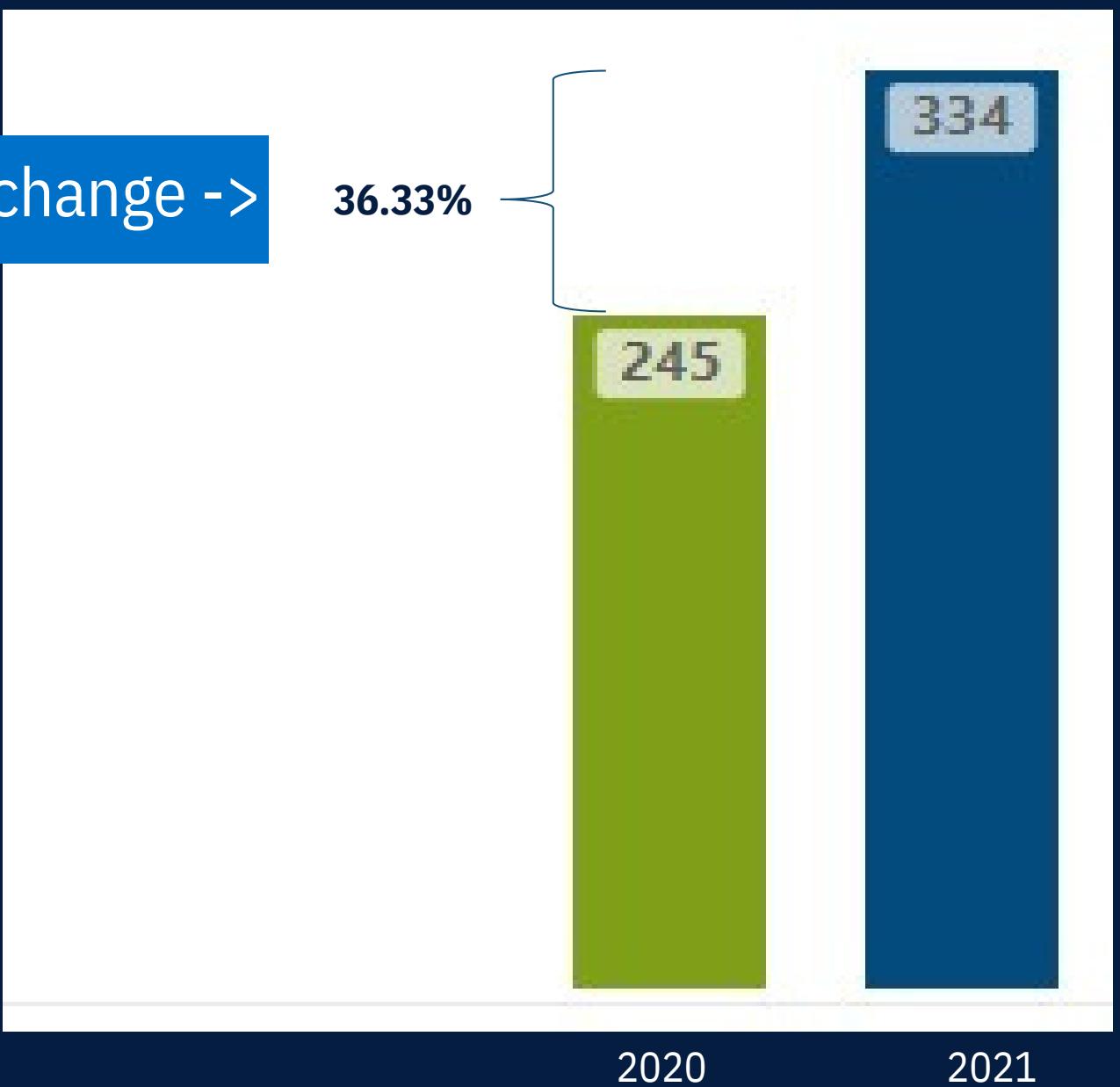
```
WITH unique_product
      AS (SELECT Count(DISTINCT product_code)AS Unique_product_2020,
                 (SELECT Count(DISTINCT product_code) AS Unique_product_2021
                  FROM fact_sales_monthly
                  WHERE fiscal_year = 2021
                  GROUP BY fiscal_year)      AS Unique_product_2021
          FROM fact_sales_monthly
          WHERE fiscal_year = 2020
          GROUP BY fiscal_year)
SELECT *, 
       Round(( ( unique_product_2021 - unique_product_2020 ) /
unique_product_2020 * 
100 ), 2) AS ptc_change
FROM unique_product ;
```

## VISUALS-2

### Insight

- There was a significant increase in unique products, with 334 in 2021 compared to 245 in 2020.
- The percentage change represents a growth of 36.33% in unique products from one year to the next.
- This substantial increase in unique products suggests a focus on expanding product offerings, which can attract a broader customer base and potentially boost sales and revenue.
- It's a positive indicator of business growth and adaptability to changing market demands.

