

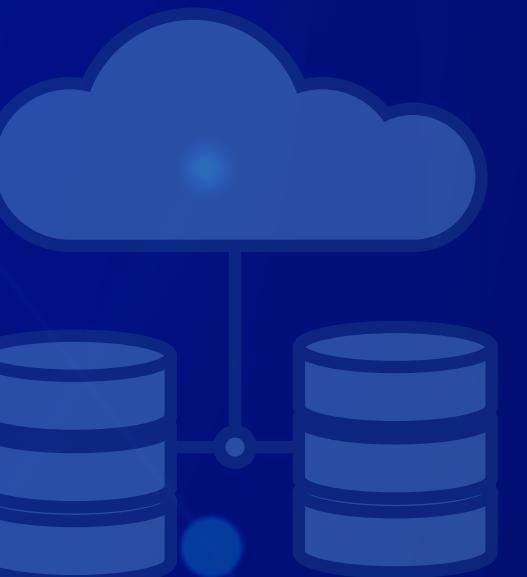


Atliq's Hardware

# CONSUMER GOODS AD-HOC ANALYSIS

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 MySQL





# Topics Covered



1. COMPANY OVERVIEW
2. PROBLEM STATEMENT
3. DATA COLLECTION
4. TOOLS & METHODS
5. RESULTS AND INSIGHTS



Atliq's Hardware

# Company Overview

AtliQ Hardware is a global manufacturer of high-performance computing components and accessories, serving markets across Asia-Pacific, Europe, and North America. With a strong presence in retail stores, e-commerce platforms, distributor networks, and direct-to-consumer channels, AtliQ offers reliable products such as motherboards, graphics cards, networking gear, and personal computers.



MySQL



# Problem Statement

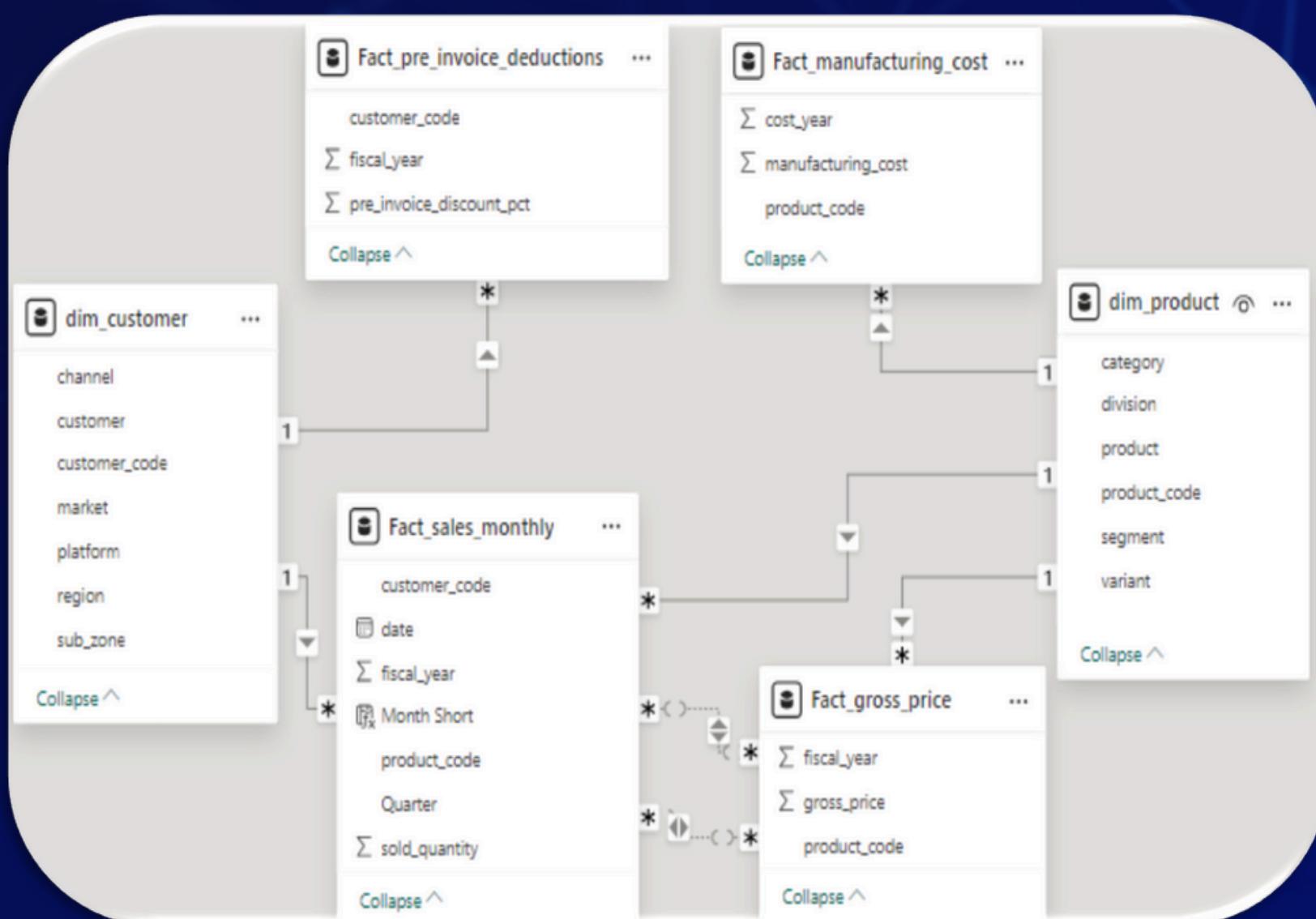
- Atliq Hardwares, a leading global computer hardware manufacturer, is experiencing a gap in timely and data-driven decision-making.
- To address this, the management has decided to expand the data analytics team by hiring skilled junior analysts.
- Tony Sharma, Director of Data Analytics, is seeking candidates who demonstrate both strong technical proficiency and effective communication skills.
- To assess these competencies, a structured SQL challenge has been planned as part of the hiring process.





