



Atliq Hardwares

# Consumer Goods Ad-hoc Insights

Codebasics Resume Project Challenge

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# 1. PROJECT SUMMARY

## About Company

1

AtliqHardwares is one of India's leading computer hardware producers and well expanded in other countries.

## Problem Statement

2

Management of the company noticed they do not get enough insights to make quick, 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 good at tech and soft skills. Hence, he decided to conduct a SQL challenge which will help him understand both skills.

## Objective

3

In this challenge, it has been asked to run SQL queries to answer 10 important ad-hoc requests for which the business needs insights. The target audience of this dashboard is top-level management, so a presentation has to be created using which the management can get high-quality and accurate insights to take crucial business decisions.

### 3. ATLIQ's MARKET

Atliq Hardwares is well-expanded across

27 countries in Asia Pacific, European Union, North America

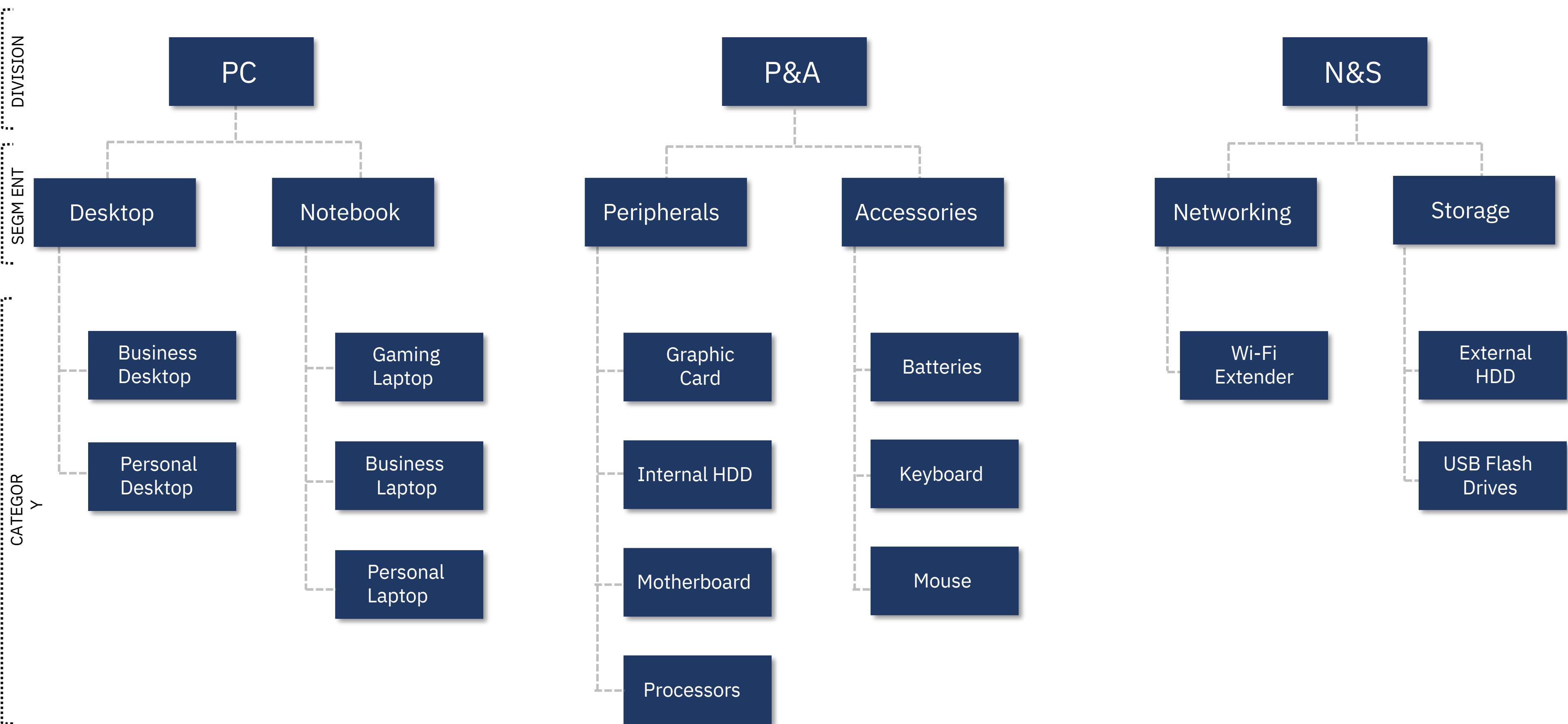
& Latin America regions.



