

# AD HOC INSIGHTS

Consumer Goods



Presented By :-  
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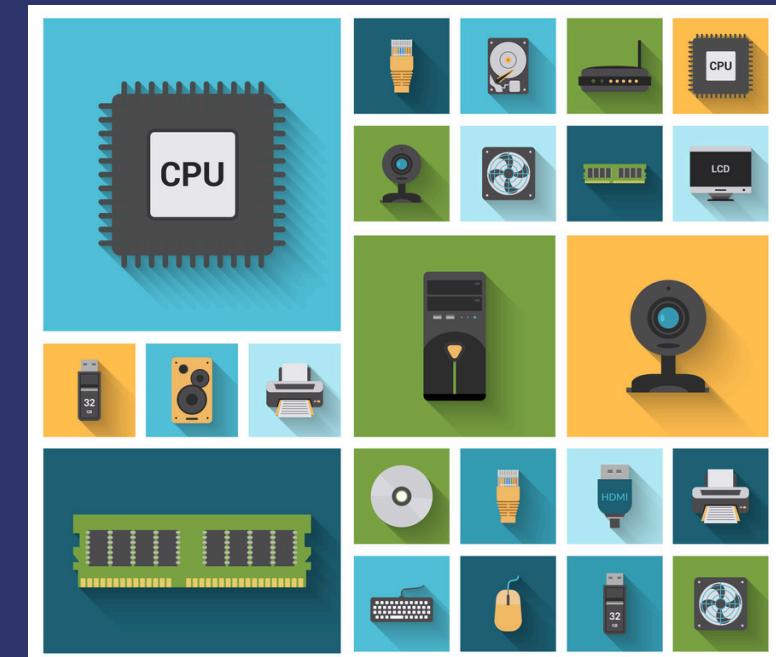


# OVERVIEW

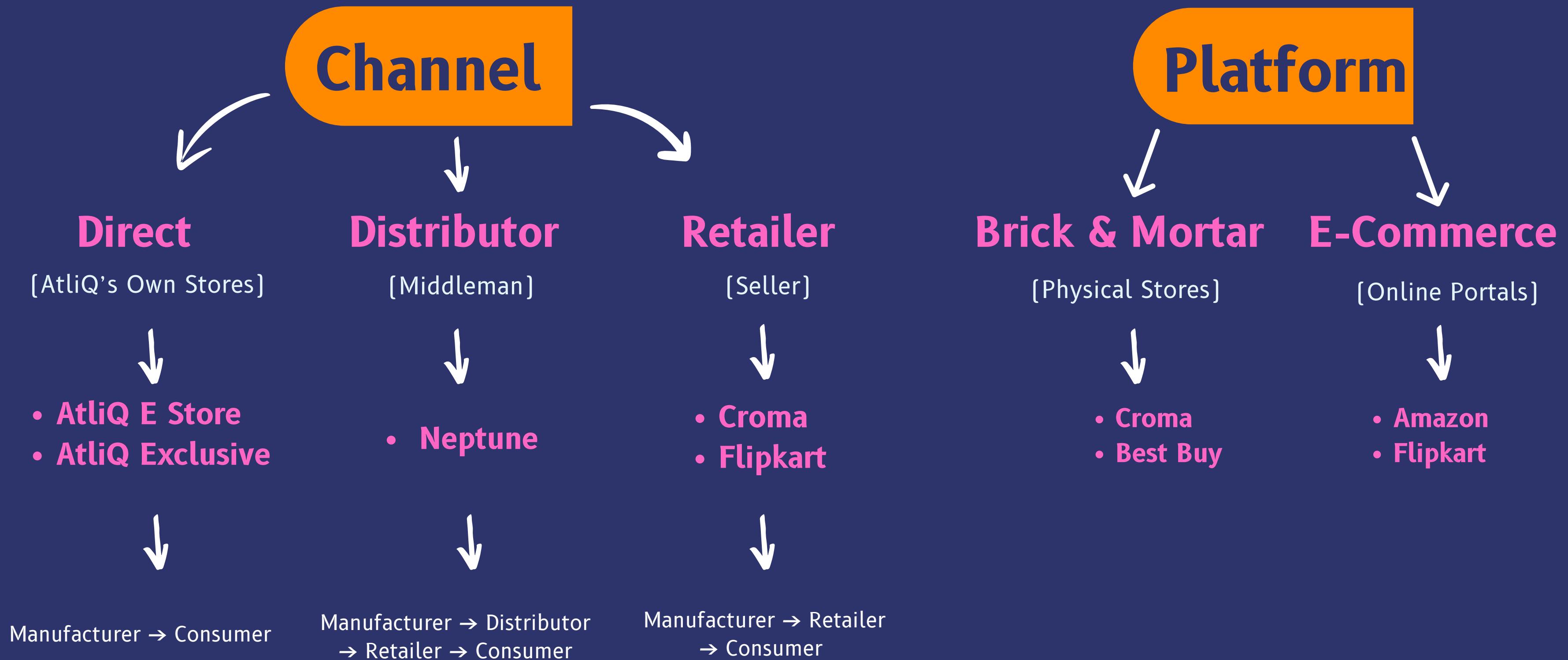
- About Company
- Problem Statement
- Objectives
- Ad - Hoc Queries & Insights

