



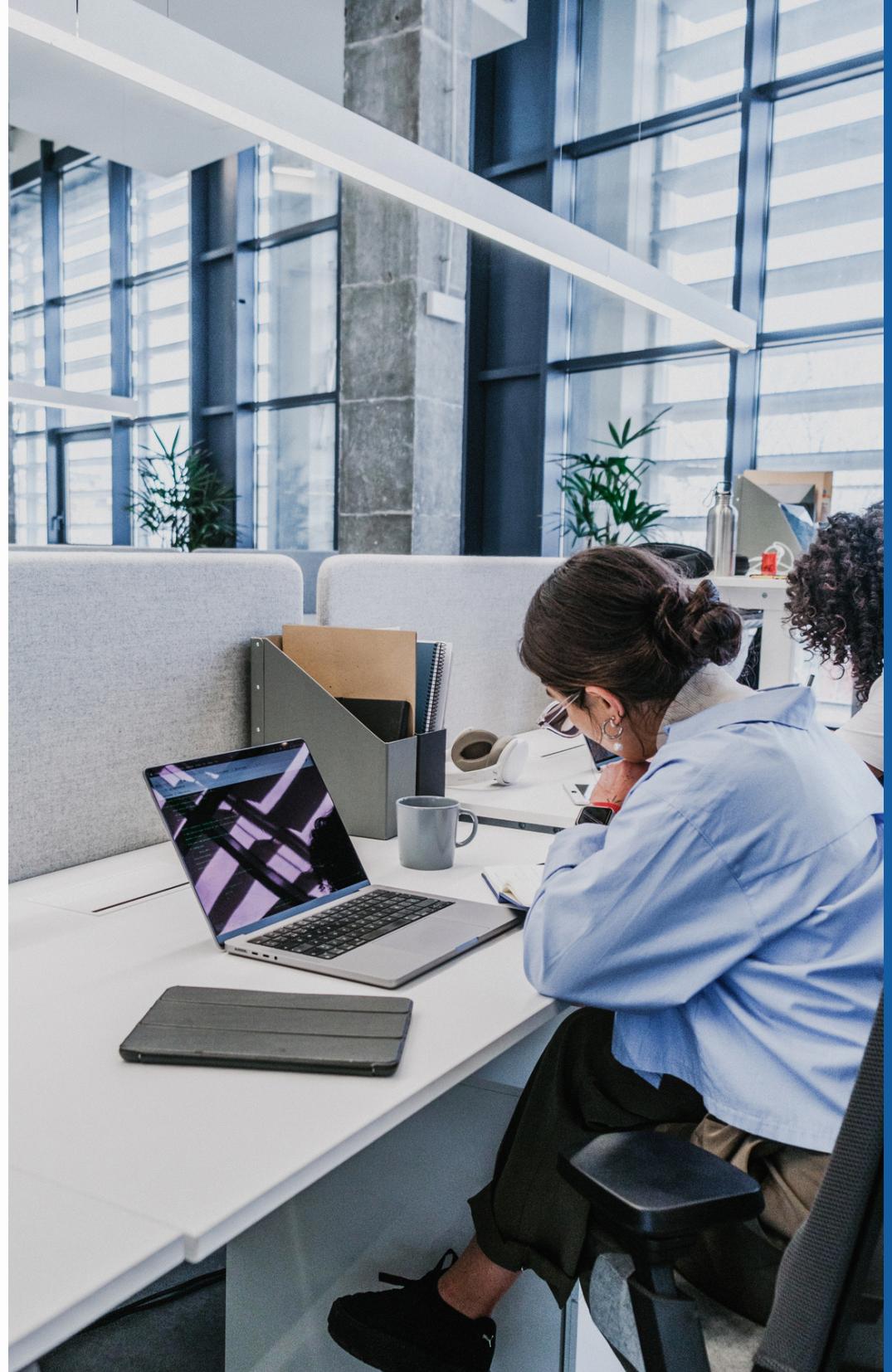
AD - HOC Insights

Consumer Goods

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Overview

- ▶ Company Overview
- ▶ Problem Statement
- ▶ Dataset and Data Models
- ▶ Ad - Hoc Request, Input and Insights
- ▶ Recommendations