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# Data Collection



## Codebasics SQL Challenge

### Requests:

- Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.
- 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
- 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
- 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
- Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields,  
product\_code  
product  
manufacturing\_cost
- 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
- 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
- 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
- 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
- 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

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# Tools and Methods

- SQL (Structured Query Language) – Primary tool for querying the dataset
- PowerPoint / Canva – For crafting visual insights for executives

Approach:

1. Understand the business request behind each SQL query.
2. Design optimized SQL queries for accurate, fast results.
3. Translate findings into executive-friendly visuals.



MySQL



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# Queries, Results and Insights





## 1. Question

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

### Query

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

### Output



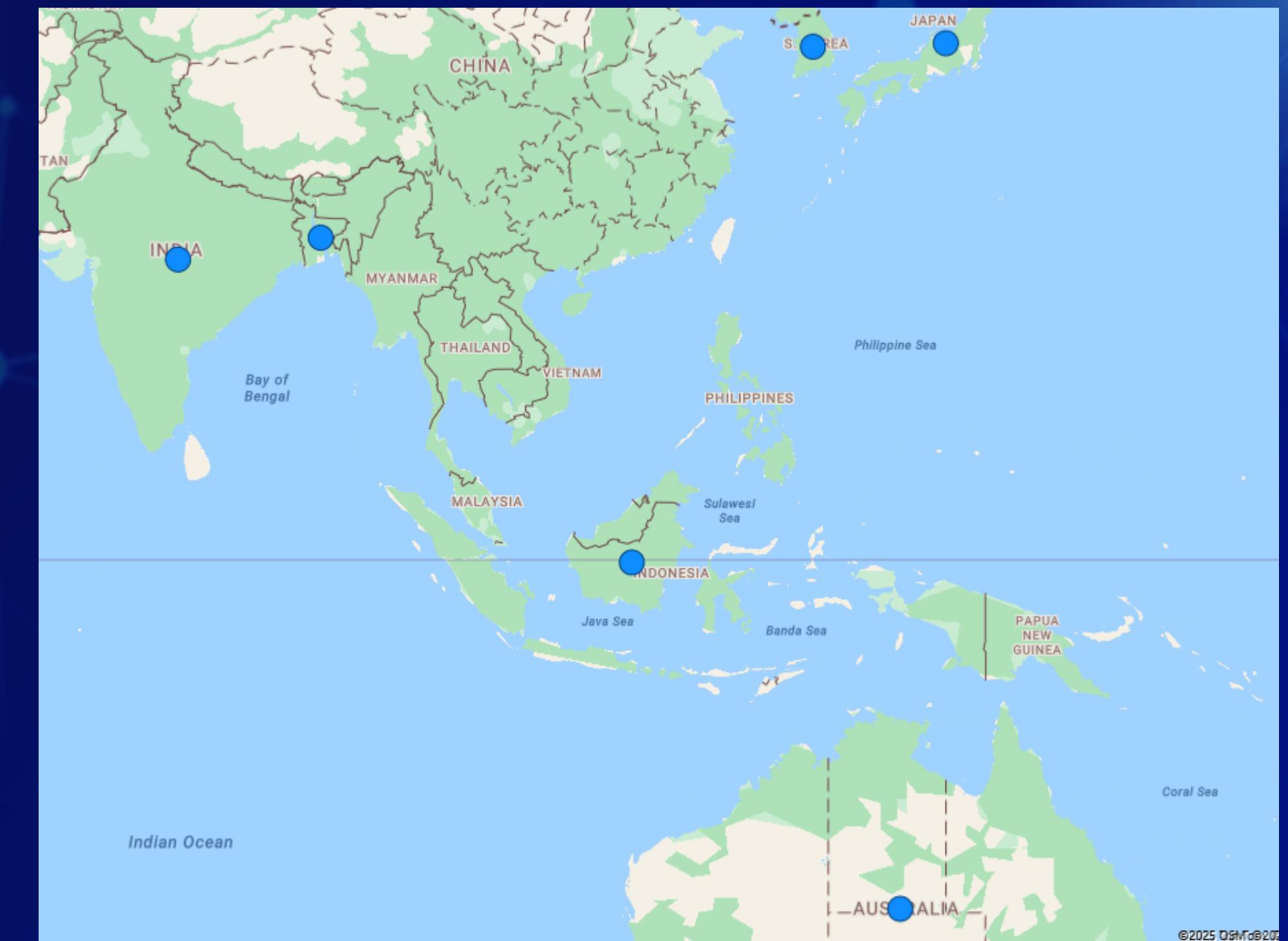
market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh



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# Insights

AtliQ Exclusive is active in eight countries across the Asia-pacific region, showing a strong and growing presence in the market.



MySQL



## 2. Question

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 .