### Unique Products



# AD\_HOC-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.

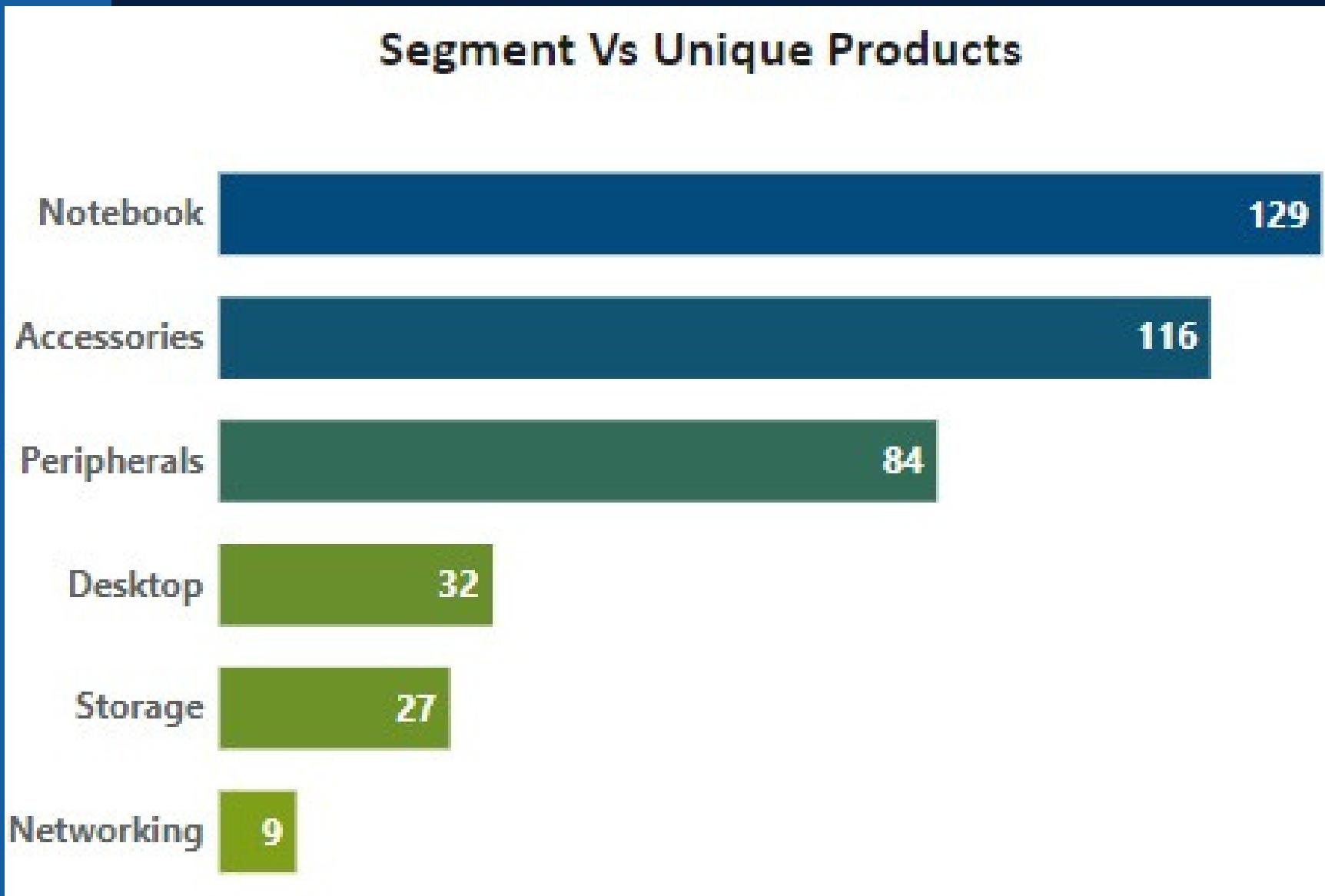
SQL Query

```
AD-HOC-REQUEST-3  
  
SELECT Count(DISTINCT product_code) AS product_count,  
       segment  
FROM   dim_product  
GROUP  BY segment  
ORDER  BY product_count DESC;
```

Output

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

# VISUALS-3



## Insight

- The "Notebook" segment has the highest product count, with 129 products.
- The "Networking" segment has the smallest product count with only 9 products.
- These insights indicate the diversity and product offerings within each segment, with "Notebook" and "Accessories" offering a wide range of options, while "Networking" has a more limited selection.
- The variety in product offerings allows catering to various customer preferences and needs across different segments