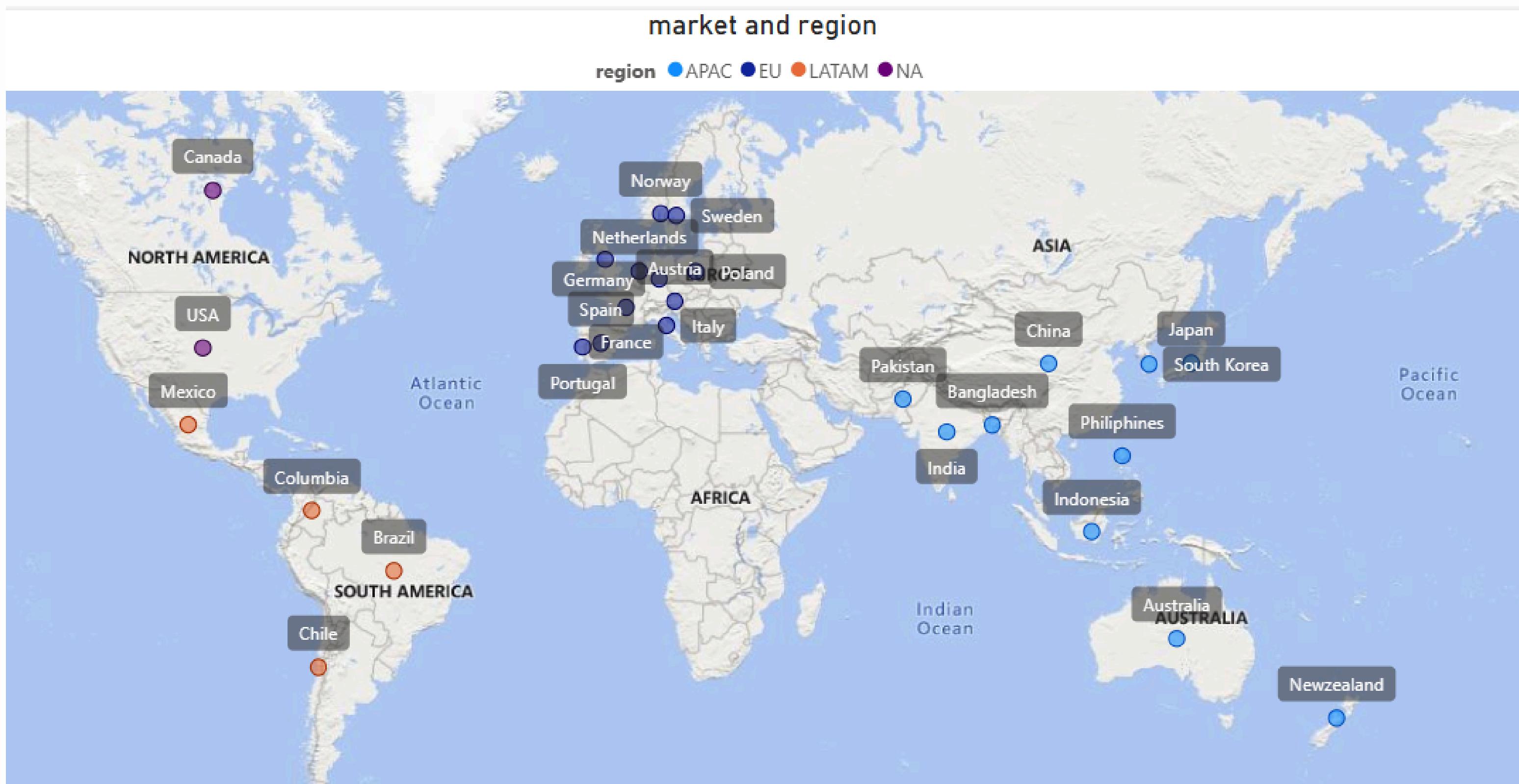


Company Overview

Atliq Hardwares (imaginary company) is one of the leading computer hardware producers in India and well expanded in other countries too.



AtliQ Markets



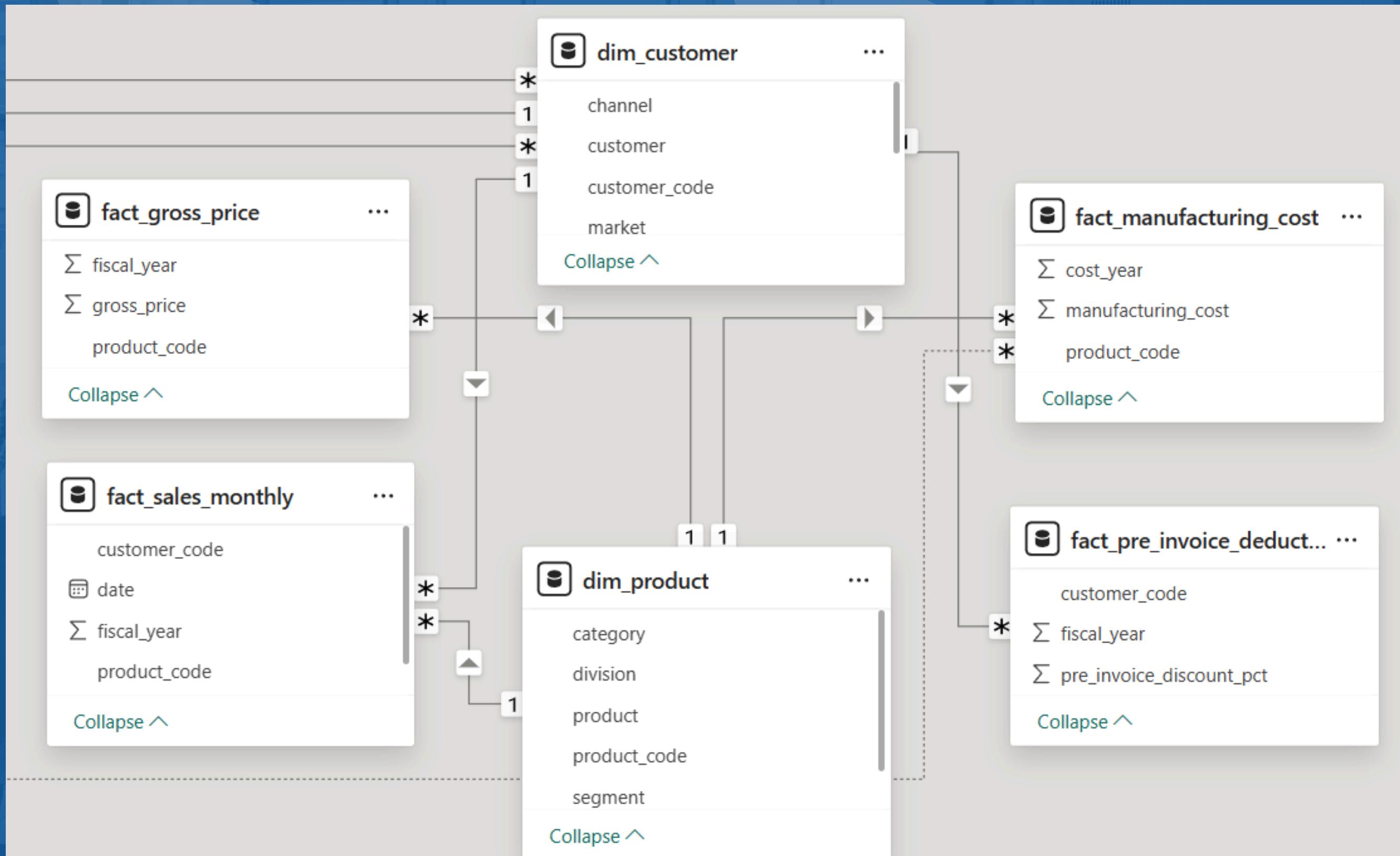
AtliQ Product Line



Problem Statement

- 01 Management noticed a lack of insights for quick, smart data-informed decisions.
- 02 Decision made to expand the data analytics team with several junior data analysts.
- 03 Analytics director, seeks candidates with strong tech and soft skills.
- 04 To evaluate these skills, Tony decided to conduct a SQL challenge.

DATASET



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

Request : 1

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

INPUT

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

OUTPUT

market
India
Indonesia
Japan
Philippines
South Korea
Australia
Newzealand
Bangladesh

INSIGHTS



AtliQ Exclusive operates in eight countries within the APAC region, demonstrating a significant regional market presence.