# 4. ATLIQ's PRODUCT LINES

Atliq Hardwares has 3 product divisions

under which there are 6 product segments and 15 product categories .



## 5. AD-HOC REQUESTS

## Request 1

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

## SQL Query & Output



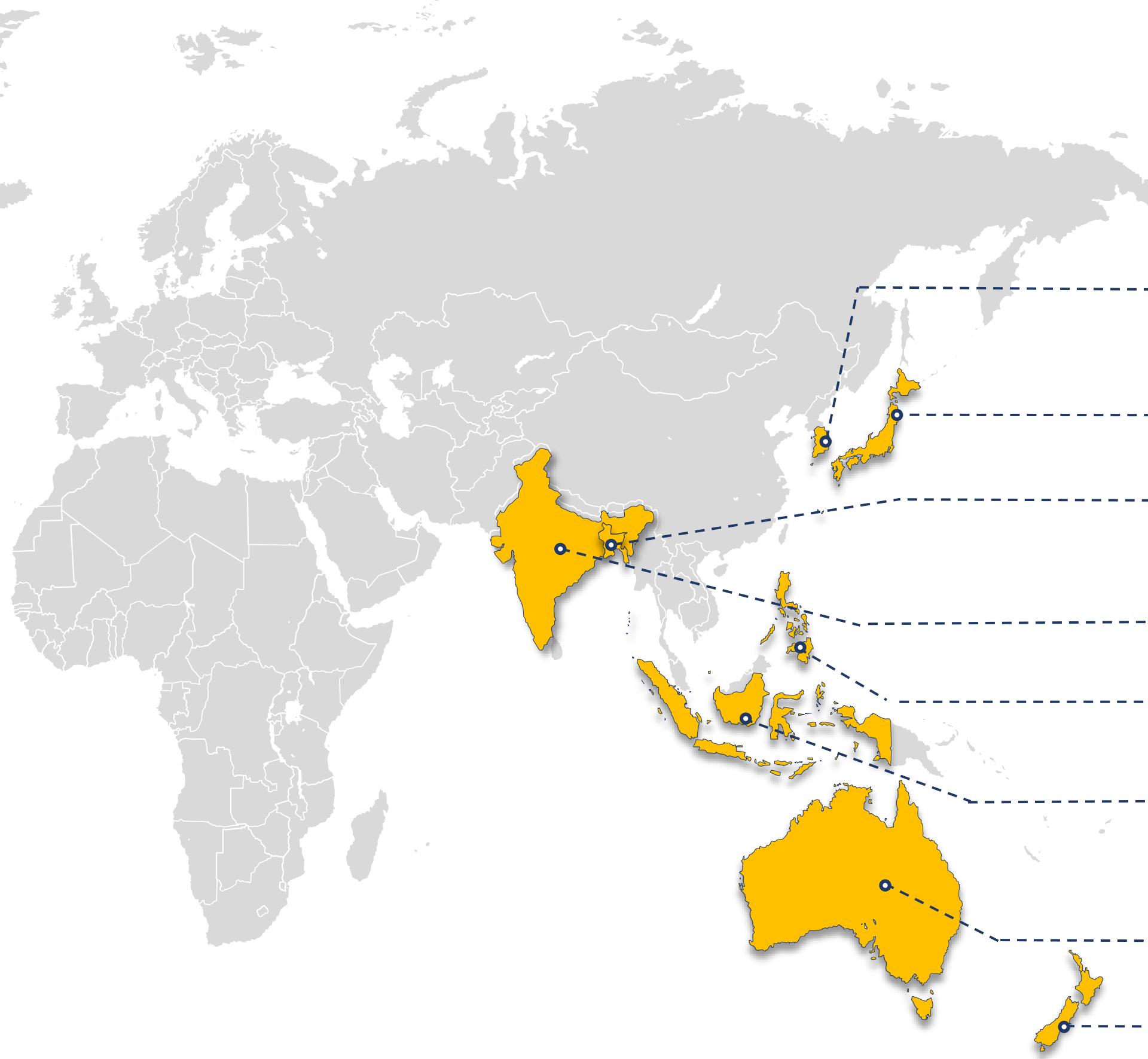
```
SELECT  
    DISTINCT(market)  
FROM  
    dim_customer  
WHERE  
    customer = "Atliq Exclusive"  
    AND region = "APAC";
```