# AD\_HOC-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.

```
AD-HOC-REQUEST-4

WITH productcounts
AS (SELECT p.segment,
           Count(DISTINCT CASE
                           WHEN fiscal_year = 2020 THEN p.product_code
                         END) AS product_count_2020
      FROM dim_product p
      JOIN fact_sales_monthly m
        ON p.product_code = m.product_code
     WHERE fiscal_year = 2020
      GROUP BY p.segment),
productcounts2021
AS (SELECT p.segment,
           Count(DISTINCT p.product_code) AS product_count_2021
      FROM dim_product p
      JOIN fact_sales_monthly m
        ON p.product_code = m.product_code
     WHERE fiscal_year = 2021
      GROUP BY p.segment)
SELECT pc.segment,
       pc.product_count_2020,
       pc2021.product_count_2021,
       pc2021.product_count_2021 - pc.product_count_2020 AS difference
  FROM productcounts pc
  JOIN productcounts2021 pc2021
    ON pc.segment = pc2021.segment
 ORDER BY difference DESC;
```

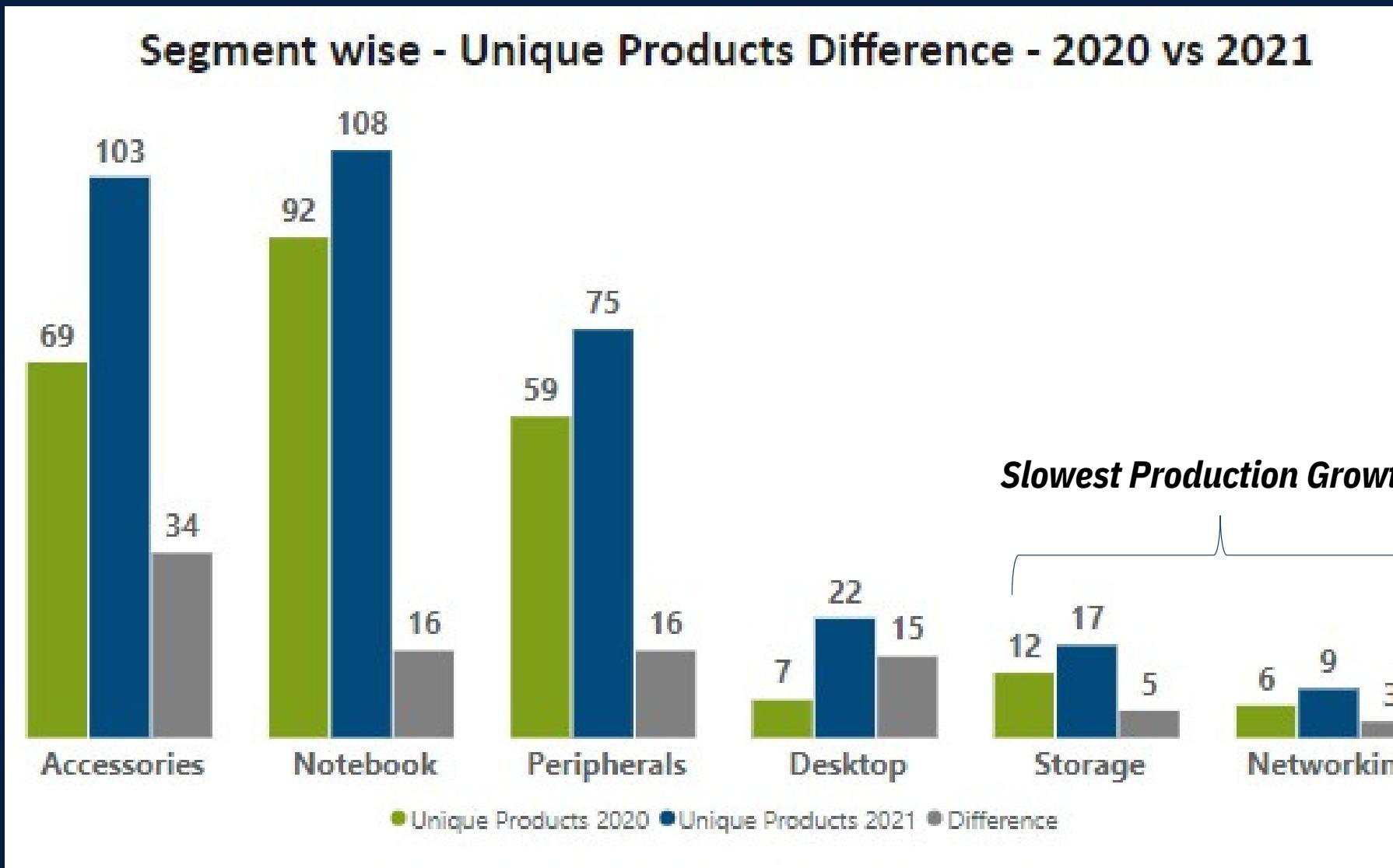
SQL Query

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

# VISUALS-4

## Insight



- The "Accessories" segment saw a significant increase in product counts, with 34 more products in 2021 compared to 2020.
- These insights suggest a general trend of product portfolio growth, particularly in the "Accessories" and "Notebook" segments, which can indicate a strategy to cater to a broader range of customer preferences.
- The growth in product variety may enhance market competitiveness and offer customers more choices.