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 percentage_chg

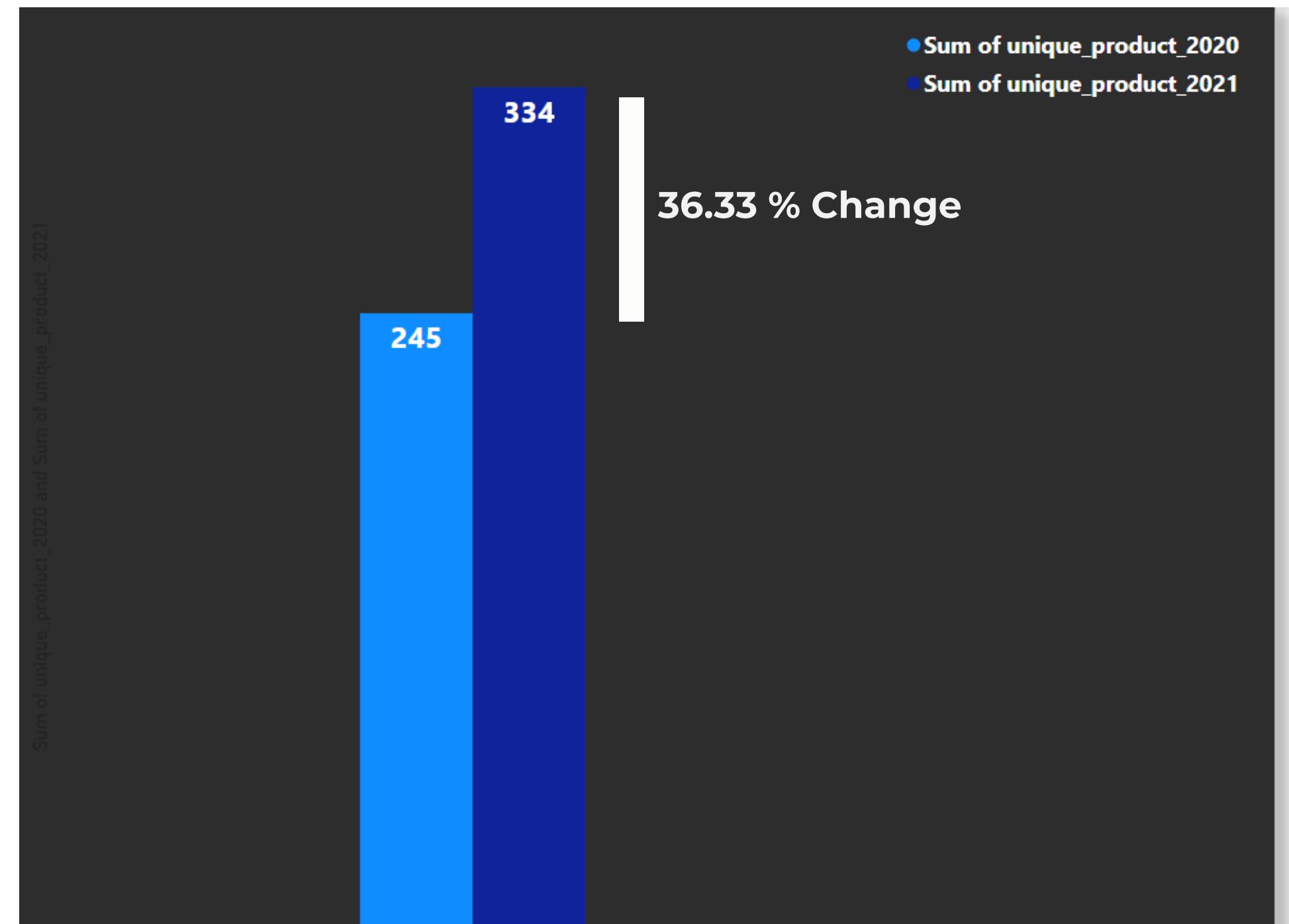
Input

```
```
WITH cte1 AS (
 SELECT COUNT(DISTINCT product_code) AS unique_product_2020
 FROM fact_sales_monthly
 WHERE fiscal_year = 2020
),
cte2 AS (
 SELECT COUNT(DISTINCT product_code) AS unique_product_2021
 FROM fact_sales_monthly
 WHERE fiscal_year = 2021
)
SELECT
 unique_product_2020,
 unique_product_2021,
 (unique_product_2021 - unique_product_2020) * 100.0 / unique_product_2020 AS pct_change
FROM cte1
CROSS JOIN cte2;
```

# OUTPUT

| unique_product_2020 | unique_product_2021 | pct_change |
|---------------------|---------------------|------------|
| 245                 | 334                 | 36.3265    |

# INSIGHTS



- 1.The number of unique products increased from 245 in 2020 to 334 in 2021, showcasing an impressive growth of 36.33%.
- 2.This significant rise highlights the company's commitment to innovation and addressing the diverse needs of its customers.

## 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 product\_count.

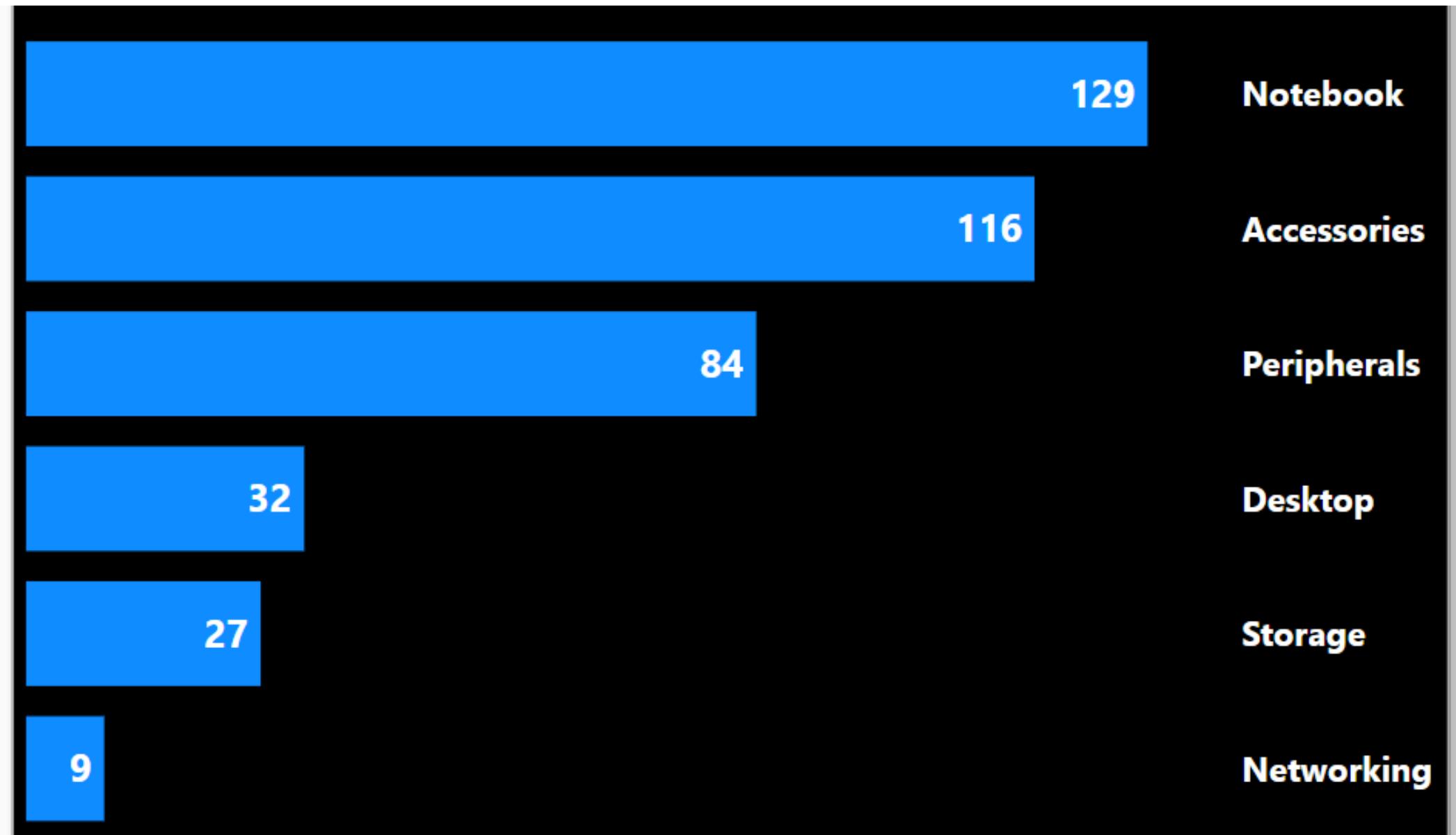
## Input