## Query

```
WITH cte1 AS (
    SELECT COUNT(DISTINCT(product_code))
    FROM fact_sales_monthly
    WHERE fiscal_year = 2020
),
cte2 AS (
    SELECT COUNT(DISTINCT(product_code))
    FROM fact_sales_monthly
    WHERE fiscal_year = 2021
)
SELECT
    (SELECT * FROM cte1) AS unique_products_2020,
    (SELECT * FROM cte2) AS unique_products_2021,
    ROUND(
        ((SELECT * FROM cte2) - (SELECT * FROM cte1)) * 100.0 / (SELECT * FROM cte1),2) AS pct_change;
```

## Output

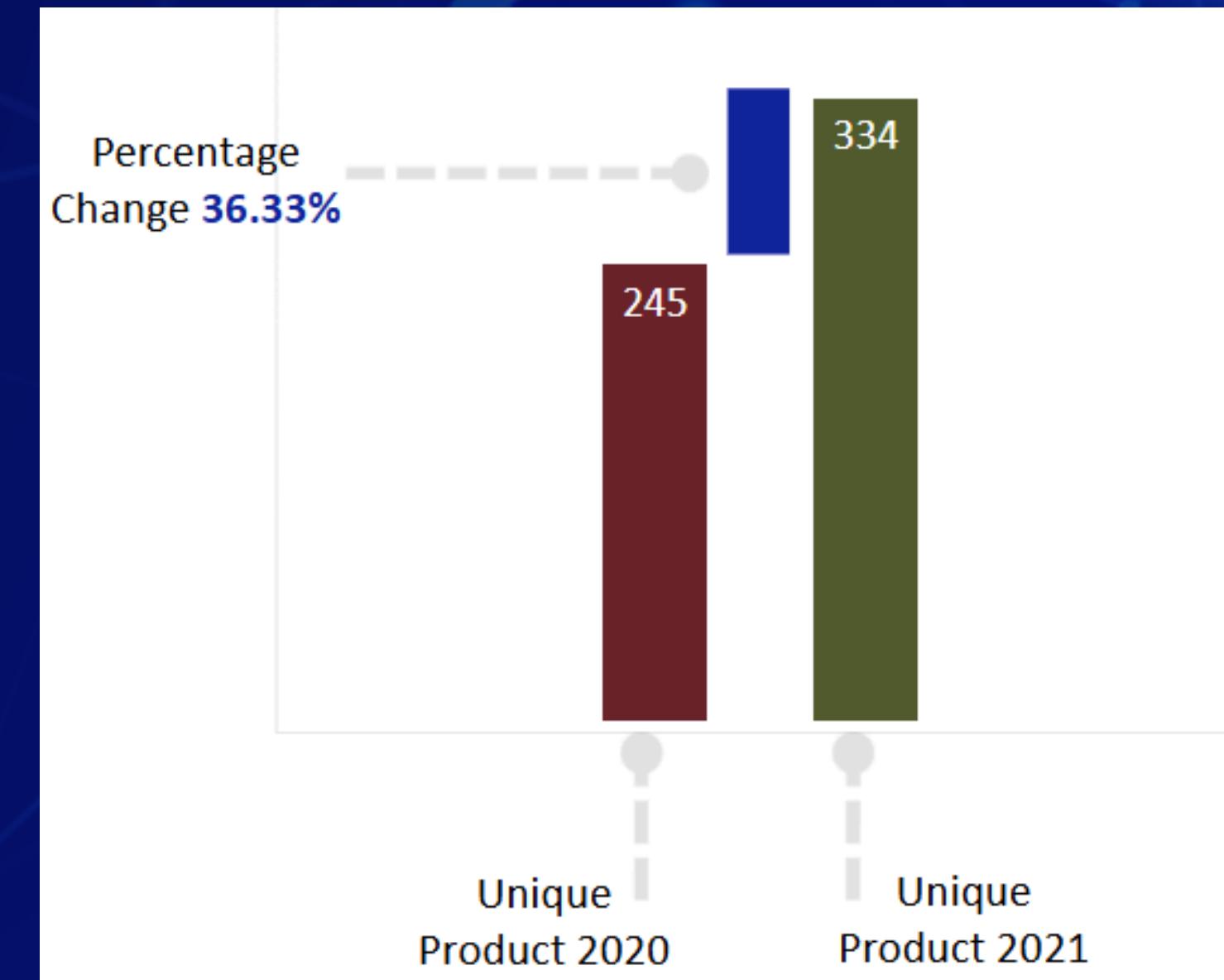


	unique_product_2020	unique_product_2021	pct_change
	245	334	36.3265



# Insight

- In 2020, AtliQ Hardwares offered 245 unique products, which increased to 334 in 2021 – a 36.33% rise.
- This growth reflects the company's strong focus on innovation and understanding customer needs.





## 3. Question

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.