# AD\_HOC-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 Query

Output

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

AD-HOC-REQUEST-5

```
...  
WITH cte  
    AS (SELECT fm.product_code,  
            p.product,  
            fm.manufacturing_cost,  
            Rank()  
                OVER (  
                    ORDER BY fm.manufacturing_cost ASC) AS cost_rank_asc,  
            Rank()  
                OVER (  
                    ORDER BY fm.manufacturing_cost DESC) AS cost_rank_desc  
        FROM fact_manufacturing_cost fm  
        JOIN dim_product p  
            ON fm.product_code = p.product_code)  
    SELECT product_code,  
           product,  
           Round(manufacturing_cost, 2) AS Manufacturing_cost  
    FROM cte  
    WHERE cost_rank_asc = 1  
      OR cost_rank_desc = 1;
```

# VISUALS-5

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



A2118150101  
AQ Master wired x1 Ms



A612110208  
AQ Home Allin1 Gen 2

## Insight

- "AQ HOME Allin1 Gen 2" has a relatively higher manufacturing cost of 240.5364.
- In contrast, "AQ Master wired x1 Ms" has a significantly lower manufacturing cost of 0.892.

# AD\_HOC-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.

SQL Query

```
AD-HOC-REQUEST-6
SELECT pd.customer_code,
       c.customer,
       Round(pd.pre_invoice_discount_pct * 100, 2) AS avg_discount_pct
FROM fact_pre_invoice_deductions pd
      JOIN dim_customer c
        ON pd.customer_code = c.customer_code
WHERE market = 'india'
      AND fiscal_year = 2021
ORDER BY pd.pre_invoice_discount_pct DESC
LIMIT 5;
```