```
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             |

# INSIGHTS



1. AtliQ excels in the Notebooks, Accessories, and Peripherals category, representing an impressive 82.87% of its product variety.
2. The Desktops, Storage, and Networking segment currently comprises a smaller portion, accounting for only 17.13% of AtliQ's offerings.
3. In the Desktops, Storage, and Networking category, AtliQ should concentrate on products that resonate with current customer trends and industry requirements.

## 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

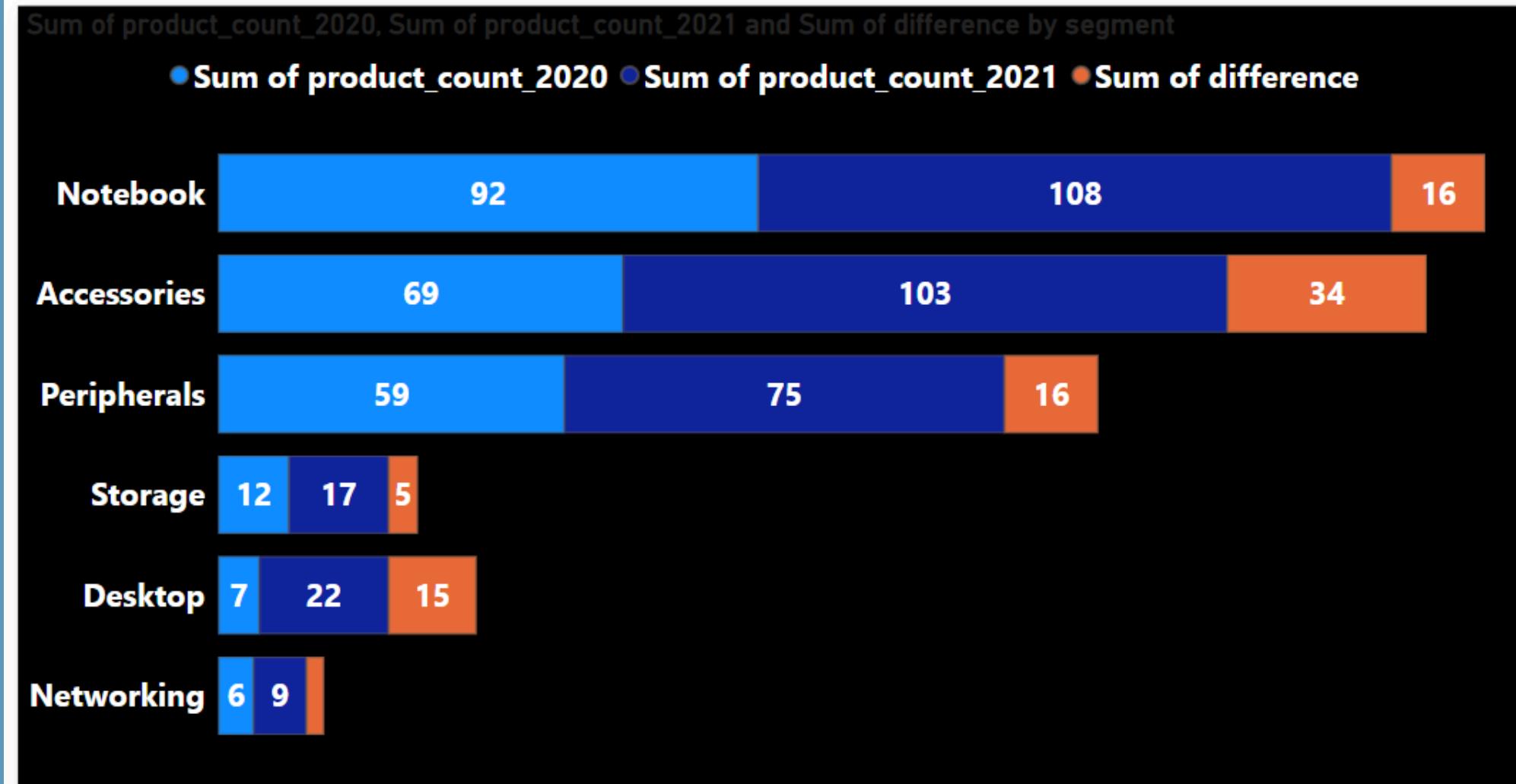
## Input

```
with unique_products as(
 select p.segment,
 count(distinct(case when fiscal_year = 2020 then s.product_code end)) as product_count_2020,
 count(distinct(case when 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 unique_products
 order by difference desc;
```

# 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          |

# INSIGHTS



1. Accessories have the most increased products from 2020 to 2021, with an increase of 34 new products.
2. Desktop products production increased drastically by approximately 214% from 2020 to 2021.
3. Storage and Networking segments are producing the least new products from 2020 to 2021.