## Query

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

## Output

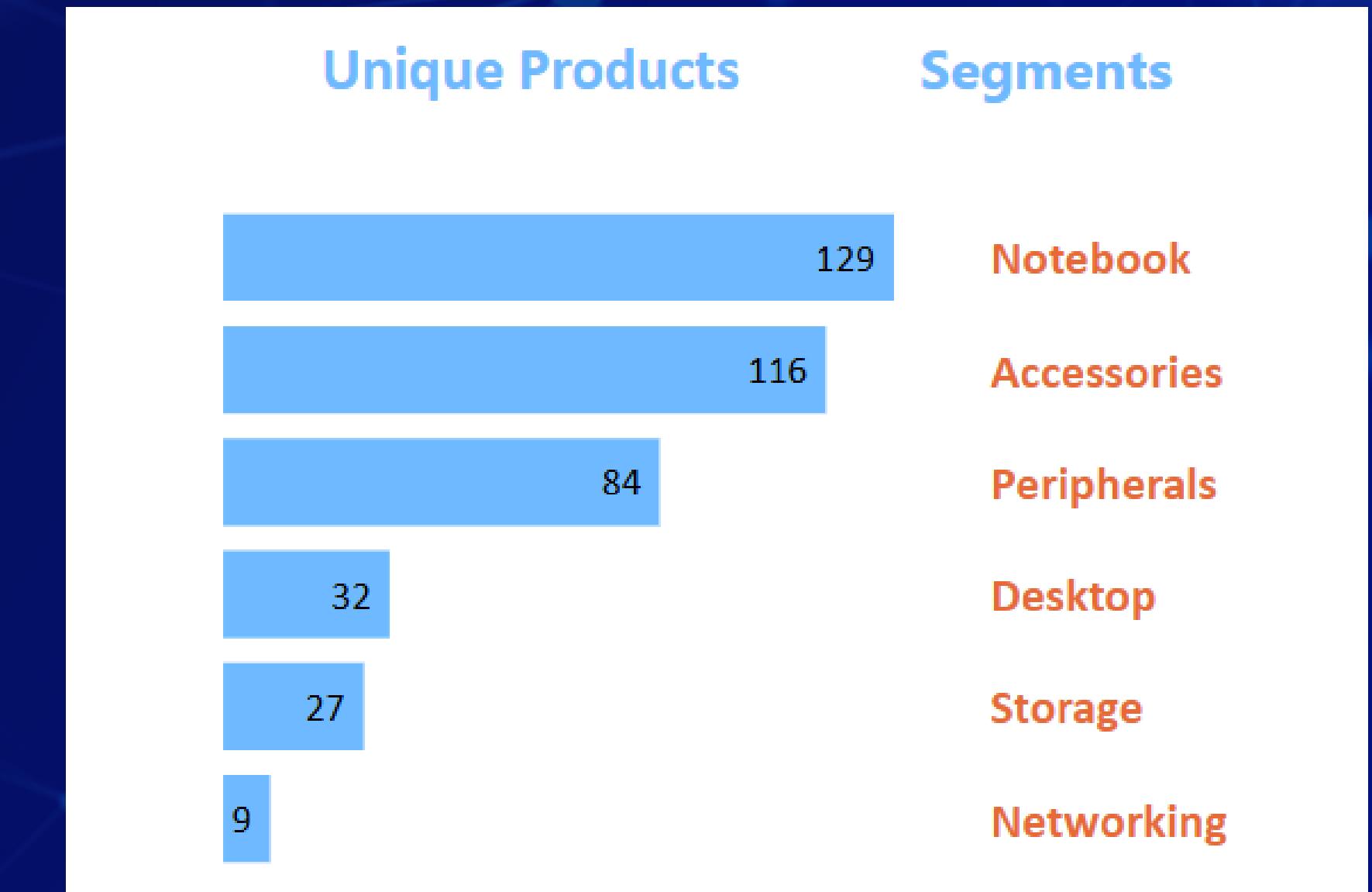


segment	Product_count
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9



# Insight

At Atliq Hardwares, they offer a wide range of notebooks, accessories and peripherals. But they should consider expanding their offerings in desktops, networking, and storage categories along with focusing on increasing the sales of portable items.





## 4. Question

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.

## Query

```
WITH cte AS (
  SELECT
    p.segment,
    COUNT(DISTINCT CASE WHEN s.fiscal_year = 2020 THEN s.product_code END) AS product_count_2020,
    COUNT(DISTINCT CASE WHEN s.fiscal_year = 2021 THEN s.product_code END) AS product_count_2021
  FROM fact_sales_monthly s
  JOIN dim_product p ON s.product_code = p.product_code
  GROUP BY p.segment
)
SELECT *,
  product_count_2021 - product_count_2020 AS difference
FROM cte;
```

## 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



# Insight

- Accessories saw the biggest growth from 2020 to 2021, adding 34 new products.
- Desktop product production surged by about 214% during the same period.
- Storage and Networking segments are producing the least new products from 2020 to 2021.

Segment	Product Count 2020	Product Count 2021	Difference	
Storage	12	17	5	↑
Peripherals	59	75	16	↑
Notebook	92	108	16	↑
Networking	6	9	3	↑
Desktop	7	22	15	↑
Accessories	69	103	34	↑



## 5. Question

Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields, product\_code ,product, manufacturing\_cost .

## Query

```
SELECT F.product_code, P.product, F.manufacturing_cost  
FROM fact_manufacturing_cost F  
JOIN dim_product P  
ON F.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 ;
```