--OUTPUT--

market
India
Indonesia
Japan
Philippines
South Korea
Australia
Newzealand
Bangladesh

# VISUALIZATION FOR REQUEST 1

Insights



- 1 Atliq Hardwares is operating in 27 countries across 4 regions.
- 2 Atliq Hardwares has its 'Brick & Mortar' exclusive stores operating across 8 countries in the Asia-Pacific (APAC) region.

SOUTH KOREA	(Sold Quantity: 886165, Gross Sales: \$26638619.44)
JAPAN	(Sold Quantity: 110360, Gross Sales: \$3270224.82)
BANGLADESH	(Sold Quantity: 260356, Gross Sales: \$7846410.30)
INDIA	(Sold Quantity: 3326313, Gross Sales: \$99670780.45)
PHILIPPINES	(Sold Quantity: 484708, Gross Sales: \$14726747.46)
INDONESIA	(Sold Quantity: 777623, Gross Sales: \$23752006.88)
AUSTRALIA	(Sold Quantity: 610559, Gross Sales: \$18420952.36)
NEW ZEALAND	(Sold Quantity: 223009, Gross Sales: \$6730807.69)

Customer: Atliq Exclusive & Region: APAC

## Request 2

What is the percentage of unique product increase  
 2021 vs 2020 contains these fields,  
 unique\_products\_2020  
 unique\_products\_2021  
 percentage\_change

```

WITH uniq_prod_in_2020 AS (
    SELECT
        count(
            DISTINCT(product_code)
        ) AS unique_products_2020
    FROM
        fact_sales_monthly
    WHERE
        fiscal_year = 2020
),
uniq_prod_in_2021 AS (
    SELECT
        count(
            DISTINCT(product_code)
        ) AS unique_products_2021
    FROM
        fact_sales_monthly
    WHERE
        fiscal_year = 2021
)
SELECT
    unique_products_2020,
    unique_products_2021,
    round(
        (
            unique_products_2021 - unique_products_2020
        ) * 100 / unique_products_2020,
        2
    ) AS percentage_change
FROM
    uniq_prod_in_2020 CROSS
    JOIN uniq_prod_in_2021;