## 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.

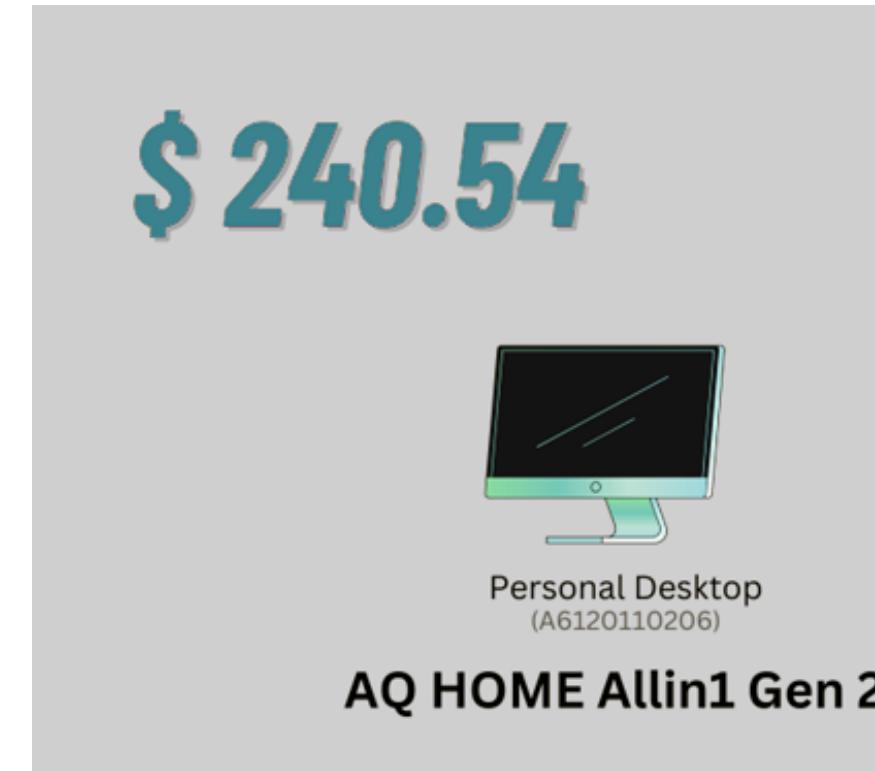
## Input

```
(select p.product_code,
 p.product,
 m.manufacturing_cost
 from dim_product p
 join fact_manufacturing_cost m
 on p.product_code = m.product_code
 order by m.manufacturing_cost desc
 limit 1)
union
(select p.product_code,
 p.product,
 m.manufacturing_cost
 from dim_product p
 join fact_manufacturing_cost m
 on p.product_code = m.product_code
 order by m.manufacturing_cost asc
 limit 1);
```

# OUTPUT

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

# INSIGHTS



Highest  
Manufacturing cost  
product



Lowest  
Manufacturing cost  
product

## 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

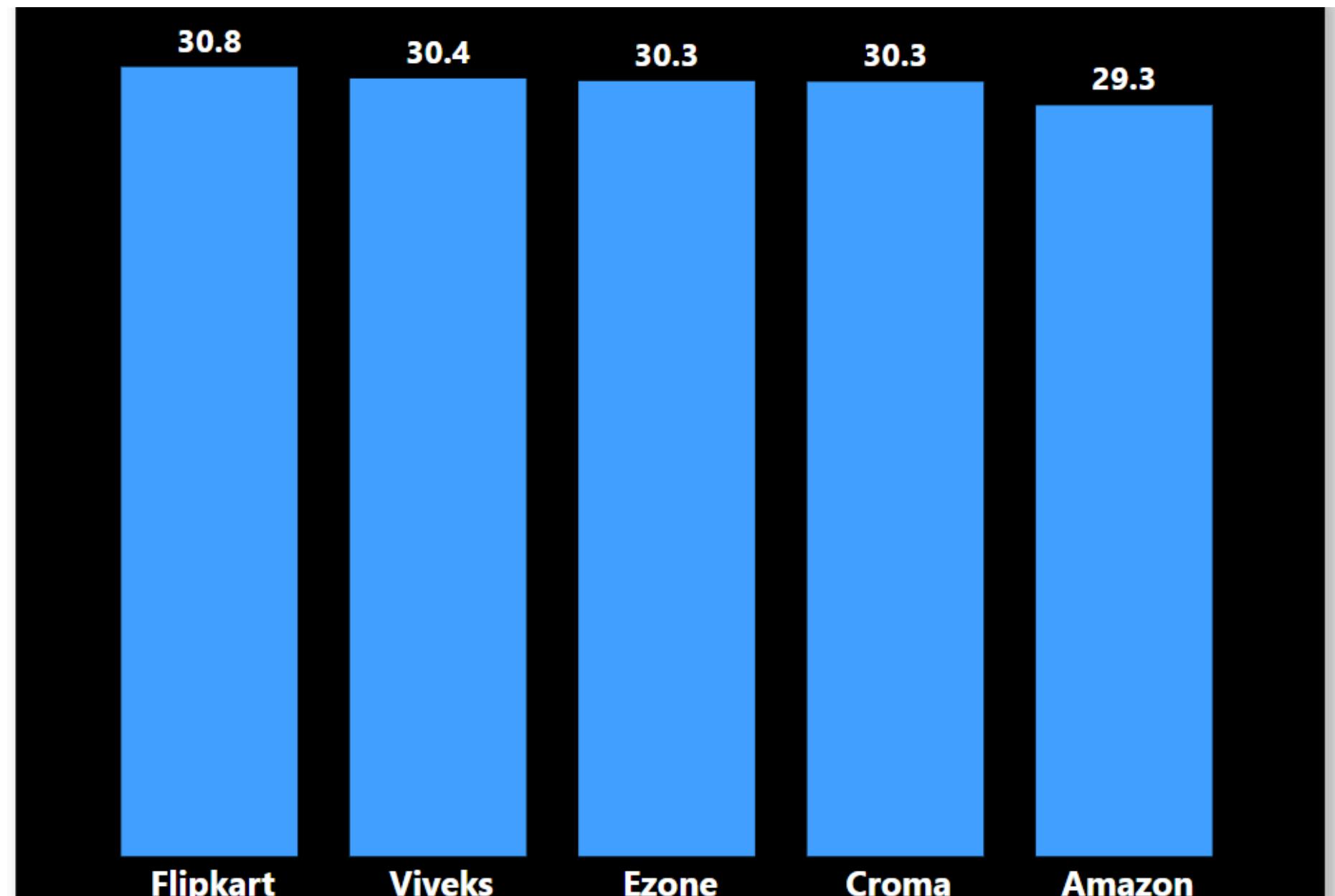
### Input

```
SELECT
 dc.customer_code,
 dc.customer,
 concat(round(AVG(fpd.pre_invoice_discount_pct)*100, 2), "%") AS average_discount_percentage
FROM
 dim_customer dc
JOIN
 fact_pre_invoice_deductions fpd
 ON dc.customer_code = fpd.customer_code
WHERE
 fpd.fiscal_year = 2021
 AND dc.market = 'India'
GROUP BY
 dc.customer_code, dc.customer
ORDER BY
 average_discount_percentage*100 DESC
LIMIT 5;
```