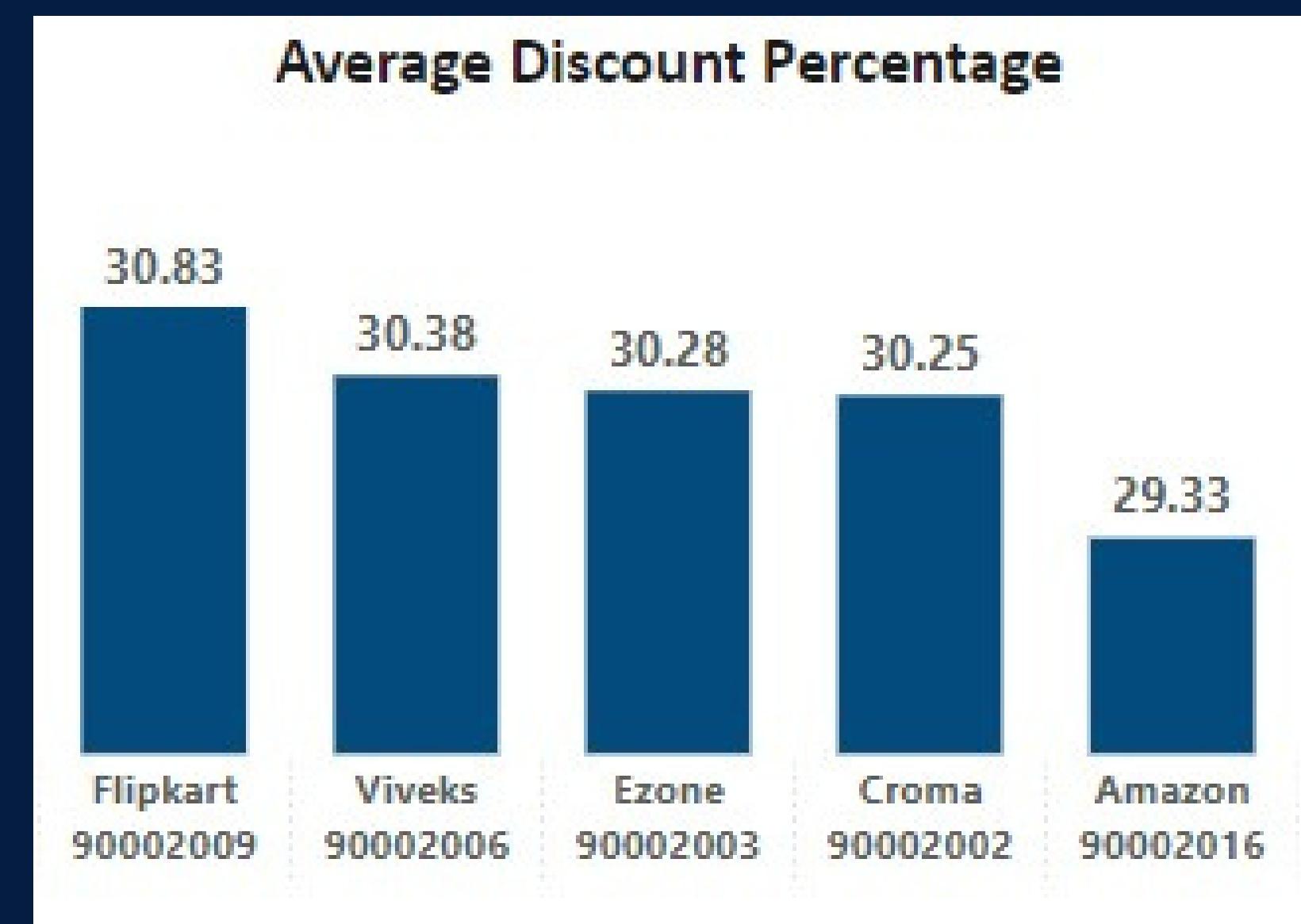
Output

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

# VISUALS-6

## Insight

- "Flipkart" has the highest average pre-invoice discount percentage at 30.83%.
- "Amazon" has a comparatively lower average discount at 29.33%.
- These insights indicate varying discount strategies among customers, with "Flipkart" and "Viveks" offering the highest average discounts, potentially attracting cost-conscious shoppers.
- "Amazon" provides relatively lower discounts, suggesting a different pricing strategy or a customer base less sensitive to discounts.
- These insights can be valuable for adjusting discount strategies and understanding customer preferences.



# AD\_HOC-REQUEST:7

Get the complete report of the Gross sales amount for the customer “AtliqExclusive” 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.

## SQL Query

```
AD-HOC-REQUEST-7

SELECT Monthname(FS.date) AS Month,
       FS.fiscal_year,
       Concat(Round(Sum(G.gross_price * FS.sold_quantity) / 1000000, 2), "m") AS
       Gross_sales_Amount
FROM fact_sales_monthly FS
JOIN dim_customer C
  ON FS.customer_code = C.customer_code
JOIN fact_gross_price G
  ON FS.product_code = G.product_code
WHERE C.customer = 'Atliq Exclusive'
GROUP BY month,
         FS.fiscal_year
ORDER BY FS.fiscal_year DESC;
```

Output

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

# VISUALS-7

gross\_sales\_amt by month and fiscal\_year

fiscal\_year ● 2020 ● 2021



## Insight

- November 2021 had the highest gross sales amount, reaching \$32,247,289.79.
- In contrast, the fiscal year 2021 started with lower sales in September but still had a significant peak in November.
- There is a notable seasonality in sales, with November being a consistently strong month.
- The months of March and April in fiscal year 2020 had relatively low sales, which improved in fiscal year 2021.
- These insights can guide strategic decisions, such as focusing marketing efforts and inventory planning around the peak sales months and addressing potential challenges during lower sales months.