```

--OUTPUT--

unique_products_2020	unique_products_2021	percentage_change
245	334	36.33

# VISUALIZATION FOR REQUEST 2

## Insights

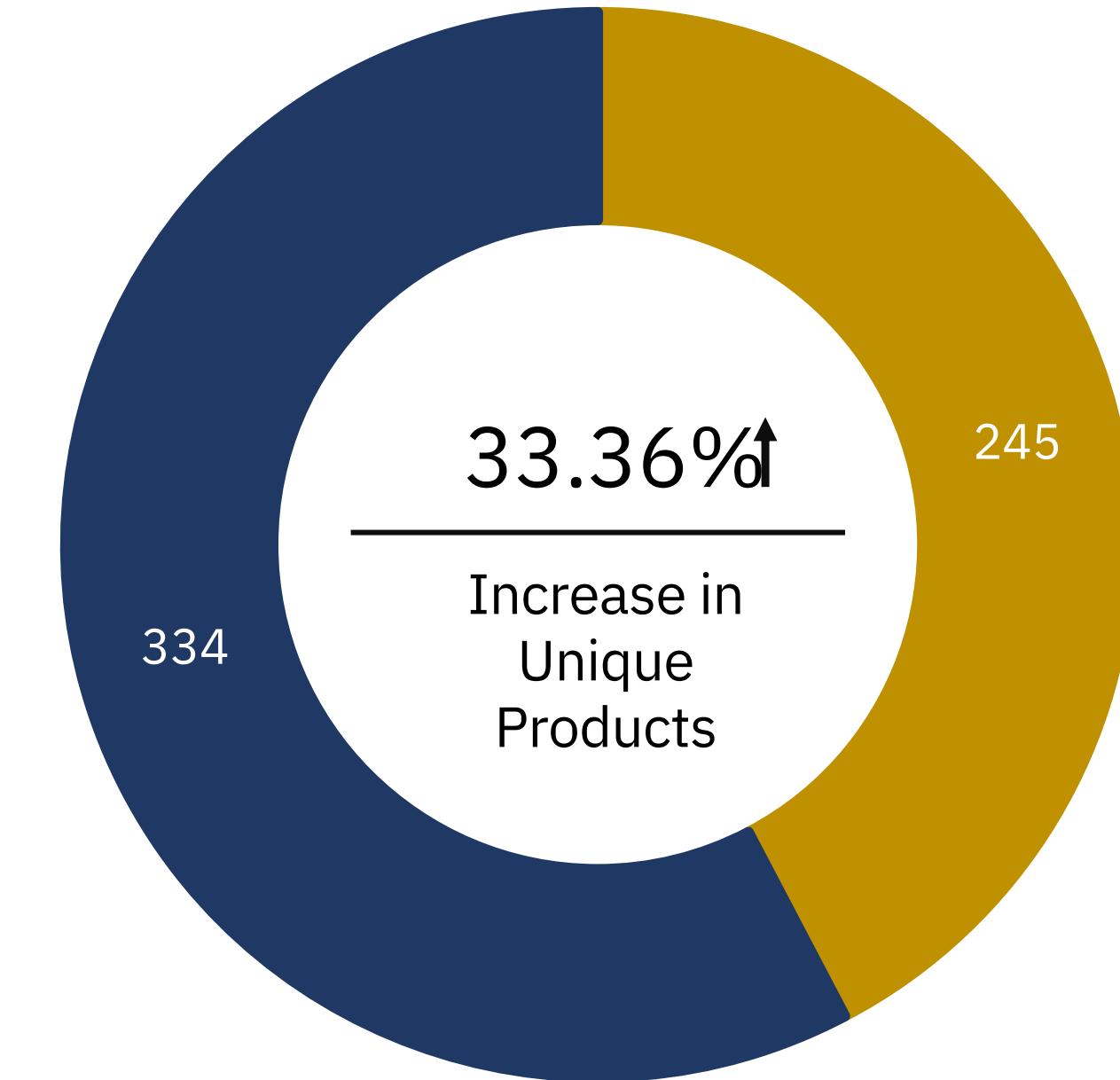
1

Atliq Hardwares produced 245 unique products in 2020 whereas it increased to 334 unique products in 2021.

2

With 89 more unique products produced in 2021, Atliq Hardwares has achieved a 33.36% increase in unique products from the previous year.