# 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%                      |

# INSIGHTS



1. Flipkart leads the list with the highest average discount percentage at 30.83%.
2. AtliQ has provided relatively uniform discount percentages to its top 5 customers, with a narrow range of discounts from 29.33% to 30.83%.

## 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 Gross sales Amount

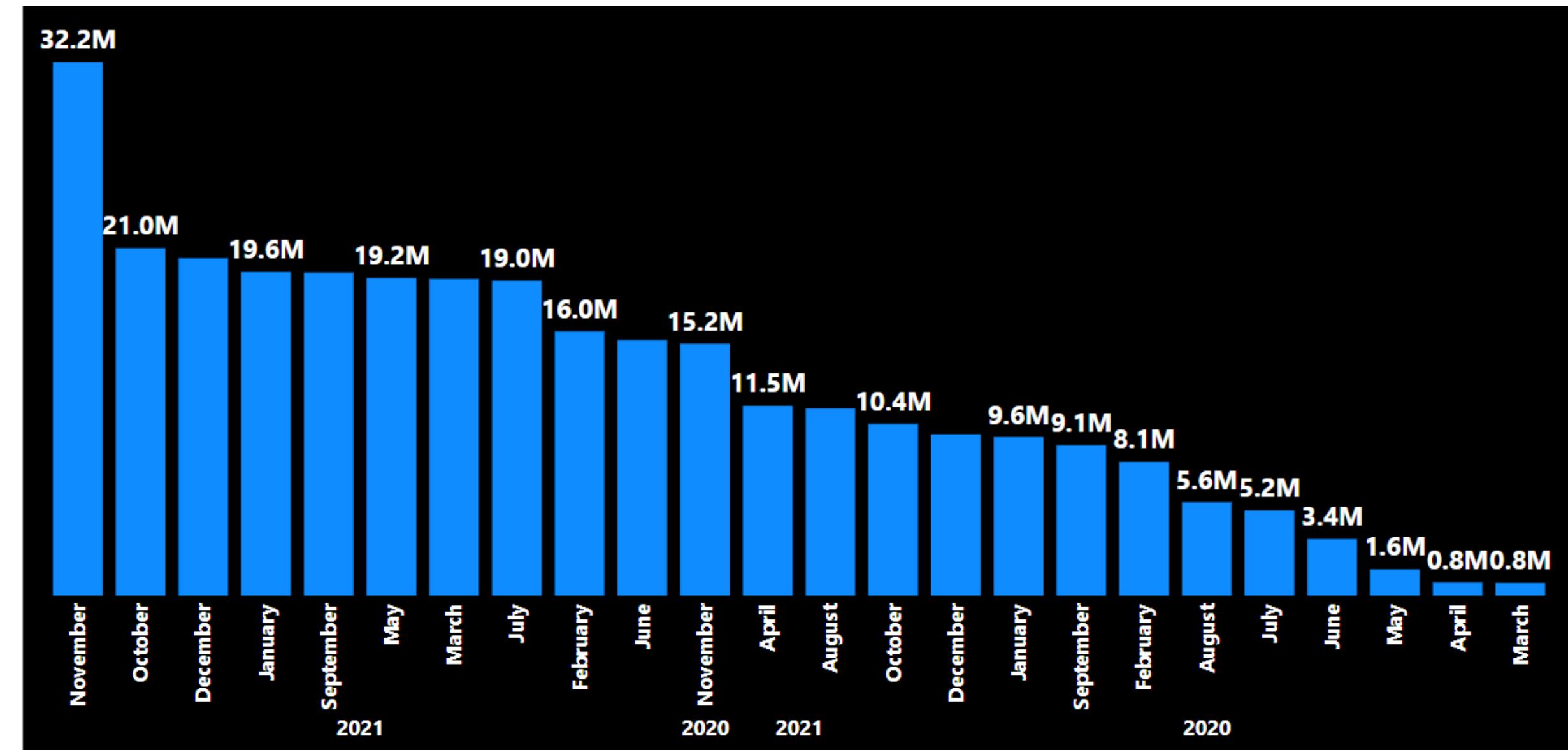
### Input

```
Select
monthname(s.date) as Month ,
s.fiscal_year as Year,
sum(sold_quantity*gross_price) as Gross_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 customer = "AtliQ Exclusive"
group by month,year
order by year asc ;
```

# 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 |

# INSIGHTS



1. March, April, May recorded the lowest sales in 2020, likely due to the COVID-19 pandemic. Sales began to recover after June 2020.
2. November generated the highest sales for 2020, with around 15.23 million.
3. Sales figures in 2021 show significant growth compared to 2020.
4. In 2021, the lowest sales were in August, accounting for 11.32 million, while the highest sales were in November, reaching 32.25 million.