# AD\_HOC-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 and Quarter.

## SQL Query

AD-HOC-REQUEST-8

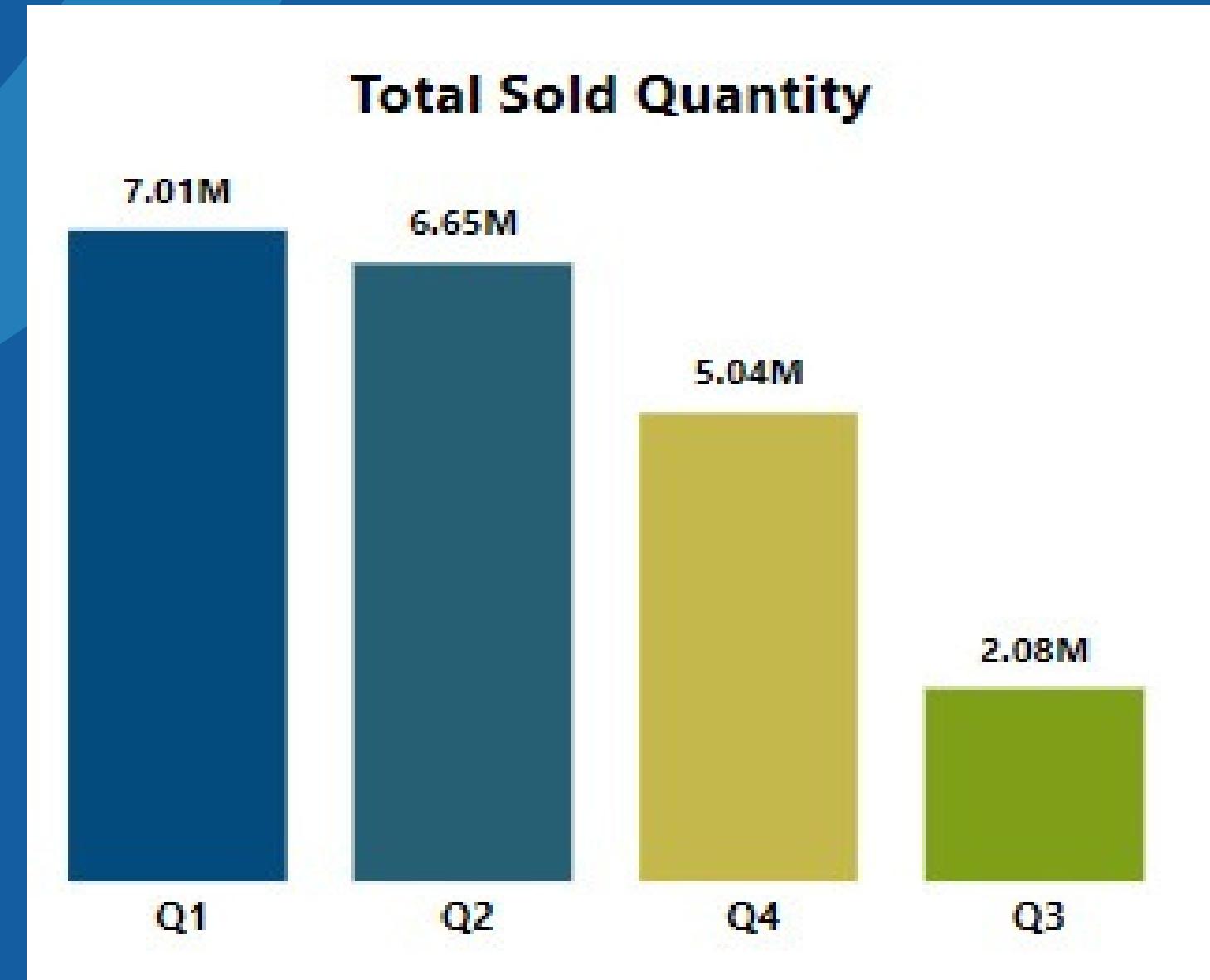
```
SELECT CASE
    WHEN date BETWEEN '2019-09-01' AND '2019-11-01' THEN 'Q1'
    WHEN date BETWEEN '2019-12-01' AND '2020-02-01' THEN 'Q2'
    WHEN date BETWEEN '2020-03-01' AND '2020-05-01' THEN 'Q3'
    WHEN date BETWEEN '2020-06-01' AND '2020-08-01' THEN 'Q4'
end
AS quarters,
Round(Sum(sold_quantity) / 1000000, 2) AS total_sold_quantity_in_mln
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY quarters
ORDER BY total_sold_quantity_in_mln DESC;
```

Output

quarters	total_sold_quantity_in_mln
Q1	7.01
Q2	6.65
Q4	5.04
Q3	2.08

# VISUALS-8

## Insight



- The highest total sold quantity is in Q1, with 7,005,619 units.
- These insights highlight a seasonal variation in sales, with Q1 and Q2 being the strongest quarters and Q3 being the weakest.
- This information is valuable for planning inventory and marketing strategies to align with seasonal demand.