# of Unique Products (2020 vs 2021)



■ Unique Products (2020)

■ Unique Products (2021)

## 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

## SQL Query & Output



```
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

# VISUALIZATION FOR REQUEST 3

## Insights

1

Atliq Hardwares has 6 different product segments in which the Notebook segment has the highest number of unique products whereas Networking has the least number of unique products.

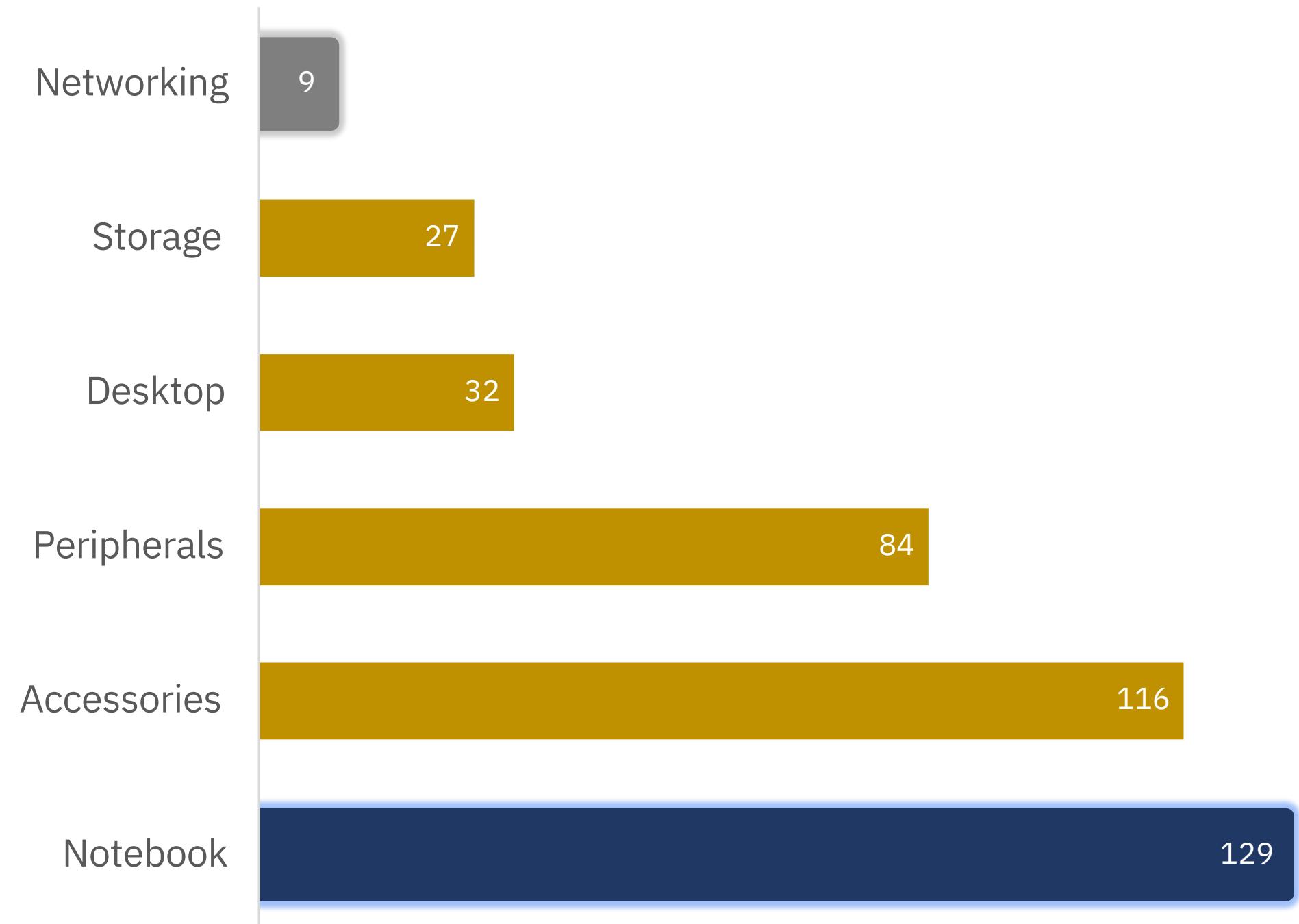
2

The Notebook segment has 129 unique products whereas the Networking segment with only 9 unique products is 120 unique products behind the Notebook segment.

3

Accessories and Peripherals segments are just behind the Notebook segment with 116 & 84 unique products respectively. Storage and Desktop segments have less variety of unique products with only 27 and 32 nos. respectively.