## 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

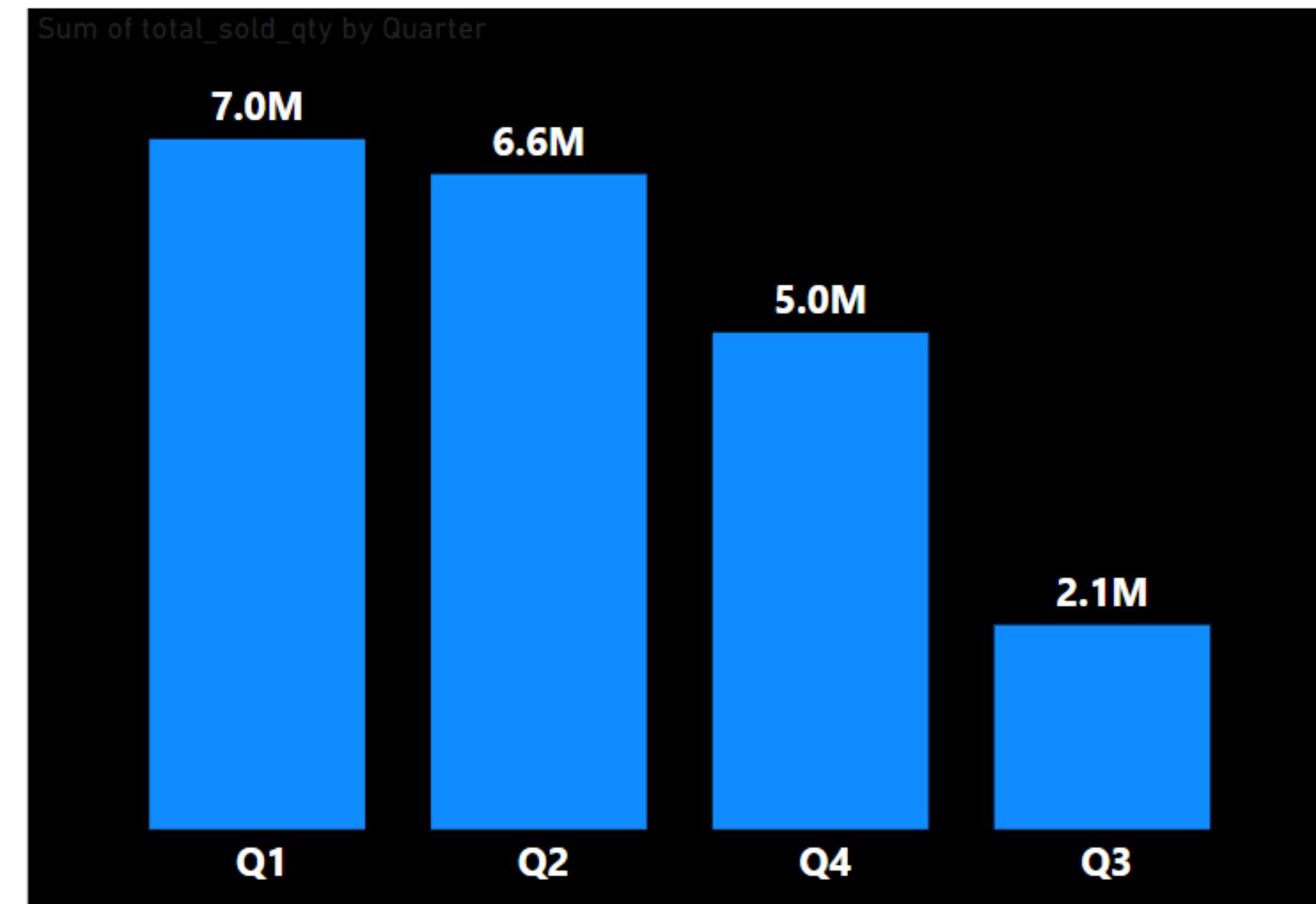
### Input

```
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 Quarter,
 sum(sold_quantity) as total_sold_qty
from fact_sales_monthly
where fiscal_year = 2020
group by Quarter
order by total_sold_qty desc ;
```

# OUTPUT

| Quarter | total_sold_qty |
|---------|----------------|
| Q1      | 7005619        |
| Q2      | 6649642        |
| Q4      | 5042541        |
| Q3      | 2075087        |

# INSIGHTS



1. Q1 (2020) saw the highest sales volume, reaching around 7 million units, indicating strong performance early in the year.
2. AtliQ experienced a significant decline in sales during Q3 (March, April, May), possibly due to the COVID-19 pandemic, reflecting challenging market conditions and shifting consumer behavior

## 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

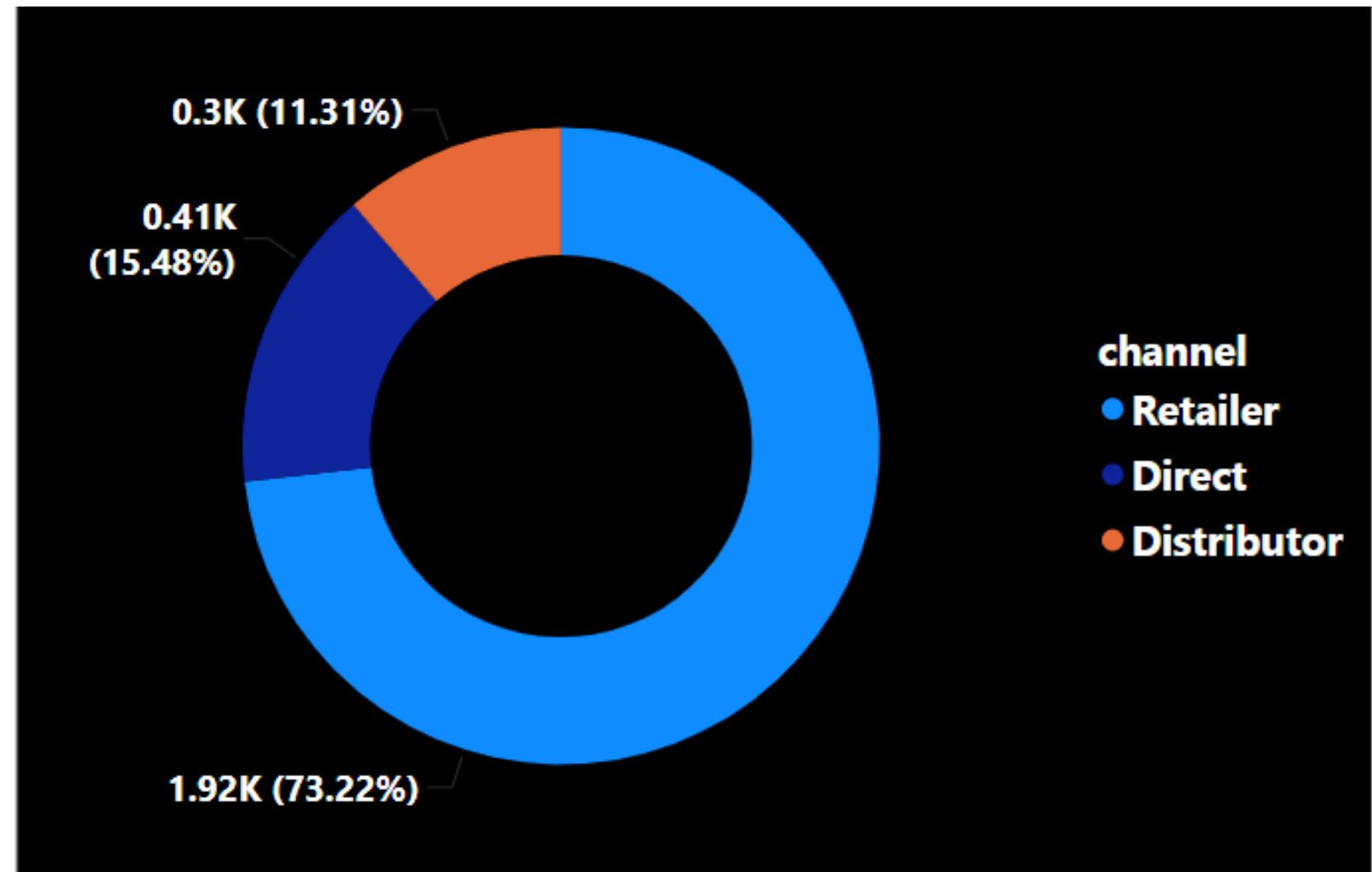
## Input

```
with cte1 as (
 select
 c.channel,
 round(sum((s.sold_quantity*g.gross_price)/1000000),2) as gross_sales_mln
 from dim_customer c
 join fact_sales_monthly s
 on c.customer_code = s.customer_code
 join fact_gross_price g
 on s.product_code = g.product_code
 where s.fiscal_year = 2021
 group by c.channel
)
select
 * ,
 concat(round(gross_sales_mln*100/ (select sum(gross_sales_mln) from cte1),2)," %")
as pct_contribution
from cte1
order by pct_contribution desc;
```