# ATLIQ HARDWARE

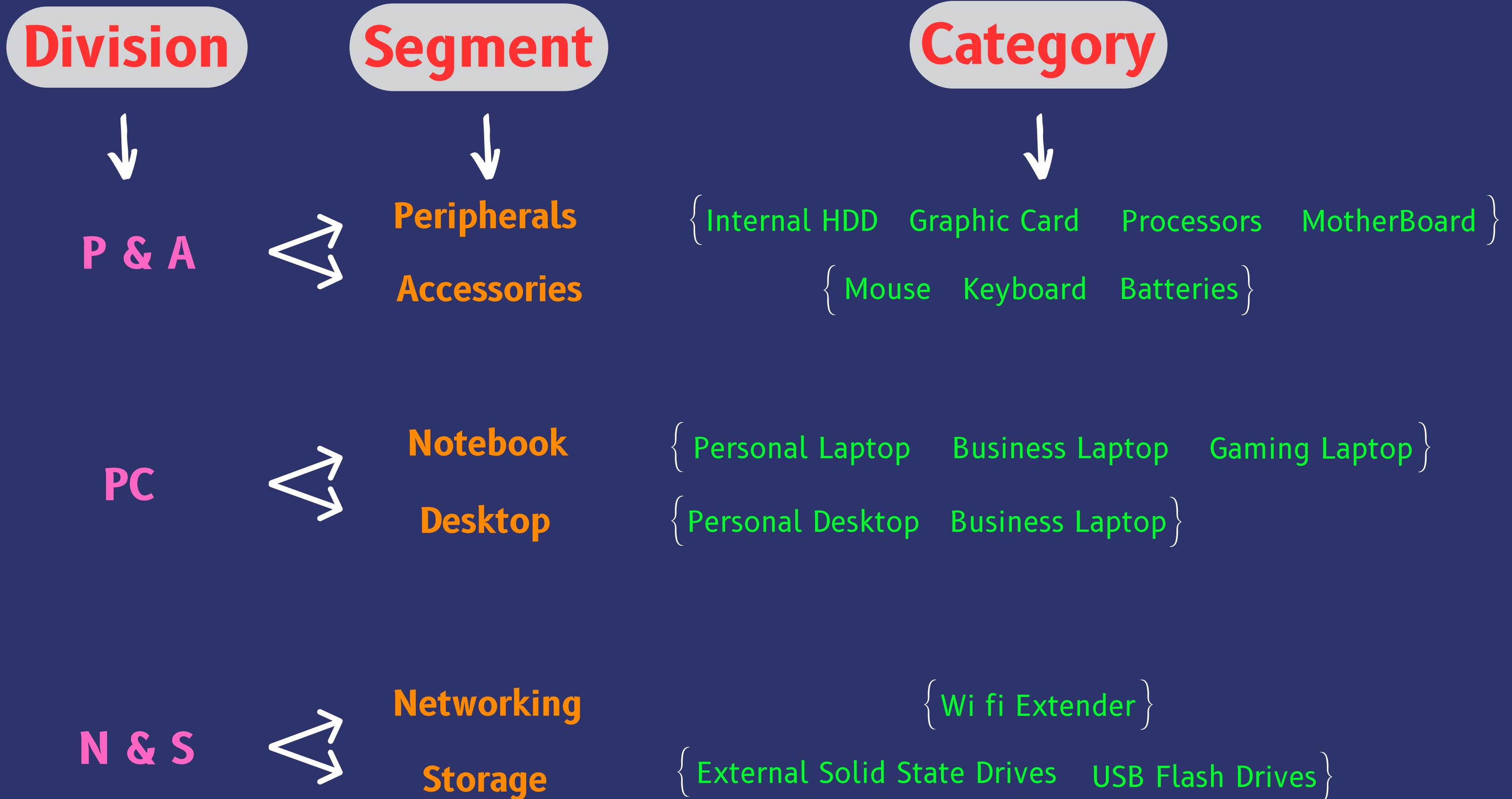
AtliQ Hardwares (imaginary company) ranks among the top computer hardware manufacturers in India and has also expanded its presence internationally.



# ATLIQ'S BUSINESS MODEL



# ATLIQ'S PRODUCT RANGE



# PROBLEM STATEMENT

- Management lacks sufficient insights for quick, data-driven decisions.
- They plan to expand the data analytics team with junior analysts.
- AtliQ Hardware seeks to hire someone skilled in both tech and soft skills.
- A SQL challenge is conducted to assess both technical and soft skills.
- Hiring decisions will be based on the results of the challenge.

# OBJECTIVES

- Provide clear, accurate insights for 10 business questions.
- Support top management in decision-making.
- Analyze data using SQL to identify key insights.
- Address ad hoc business requests with SQL queries.
- Present insights in a concise and actionable format for decision-making.

# **DATASET**

## **Dimension Tables**

- dim\_customers : Table containing detailed customer information.
- dim\_products : Table containing detailed product information.

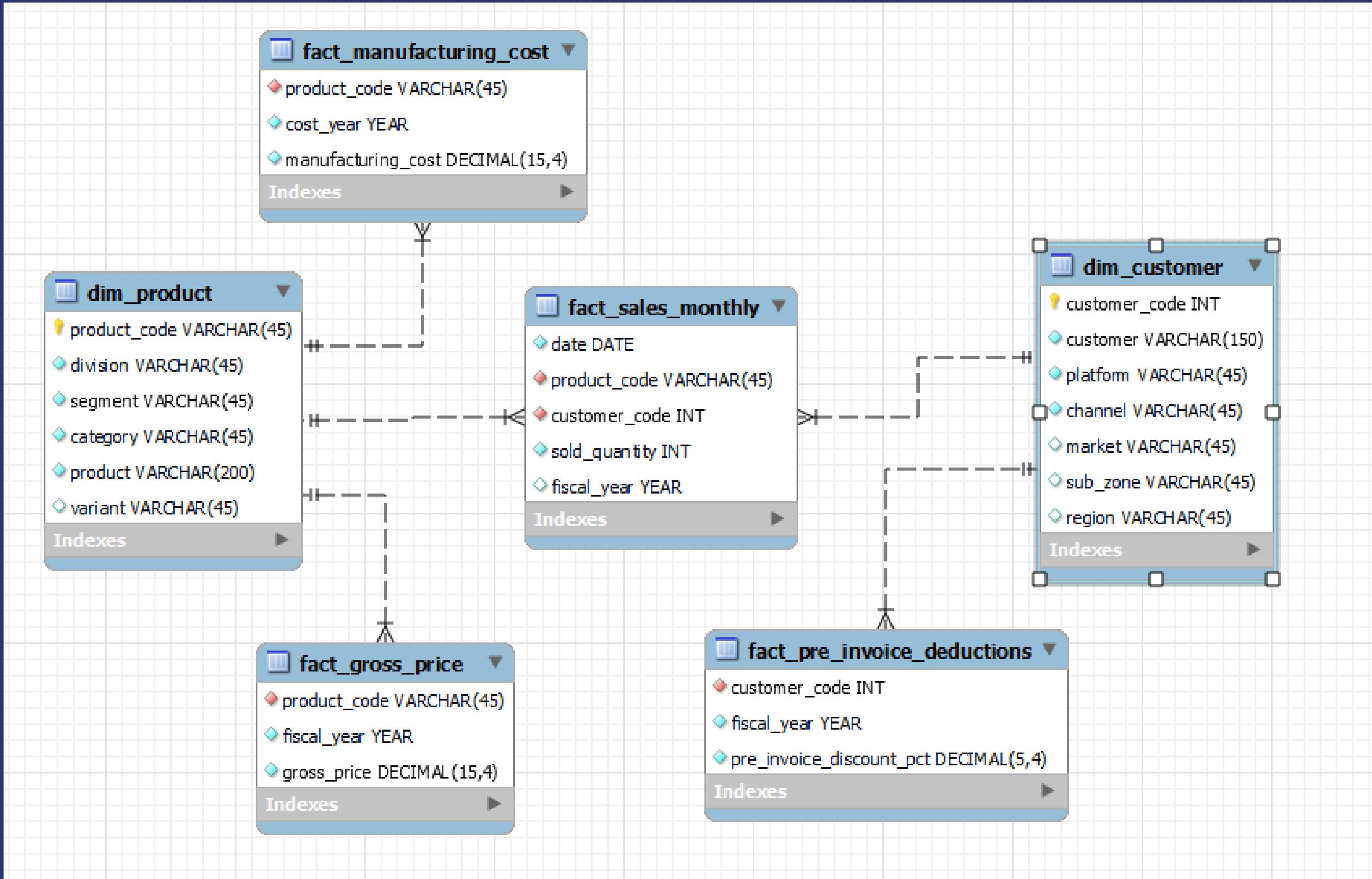
# **TOOLS USED**

- SQL [My SQL ] for Data Analysis
- Microsoft Power BI for Visuals
- Canva For Presentation
- OBS Studio For Video Recording

## **Fact Tables**

- fact\_gross\_price : Product-wise gross price by fiscal year.
- fact\_manufacturing\_cost : Product-wise manufacturing cost by fiscal year.
- fact\_pre\_invoice\_deductions : Product-wise pre-invoice discount by fiscal year.
- fact\_sales\_monthly : Monthly sales information by product.