# AD\_HOC-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.

SQL Query

Output

channel	gross_sales_mln	percentage
Retailer	3708.46	73.21
Direct	784.14	15.48
Distributor	572.86	11.31

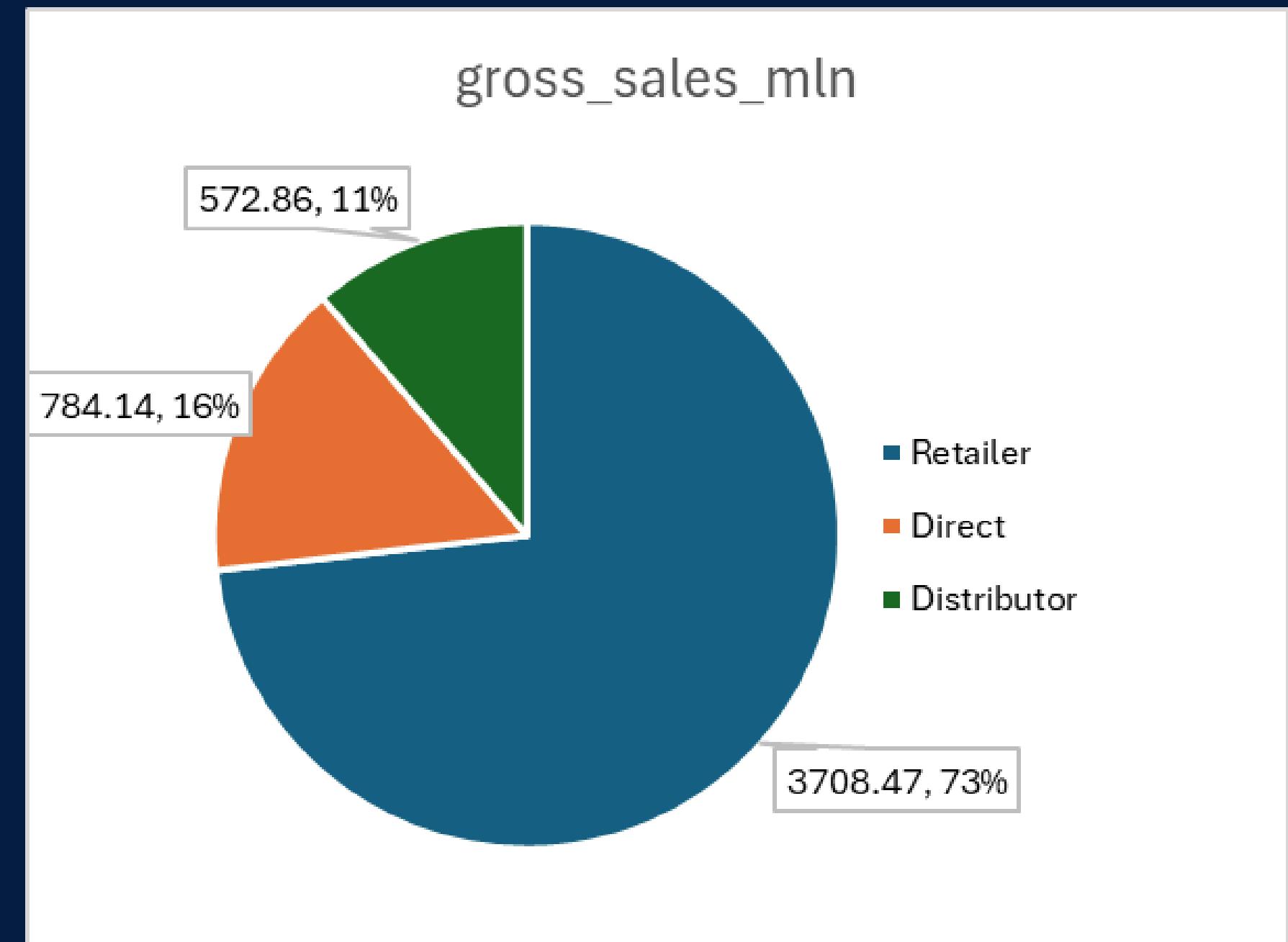
```
AD-HOC-REQUEST-9

WITH cte1
    AS (SELECT c.channel,
               fm.fiscal_year,
               SUM(fm.sold_quantity * fp.gross_price) AS total_sales
        FROM dim_customer c
         JOIN fact_sales_monthly fm
           ON c.customer_code = fm.customer_code
         JOIN fact_gross_price fp
           ON fm.product_code = fp.product_code
       WHERE fm.fiscal_year = 2021
       GROUP BY c.channel
       ORDER BY total_sales DESC)
SELECT channel,
       Round(( total_sales / 1000000 ), 2) AS gross_sales_mln,
       Round(total_sales * 100 / SUM(total_sales)
             OVER(), 2) AS percentage
FROM cte1
```

# VISUALS-9

## Insight

- The "Retailer" channel accounts for the majority of sales, contributing to 73% of gross sales.
- The "Direct" channel also plays a significant role, representing 16% of gross sales.
- The "Distributor" channel contributes 11% of gross sales.
- A significant focus on the "Retailer" channel suggests it is the primary revenue driver.
- Diversification and growth opportunities may be explored in the "Direct" and "Distributor" channels to further maximize sales.