## Output



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

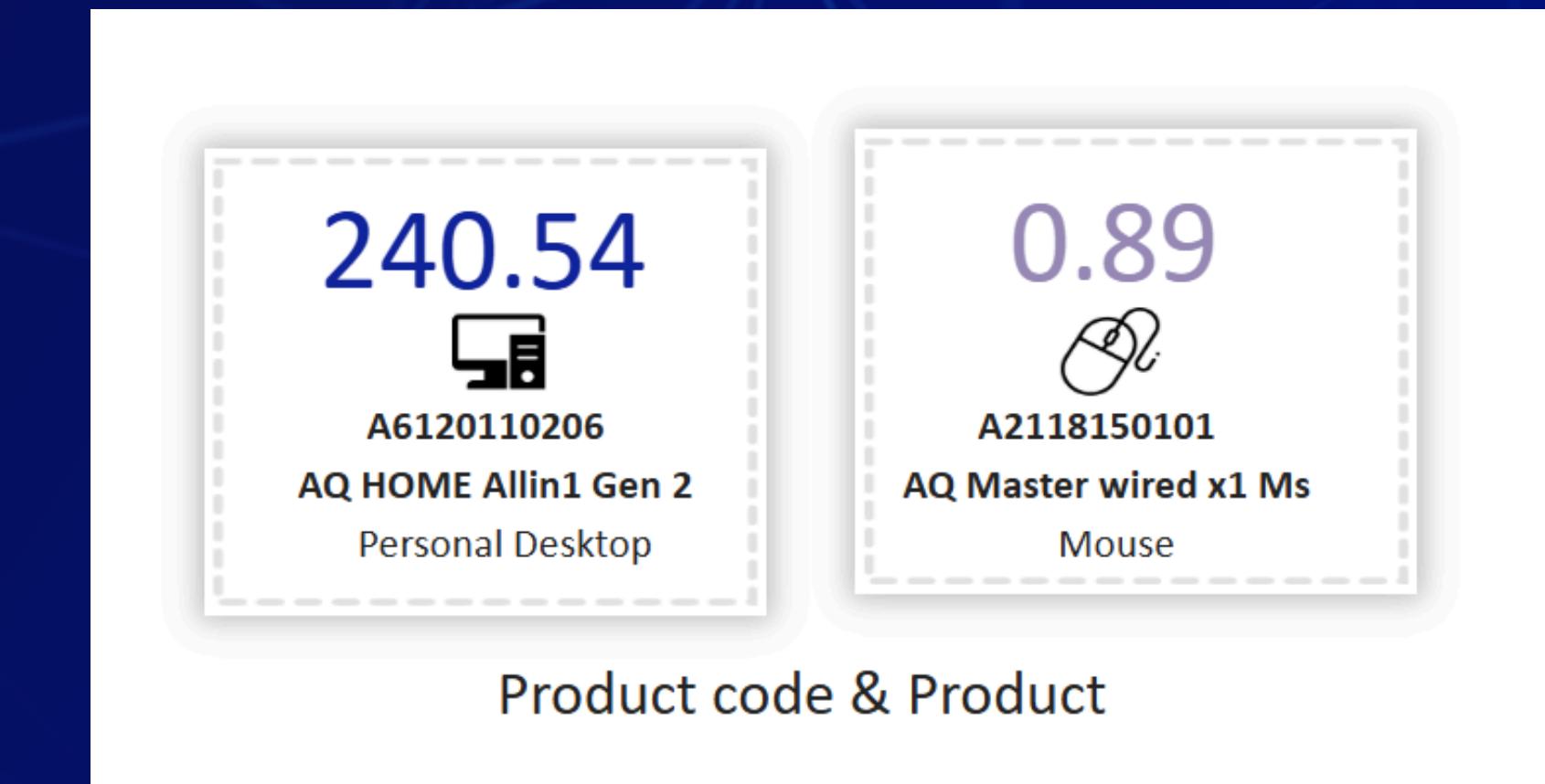


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# Insight

## Manufacturing Cost Insight – AtliQ Hardwares

- Highest: AQ HOME Allin1 Gen 2
- Lowest: AQ MMaster wiredx1 Ms



MySQL



## 6. Question

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 .