# DATA MODEL



# AD - HOC REQUESTS

## Codebasics SQL Challenge

### Requests:

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

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\_mln  
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

QUESTION

# AD - HOC REQUEST 1

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

OUTPUT

market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

SELECT  
    DISTINCT market  
FROM  
    dim\_customer  
WHERE  
    customer = "Atliq Exclusive"  
AND  
    region = "APAC"

QUERY

# INSIGHTS



In the APAC [Asia Pacific] region, **AtliQ Exclusive** operates in 8 different countries.

India With Highest sales nearly 2 million products sold.

Japan With Lowest sales 63 thousand products sold.

QUESTION



## AD - HOC REQUEST 2

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

OUTPUT

	unique_products_2020	unique_products_2021	percentage_chg
▶	245	334	36.3265

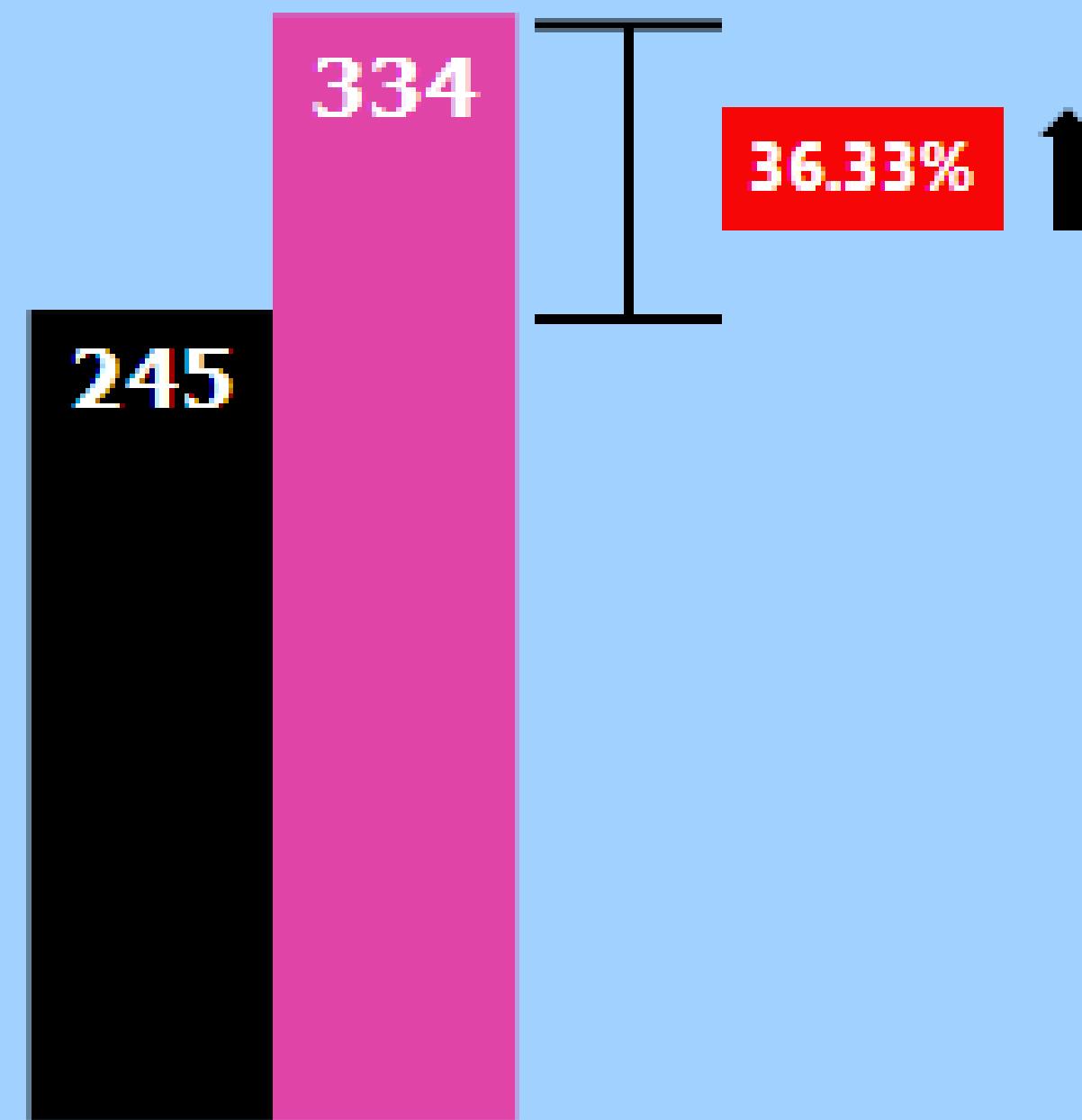
QUERY



```
WITH CTE AS
(
  SELECT DISTINCT
    (select count(distinct product_code) from fact_sales_monthly where fiscal_year = 2020) as unique_products_2020,
    (select count(distinct product_code) from fact_sales_monthly where fiscal_year = 2021) as unique_products_2021
  FROM
    fact_sales_monthly
)
SELECT
  *,
  (unique_products_2021 - unique_products_2020) * 100 / unique_products_2020 as percentage_chg
FROM CTE
```

# INSIGHTS

## ● Unique Products Of 2020 ● Unique Products Of 2021



From 2020 to 2021, 89 new products were launched.

Unique products increased by **36.33%**.

This shows AtliQ launched new products and variants across all categories to meet the growing diverse customer needs in FY 2021.