# OUTPUT

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

# INSIGHTS



1. The majority of AtliQ's sales come from retailers, accounting for a substantial 73.22% of the total gross sales.
2. Direct and distributor channel together contributes only 26.79% of the total sales.

## 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

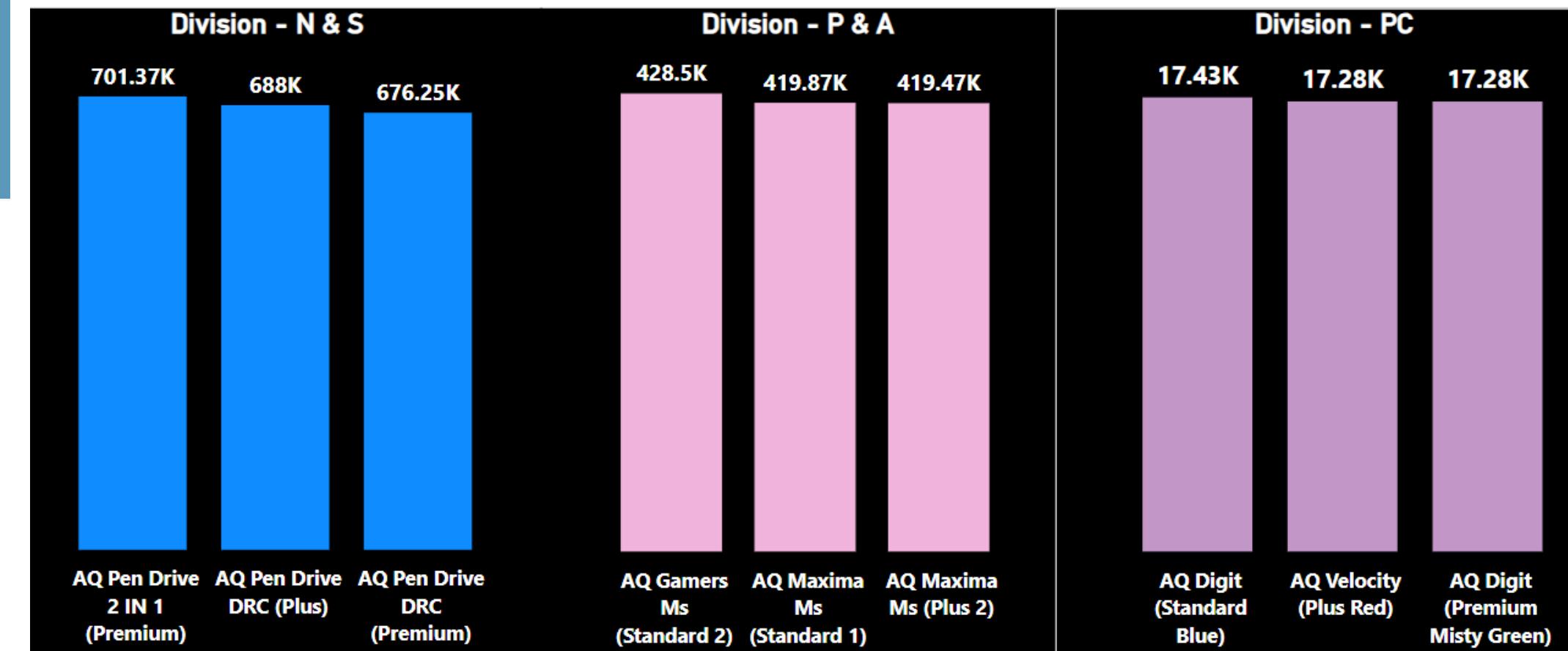
### Input

```
WITH cte1 AS (
 SELECT p.division, s.product_code,
 CONCAT(p.product, ' (', p.variant, ')') AS product,
 SUM(s.sold_quantity) AS total_sold_qty,
 RANK() OVER (
 PARTITION BY p.division
 ORDER BY SUM(s.sold_quantity) DESC
) AS rank_order
 FROM dim_product p
 JOIN
 fact_sales_monthly s
 ON p.product_code = s.product_code
 WHERE s.fiscal_year = 2021
 GROUP BY p.division, s.product_code, p.product, p.variant
)
SELECT division, product_code, product, total_sold_qty, rank_order
FROM cte1
WHERE rank_order IN (1, 2, 3)
ORDER BY division, rank_order;
```

# OUTPUT

# INSIGHTS

|   | 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          |



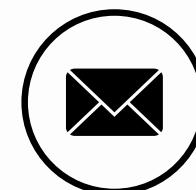
1. In the N & S division, pen drives dominate the top three spots, showcasing their popularity and high sales performance.
2. The P & A division's top three products are exclusively mouse, reflecting a clear demand for these devices.
3. The PC division's bestsellers are all personal laptops.

# Recommendations

1. Focus on desktops, Storage, and Networking segment.
2. Emphasizes multi-channel marketing.
3. Combine pricing strategies with attractive promotions.
4. Continuously improve based on customer feedback.
5. Invest in sales team training for improved performance



# THANK YOU!



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