# of Unique Products by Segments



## Request 4

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

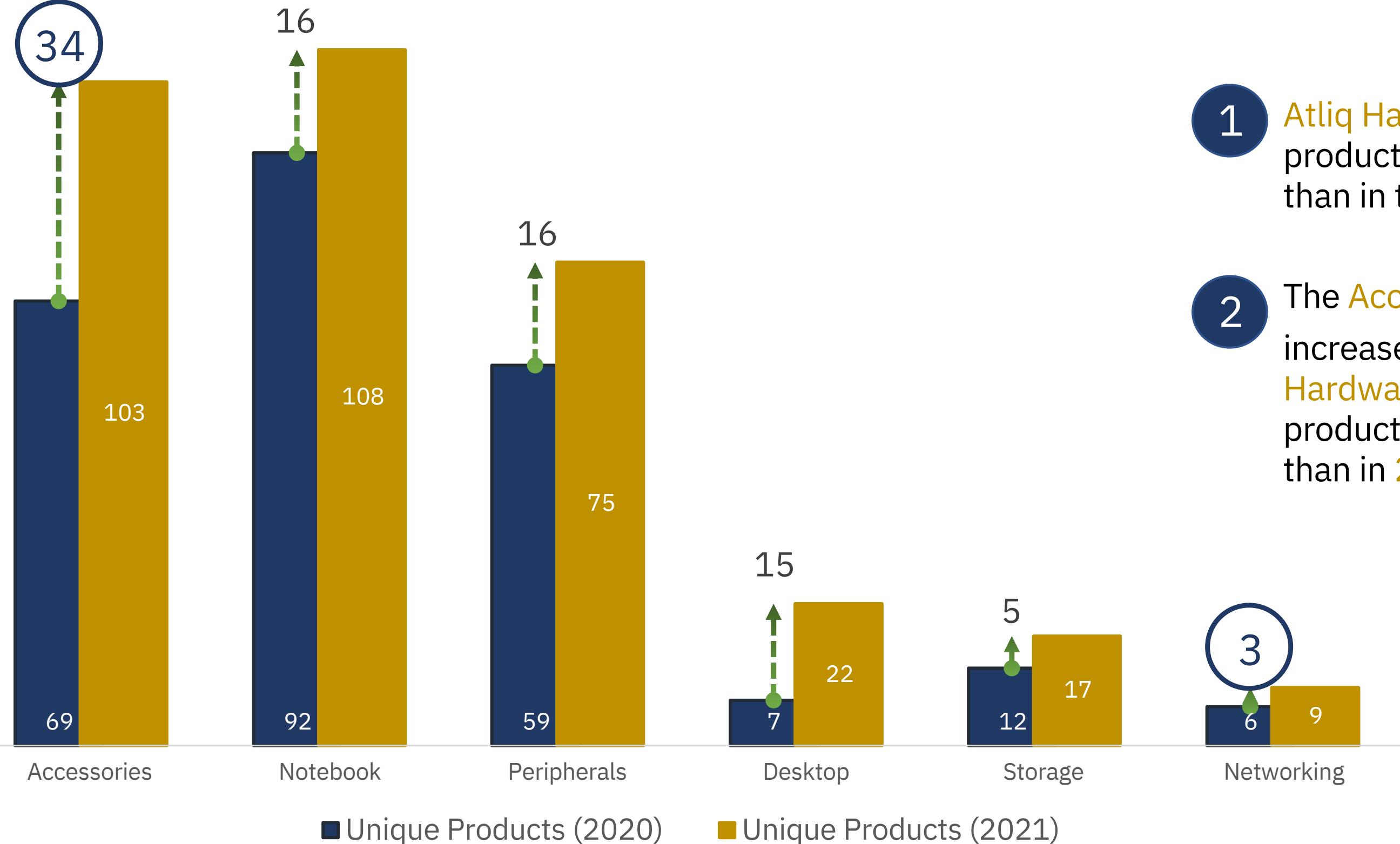
```
WITH uniq_prod_count_2020 AS (
  SELECT
    p.segment,
    COUNT(
      DISTINCT(p.product_code)
    ) AS product_count_2020,
    fiscal_year
  FROM
    dim_product p
    JOIN fact_sales_monthly s USING (product_code)
  WHERE
    fiscal_year = 2020
  GROUP BY
    segment
),
uniq_prod_count_2021 AS (
  SELECT
    p.segment,
    COUNT(
      DISTINCT(p.product_code)
    ) AS product_count_2021,
    fiscal_year
  FROM
    dim_product p
    JOIN fact_sales_monthly s USING (product_code)
  WHERE
    fiscal_year = 2021
  GROUP BY
    segment
)
SELECT
  segment,
  product_count_2020,
  product_count_2021,
  product_count_2021 - product_count_2020 AS difference
from
  uniq_prod_count_2020
  JOIN uniq_prod_count_2021 USING (segment)
GROUP BY
  segment
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