# AD - HOC REQUEST 3

QUESTION

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

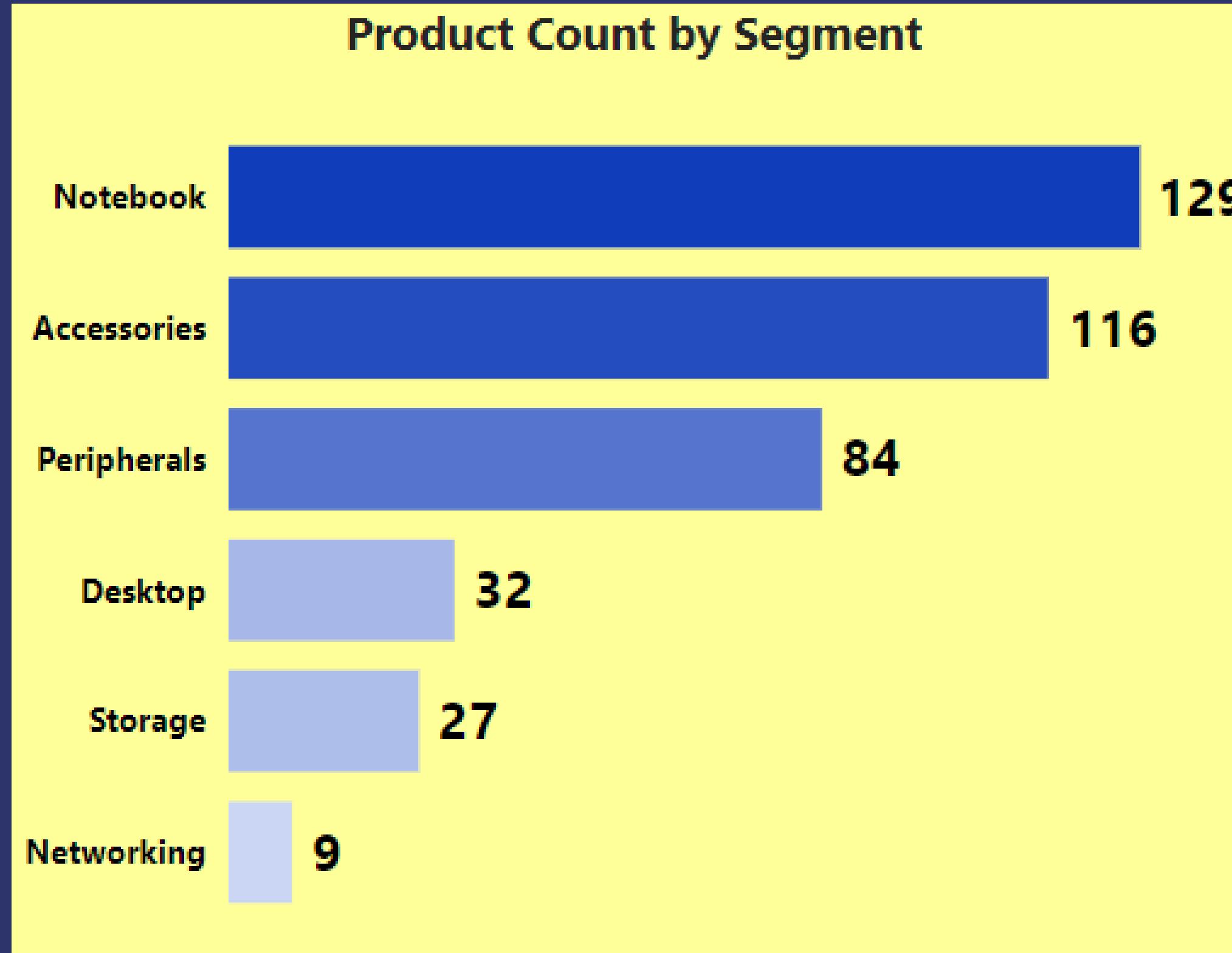
QUERY

OUTPUT

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

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

# INSIGHTS



**Highest : Notebook | Accessories | Peripherals**  
**Comprising 82% of the total product base**

**Lowest : Storage | Networking | Desktop**  
**18% of the total product base**

**This is due to the majority of segments Have Categories**  
**such as laptops, mouse, keyboards, graphic cards,**  
**processors and motherboards, being widely used and**  
**having recurring requirements.**

# QUESTION

# AD - HOC REQUEST 4

Q) Which segment had the most increase in unique products in 2021 vs 2020?

# 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

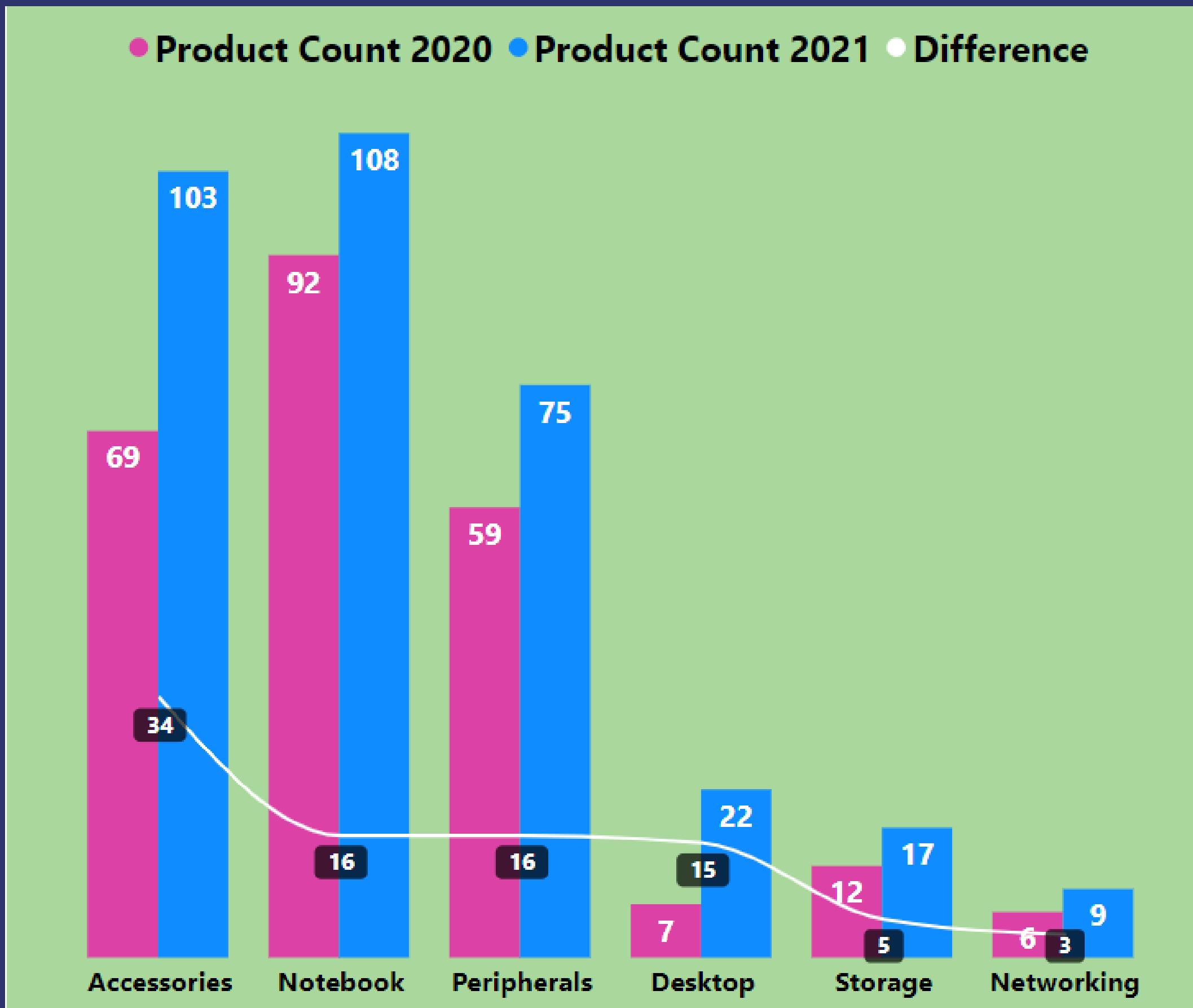
# QUERY

```
• WITH CTE1 AS (SELECT p.segment, COUNT(DISTINCT p.product_code) AS product_count_2020
  FROM fact_sales_monthly s
  JOIN dim_product p
  ON p.product_code = s.product_code
  WHERE s.fiscal_year = 2020
  GROUP BY segment),

CTE2 AS (SELECT p.segment, COUNT(DISTINCT p.product_code) AS product_count_2021
  FROM fact_sales_monthly s
  JOIN dim_product p
  ON p.product_code = s.product_code
  WHERE s.fiscal_year = 2021
  GROUP BY segment)

SELECT *, (product_count_2021 - product_count_2020) AS difference FROM CTE1 JOIN CTE2 USING (segment) ORDER BY difference DESC
```

# INSIGHTS



Highest: Accessories – 34 new products added, a 50% rise.