# AD\_HOC-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, rank\_order.

## SQL Query

AD-HOC-REQUEST-10

```
WITH cte
AS (SELECT s.product_code,
           p.product,
           p.division,
           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)

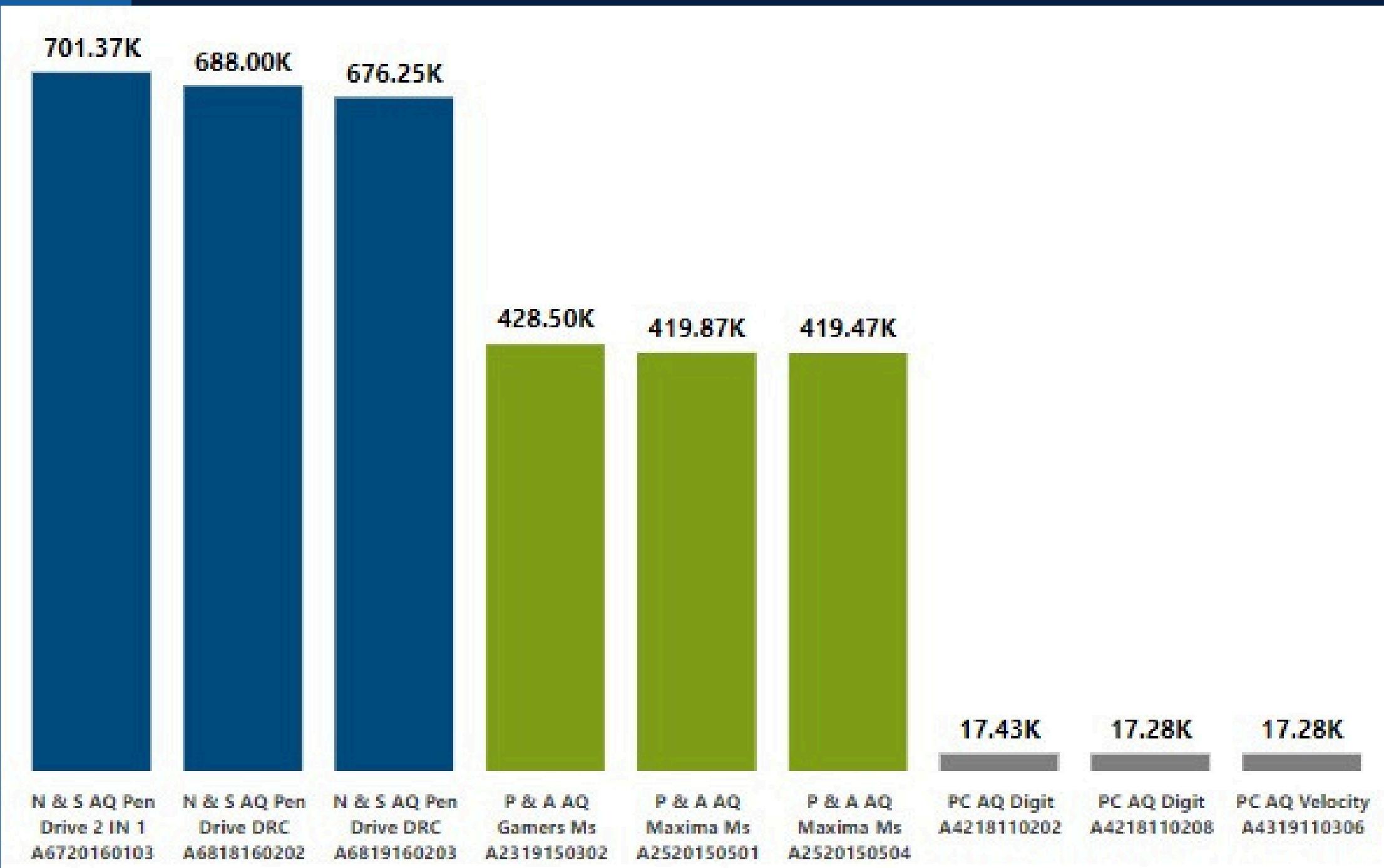
SELECT *
FROM cte
WHERE rank_order IN ( 1, 2, 3 )
ORDER BY division,
         rank_order;
```

## Output

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

# VISUALS-10

## Insight



- The top three products: "AQ Pen Drive 2 IN 1," "AQ Pen Drive DRC," and another variant of "AQ Pen Drive DRC."
- "Strong consumer preference for pen drives and related items in this division.
- The division's leadership in this market segment, indicating growth potential.
- Efficient inventory management is crucial for sustained success.

# THANK YOU

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