### Query

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

### Output

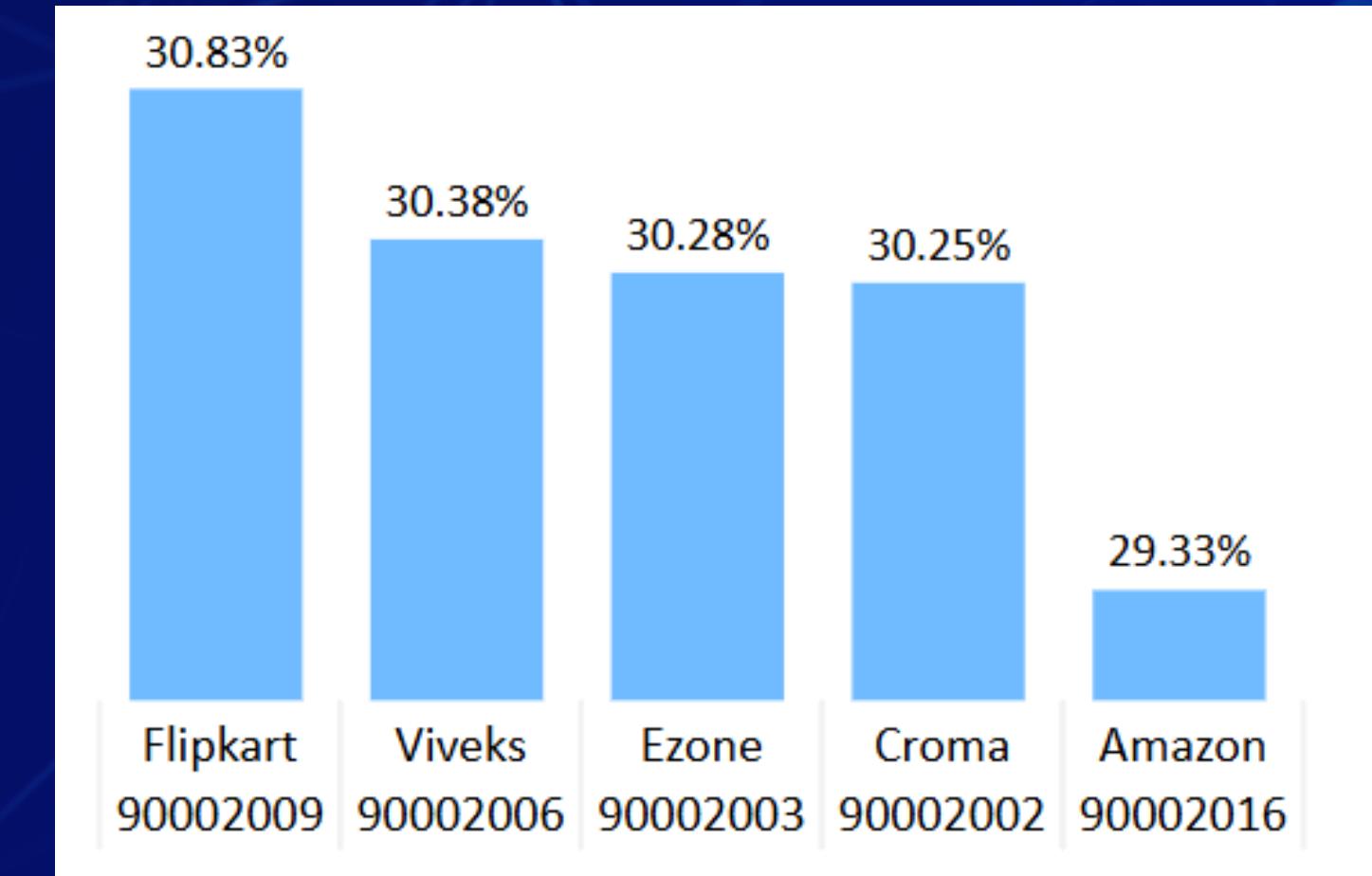


customer_code	customer	avg_discount_pct
90002009	Flipkart	30.83%
90002006	Viveks	30.38%
90002003	Ezone	30.28%
90002002	Croma	30.25%
90002016	Amazon	29.33%



# Insight

1. Flipkart offers the highest average discount at 30.83%.
2. AtliQ provides similar discounts to its top 5 customers, ranging from 29.33% to 30.83%.





## 7. Question

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.

## Query

```
SELECT CONCAT(MONTHNAME(FS.date), ' (', YEAR(FS.date), ')') AS 'Month',
       FS.fiscal_year,
       ROUND(SUM(G.gross_price*FS.sold_quantity), 2) 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
;
```

## Output



Month	Year	Gross_sales
September	2020	9092670.3392
October	2020	10378637.5961
November	2020	15231894.9669
December	2020	9755795.0577
January	2020	9584951.9393
February	2020	8083995.5479
March	2020	766976.4531
April	2020	800071.9543
May	2020	1586964.4768
June	2020	3429736.5712
July	2020	5151815.4020
August	2020	5638281.8287
September	2021	19530271.3028
October	2021	21016218.2095
November	2021	32247289.7946
December	2021	20409063.1769
January	2021	19570701.7102
February	2021	15986603.8883
March	2021	19149624.9239
April	2021	11483530.3032
May	2021	19204309.4095
June	2021	15457579.6626
July	2021	19044968.8164
August	2021	11324548.3409



# Insight

1. Sales were lowest in March, April, and May 2020 due to COVID-19 but started recovering after June.
2. November 2020 saw the highest sales at 15.23 million.
3. Sales grew significantly in 2021 compared to 2020.
4. In 2021, August had the lowest sales at 11.32 million, while November hit a peak of 32.25 million.





## 8. Question

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.

## Query

```
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'
    ELSE 'Q4'
END AS quarters,
SUM(sold_quantity) AS total_sold_quantity
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY Quarters
ORDER BY total_sold_quantity DESC;
```