The Desktop segment is rising in demand with 15 new products added, reflecting a 214% rise, doubling the previous year.

The storage & networking segment showed a slight increase in product offerings.

QUESTION



# AD - HOC REQUEST 5

Q) Get the products that have the highest and lowest manufacturing costs.

OUTPUT

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

QUERY



```
SELECT * FROM (SELECT product_code, product, manufacturing_cost
FROM dim_product
JOIN fact_manufacturing_cost
USING (product_code)
ORDER BY manufacturing_cost DESC
LIMIT 1) AS max_cost

UNION ALL

SELECT * FROM (SELECT product_code, product, manufacturing_cost
FROM dim_product
JOIN fact_manufacturing_cost
USING (product_code)
ORDER BY manufacturing_cost ASC
LIMIT 1) AS min_cost
```

# INSIGHTS

AQ HOME Allin1 Gen 2

A6120110206

\$240.5364

Max Manufacturing Cost

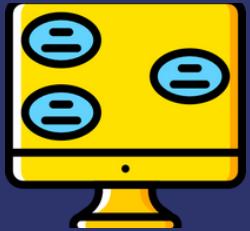
AQ Master wired x1 Ms

A2118150101

\$0.892

Min Manufacturing Cost

Highest Cost



Personal Desktop

AQ HOME Allin1 Gen 2  
(Plus 3) Variant

Lowest Cost



Mouse

AQ Master wired x1 Ms  
(Standard 1) Variant

QUESTION



# AD - HOC REQUEST 6

Q) 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.

OUTPUT

	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

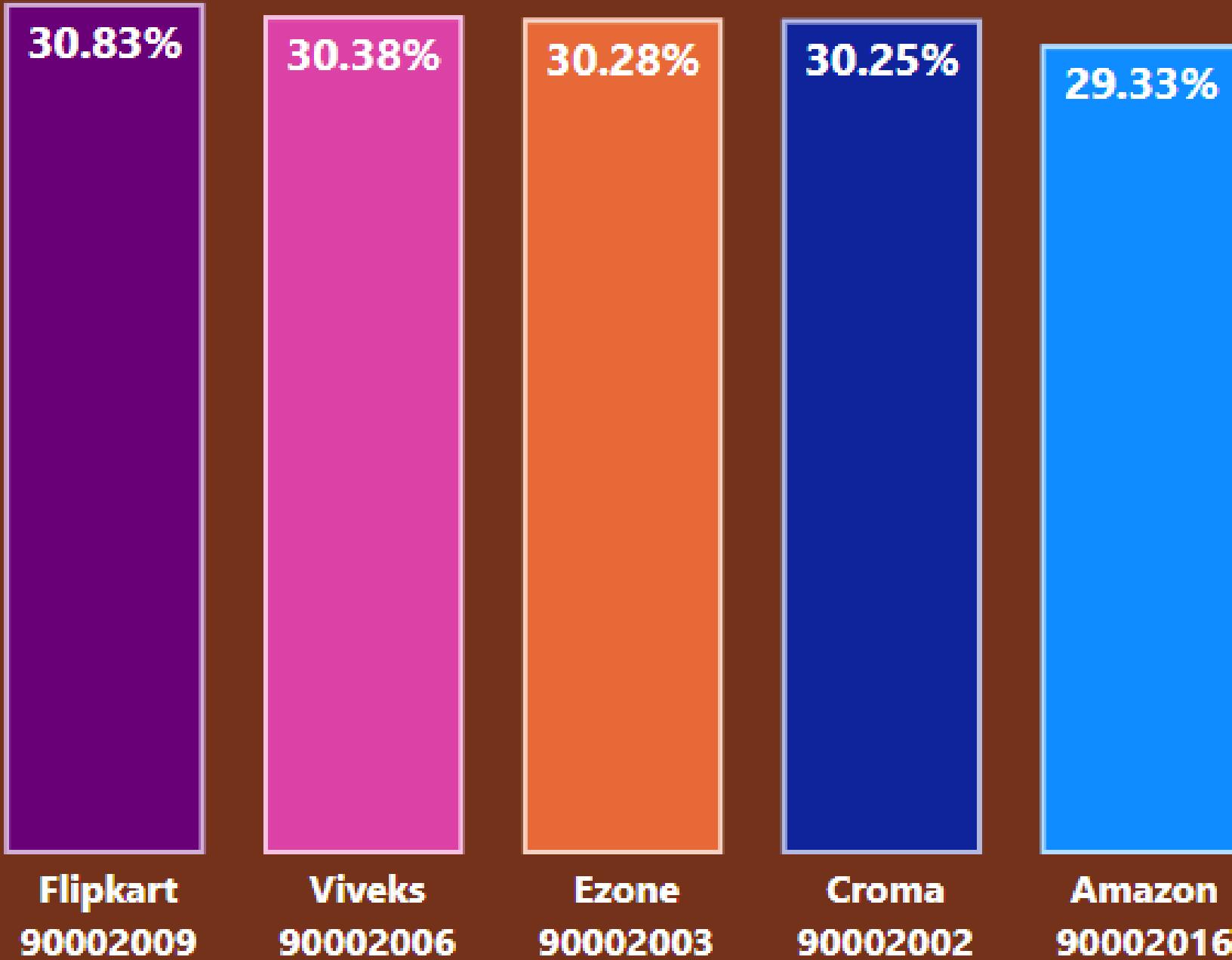
QUERY



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

# INSIGHTS

## Avg Pre Invoice Discount % For FY 2021



Flipkart Has the Highest Avg  
Discount [ 30.83 % ]  
Between The Top 5

The average discount percentage is  
nearly the same for all top 5  
customers  
Showing that AtliQ offers a similar  
discount rate to its customers.

## QUESTION

# AD - HOC REQUEST 7

## QUERY

Q) Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month.

## OUTPUT

Month	Year	gross_sales_amount
September	2020	9.09M
October	2020	10.38M
November	2020	15.23M
December	2020	9.76M
January	2020	9.58M
February	2020	8.08M
March	2020	0.77M
April	2020	0.80M
May	2020	1.59M
June	2020	3.43M
July	2020	5.15M
August	2020	5.64M

Month	Year	gross_sales_amount
September	2021	19.53M
October	2021	21.02M
November	2021	32.25M
December	2021	20.41M
January	2021	19.57M
February	2021	15.99M
March	2021	19.15M
April	2021	11.48M
May	2021	19.20M
June	2021	15.46M
July	2021	19.04M
August	2021	11.32M

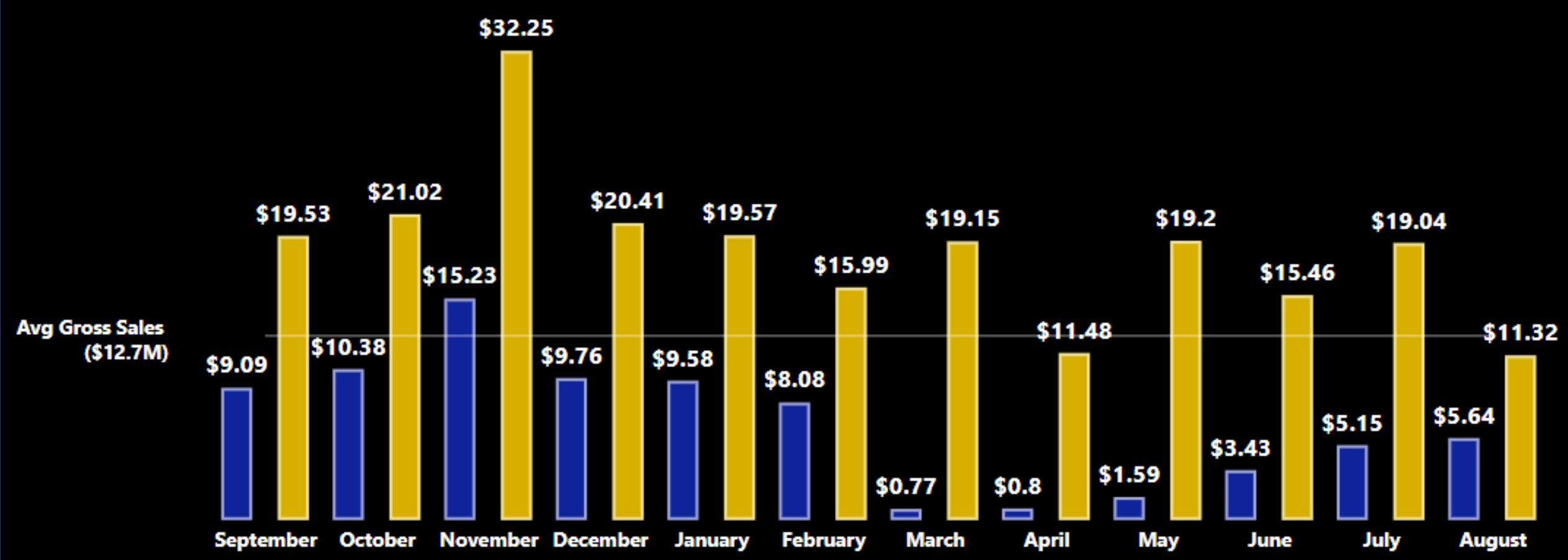
SELECT

```
MONTHNAME(s.date) AS 'Month',
s.fiscal_year as 'Year',
CONCAT(ROUND(SUM(g.gross_price * s.sold_quantity)/1000000,2),"M") AS gross_sales_amount
FROM fact_sales_monthly s
JOIN fact_gross_price g
ON g.product_code = s.product_code
JOIN dim_customer c
ON c.customer_code = s.customer_code
WHERE c.customer = "Atliq Exclusive"
GROUP BY Month, s.fiscal_year
ORDER BY s.fiscal_year;
```

# INSIGHTS

## Monthly Gross Sales ( in Million ) Report For FY 2020 & 2021

Year ● 2020 ● 2021



- Q3 2020 sales were low due to COVID-19 lockdowns, but AtliQ successfully recovered overall.
- The graph shows AtliQ's rapid growth, with a 100%+ year-over-year increase each month.

- In 2020, March–May sales fell below a million, far under the 12.66 million average.
- Sales recovered from September to November 2020, peaking in November.
- Sales remained above average in 2021, peaking at 32.25 million in November.
- March and May 2021 saw a remarkable 1000%+ sales increase compared to the previous year.

## QUESTION

# AD - HOC REQUEST 8

Q) In which quarter of 2020, got the maximum total\_sold\_quantity?