## Output

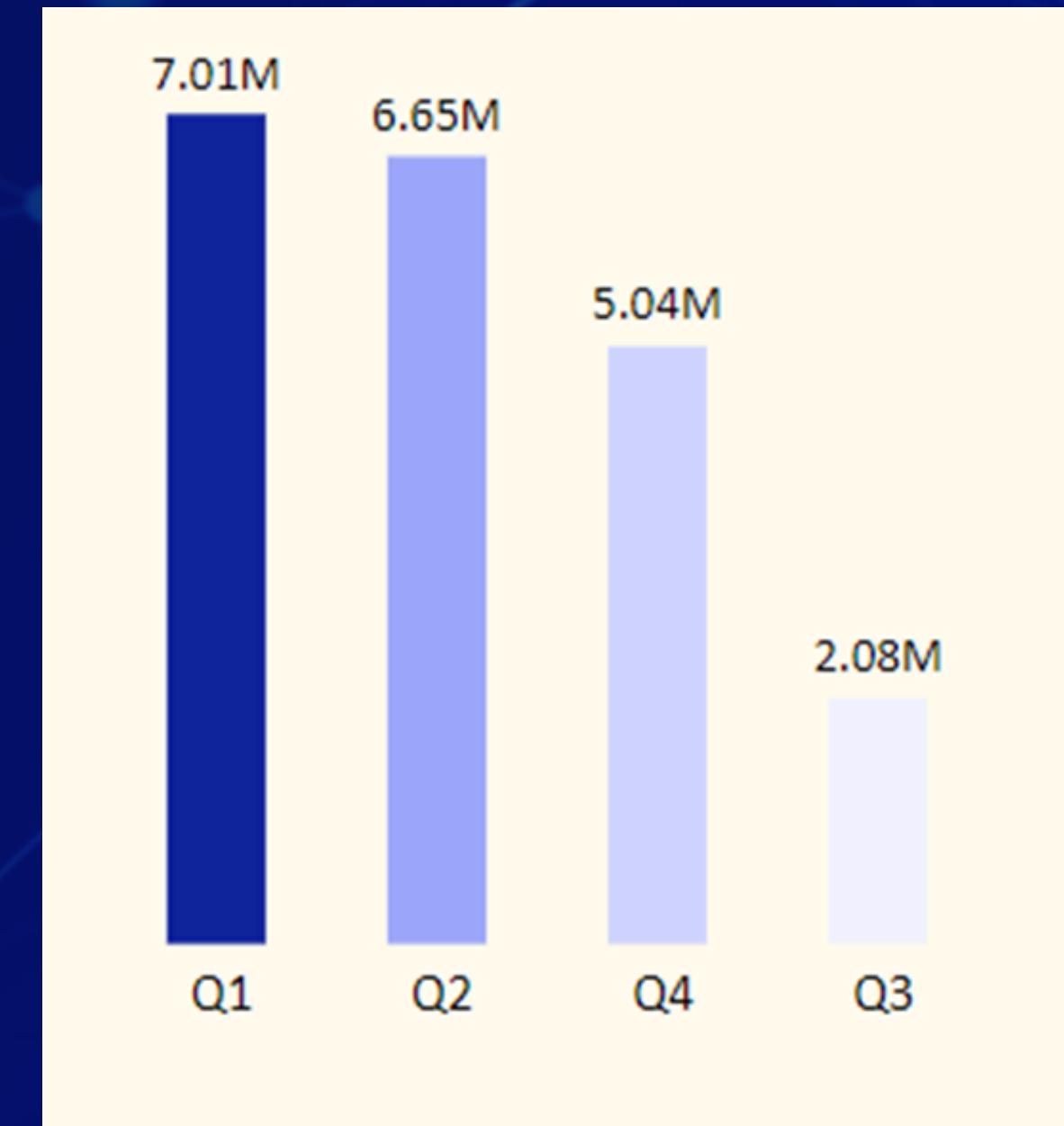


Quarter	total_sold_qty
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087



# Insight

1. Q1 2020 had the highest sales volume at 7 million units, showing a strong start to the year.
2. Sales dropped sharply in Q3 (March-May) 2020, likely due to the COVID-19 pandemic.





## 9. Question

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.

## Query

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

## Output

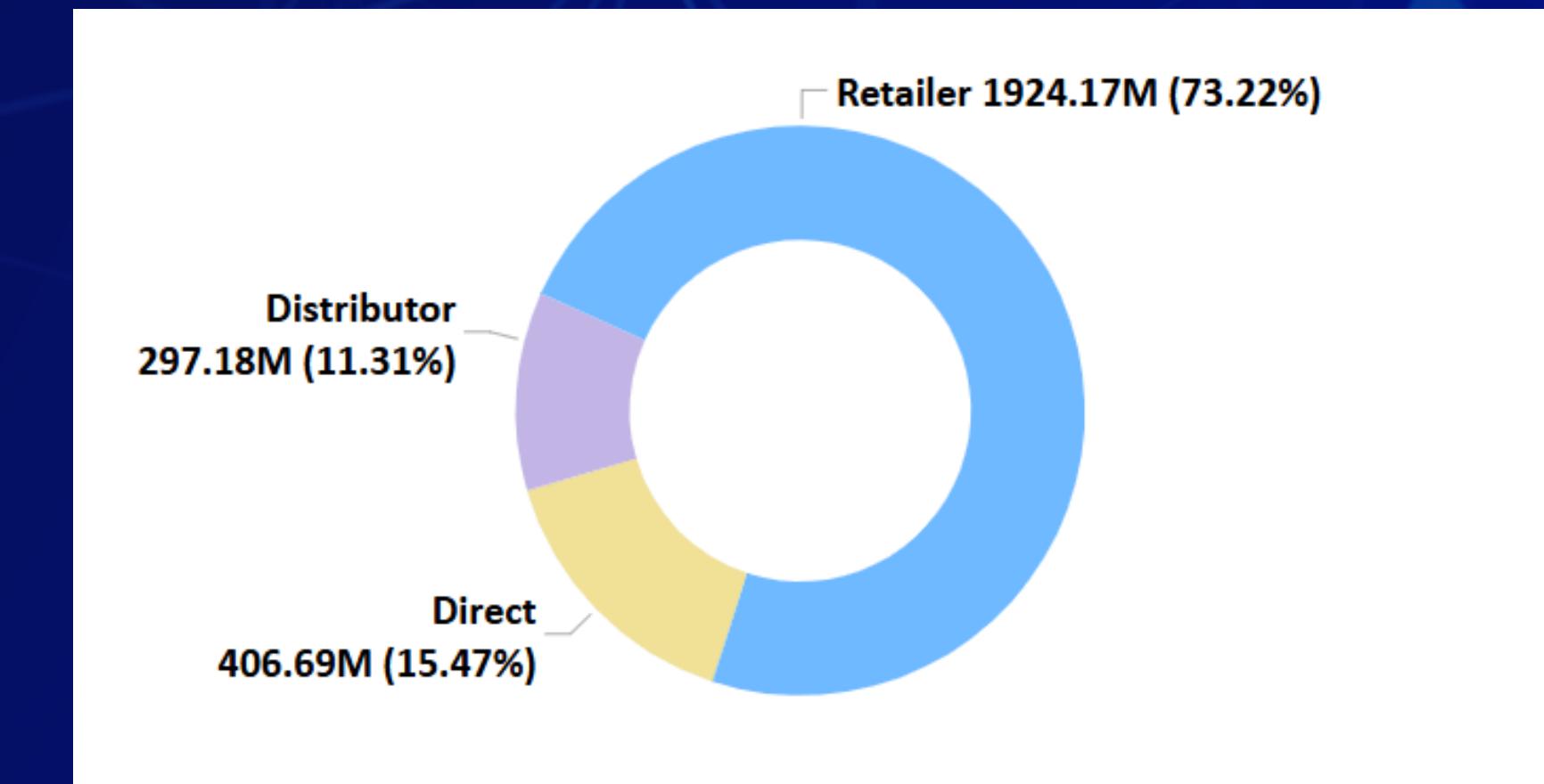


channel	gross_sales_mln	pct_contribution
Retailer	1924.17	73.22 %
Direct	406.69	15.48 %
Distributor	297.18	11.31 %



# Insight

- Retailers drive most of AtliQ's sales, making up 73.22% of total gross sales.
- Direct and distributor channels contribute 26.79%.