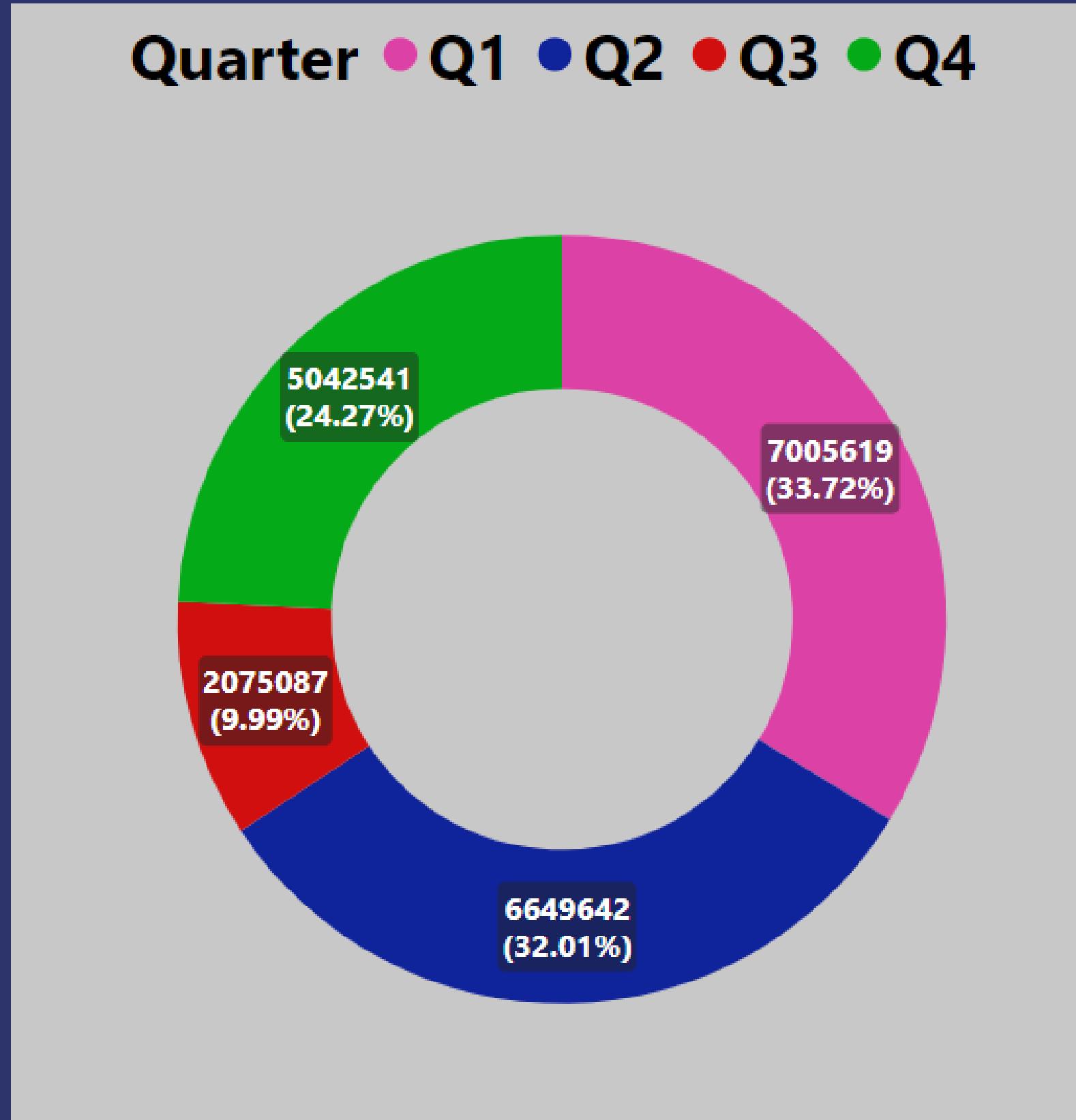
## QUERY

## OUTPUT

	Quarter	sold_quantity
▶	Q1	7005619
	Q2	6649642
	Q3	2075087
	Q4	5042541

```
WITH CTE AS
(
SELECT
    MONTH(DATE_ADD(date, INTERVAL 4 MONTH)) AS month_num,
    fiscal_year,
    sold_quantity
FROM fact_sales_monthly
WHERE fiscal_year = 2020)
SELECT
    CONCAT("Q", CEILING(month_num/3)) AS Quarter,
    SUM(sold_quantity) AS sold_quantity
FROM CTE
GROUP BY Quarter
ORDER BY Quarter
```

# INSIGHTS



Q1 recorded the highest quantity sold [ 7 Miliion] in FY 2020.

Q3 had the lowest quantity sold [ 2 Million] in FY 2020 due to global lockdowns from the COVID-19 pandemic.

Sold quantity dropped by 5 million [a 250% decrease] from Q1 to Q3 due to COVID but recovered 150% of that loss in Q4 post-COVID.

## QUESTION

# AD - HOC REQUEST 9

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

## OUTPUT

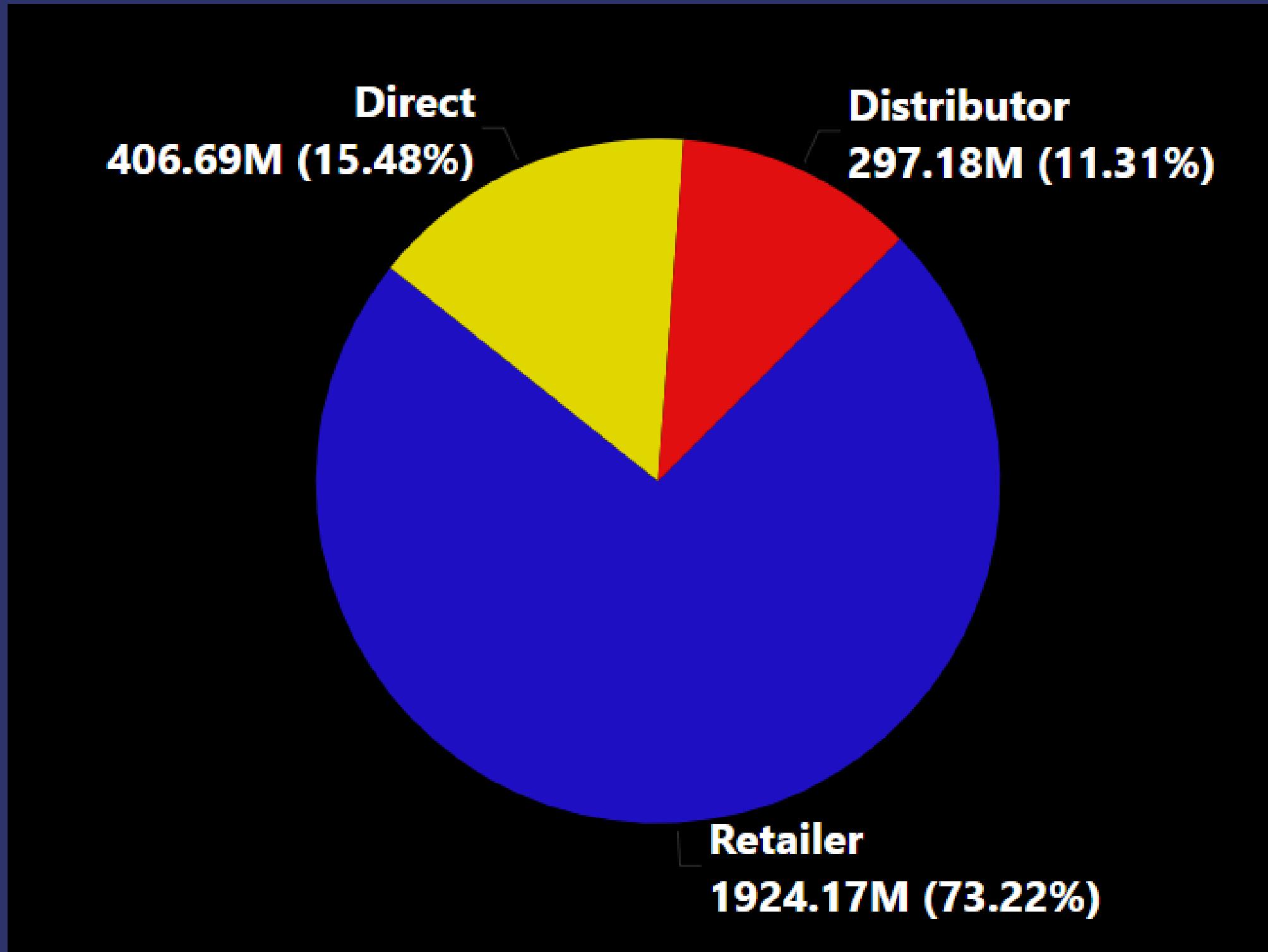
	channel	gross_sales_mln	percentage_contribution
▶	Retailer	1924.17	73.22 %
	Direct	406.69	15.48 %
	Distributor	297.18	11.31 %

## QUERY

```
WITH CTE AS (SELECT
    c.channel,
    ROUND(SUM(g.gross_price * s.sold_quantity)/1000000,2) AS gross_sales_mln
  FROM fact_sales_monthly s
  JOIN fact_gross_price g
  ON g.product_code = s.product_code
  JOIN dim_customer c
  ON c.customer_code = s.customer_code
  WHERE s.fiscal_year = 2021
  GROUP BY channel)

SELECT
    *,
    CONCAT(ROUND(gross_sales_mln*100/SUM(gross_sales_mln) OVER(),2)," %") AS percentage_contribution
  FROM CTE
  ORDER BY percentage_contribution DESC
```

# INSIGHTS



The retailer channel, including stores like Croma and Amazon, contributed the largest share of 73.22%, with nearly \$2 billion in gross sales out of three channels.

The direct and distributor channels contributed the remaining 26.79% of sales during FY 2021.

This shows that the majority of AtliQ's business is with retailers, so they can expand their customer base by offering tailored discounts and promoting B2B sales.

# AD - HOC REQUEST 10

QUESTION



Get the Top 3 products in each division that have a high total\_sold\_quantity in the fiscal\_year 2021?

QUERY

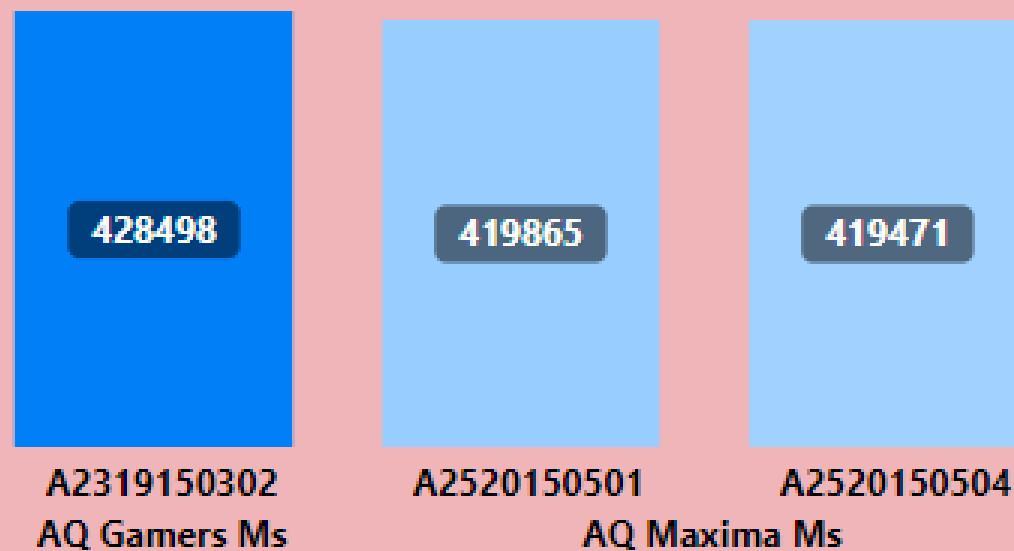
```
WITH CTE AS (SELECT division, product_code, product, SUM(sold_quantity) AS total_sold_quantity
FROM dim_product
JOIN fact_sales_monthly
USING (product_code)
WHERE fiscal_year = 2021
GROUP BY product_code, division, product),
CTE1 AS (SELECT *,RANK() OVER(PARTITION BY division ORDER BY total_sold_quantity DESC) AS rank_order
FROM CTE)
SELECT * FROM CTE1 WHERE rank_order <= 3
```

OUTPUT



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

## P & A division

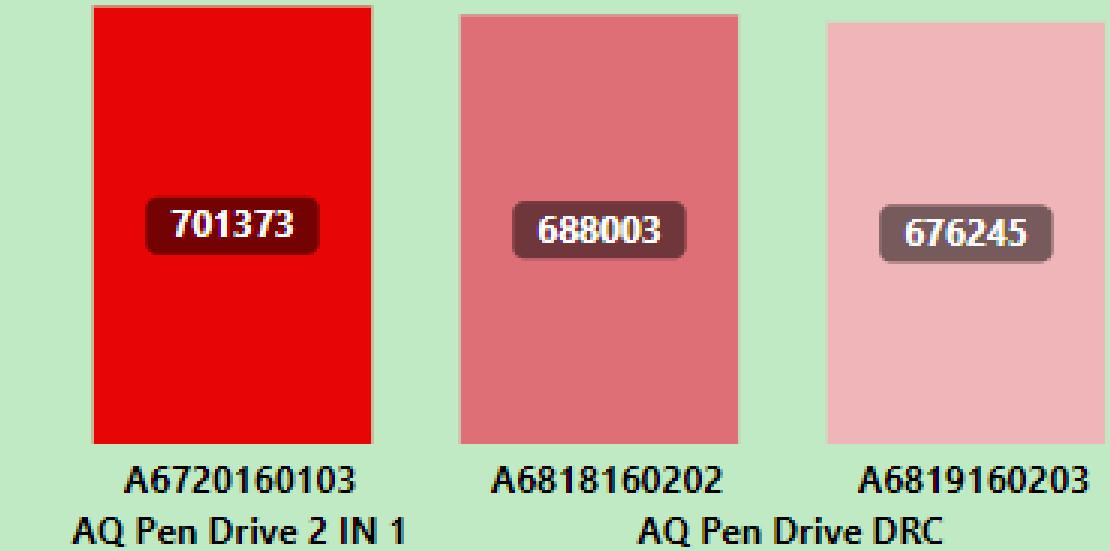


The top 3 products in the P&A division are different mouse varieties, highlighting strong demand in this segment.

## INSIGHTS

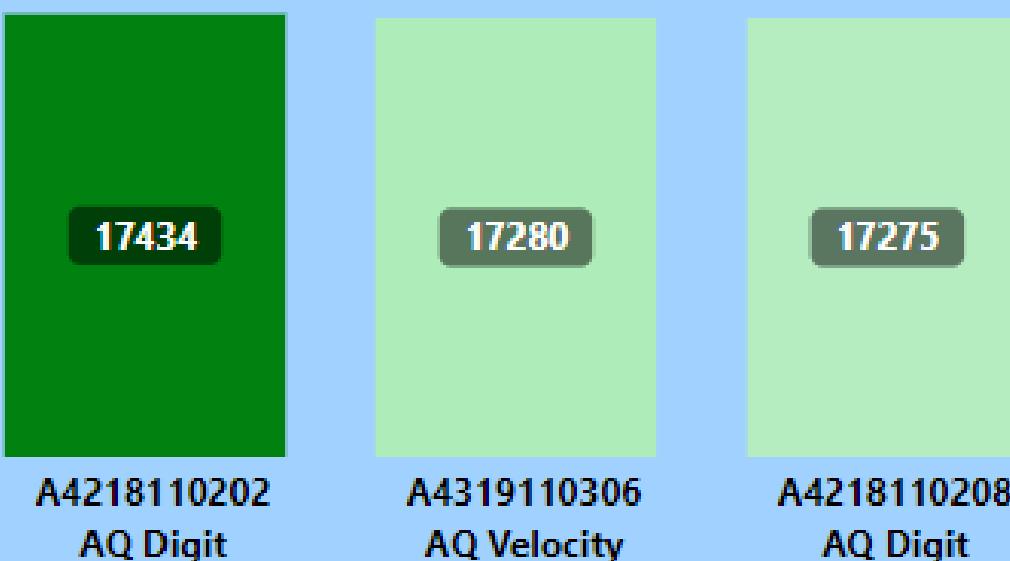
In terms of quantity sold, pendrives lead, followed by mouse, while PCs have the lowest sales, with all top 3 products showing similar sales figures within each division.

## N & S division



In the N&S division, the top 3 products are various pendrive varieties, indicating strong demand in this segment.

## PC division



Personal laptops are the top 3 products in the PC division, reflecting high demand in this segment.

# RECOMMENDATIONS FOR ATLIQ HARDWARE

- Customizing sales and marketing strategies for each country will help AtliQ align with local customer needs, boosting market presence and mirroring the approach of top competitors.
- Regularly updating product offerings based on customer trends ensures AtliQ remains relevant in a rapidly evolving market.
- Growing the product lineup in Networking, Storage, and Desktop segments taps into currently underserved customer bases and captures additional demand.
- Streamlining manufacturing costs and introducing discount structures for long-term contracts can improve profit margins while enhancing customer loyalty.
- Identifying seasonal sales patterns and strengthening distributor relationships through CRM and profit-sharing will support steady and consistent growth.

**THANK  
YOU**