## 10. Question

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.

## Query

```
WITH temp_table AS (
    SELECT division,
    s.product_code,
    CONCAT(p.product, " ", "(" ,p.variant, ")" ) AS product ,
    SUM(sold_quantity) AS total_sold_quantity,
    RANK() OVER (PARTITION BY division ORDER BY sum(sold_quantity) DESC) AS rank_order
    FROM fact_sales_monthly s
    JOIN dim_product p ON s.product_code = p.product_code
    WHERE fiscal_year = 2021
    GROUP BY division, s.product_code, p.product, p.variant
)
SELECT * FROM temp_table
WHERE rank_order IN (1,2,3);
```

## Output

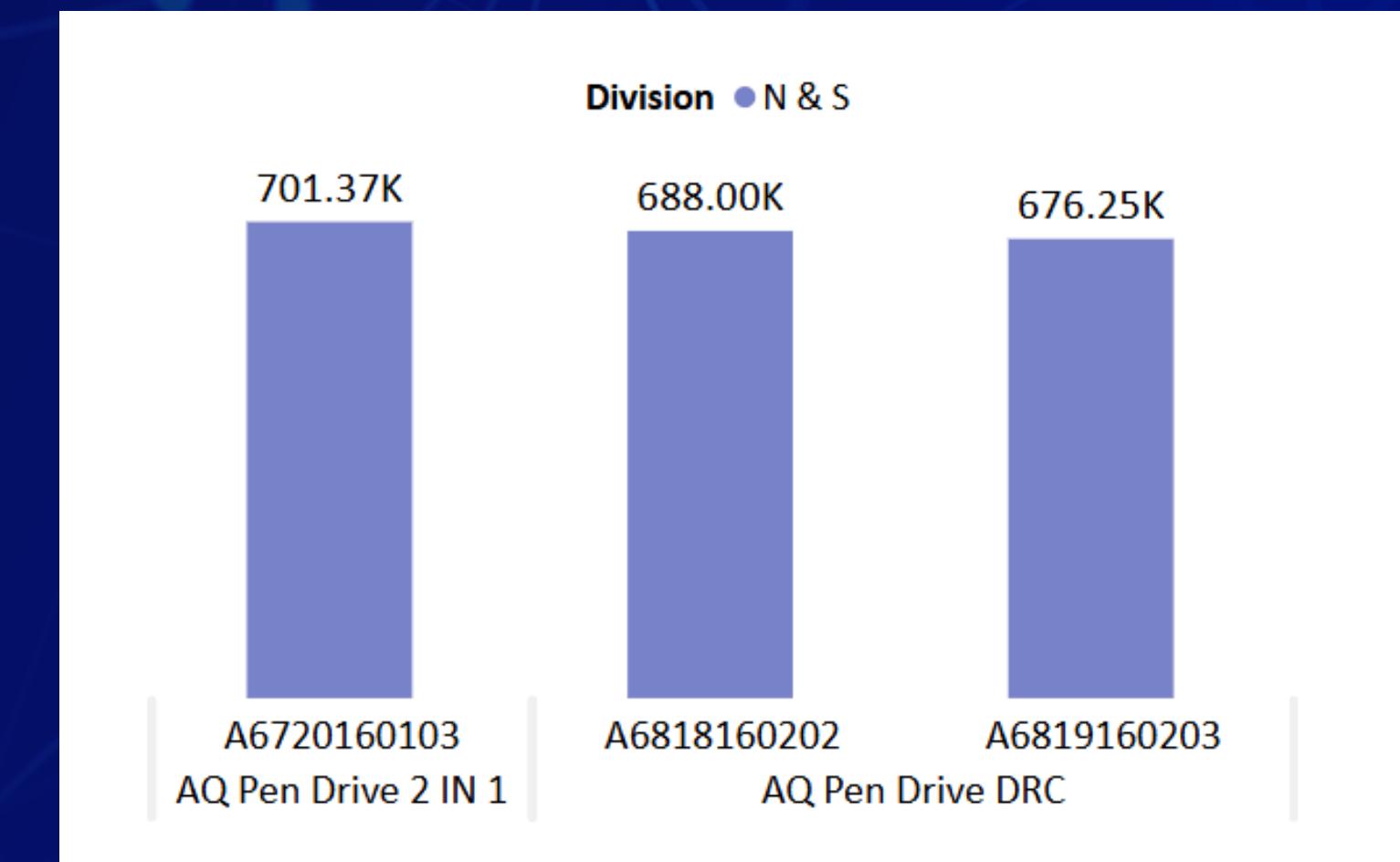


division	product_code	product	total_sold_qty	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1 (Premium)	701373	1
N & S	A6818160202	AQ Pen Drive DRC (Plus)	688003	2
N & S	A6819160203	AQ Pen Drive DRC (Premium)	676245	3
P & A	A2319150302	AQ Gamers Ms (Standard 2)	428498	1
P & A	A2520150501	AQ Maxima Ms (Standard 1)	419865	2
P & A	A2520150504	AQ Maxima Ms (Plus 2)	419471	3
PC	A4218110202	AQ Digit (Standard Blue)	17434	1
PC	A4319110306	AQ Velocity (Plus Red)	17280	2
PC	A4218110208	AQ Digit (Premium Misty Green)	17275	3



# Insight

1. In the N&S division, pen drives dominate the top three spots.
2. The P&A division's top three products are all mice.
3. The PC division's bestsellers are personal laptops.





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# Thank You