# VISUALIZATION FOR REQUEST 4

# of Unique Products by Segments (2020 vs 2021)



## Insights

- 1 Atliq Hardwares produced more unique products in every product segment in 2021 than in the previous year.
- 2 The Accessories segment has the most increase in unique products in 2021 as Atliq Hardwares has produced more unique products in the Accessories segment in 2021 than in 2020.

# VISUALIZATION FOR REQUEST 5

## Products with the Highest and the Lowest Manufacturing Costs

\$240.54

Highest Manufacturing Cost

Product Code: A6120110206

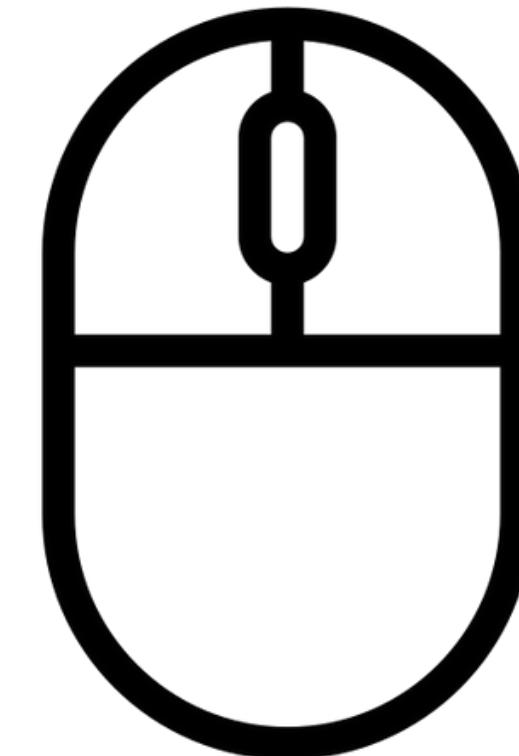
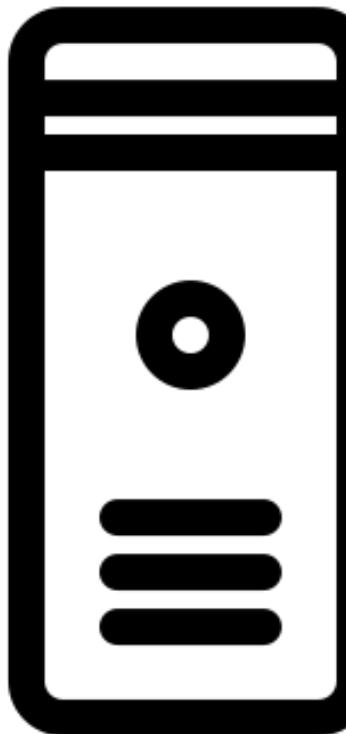
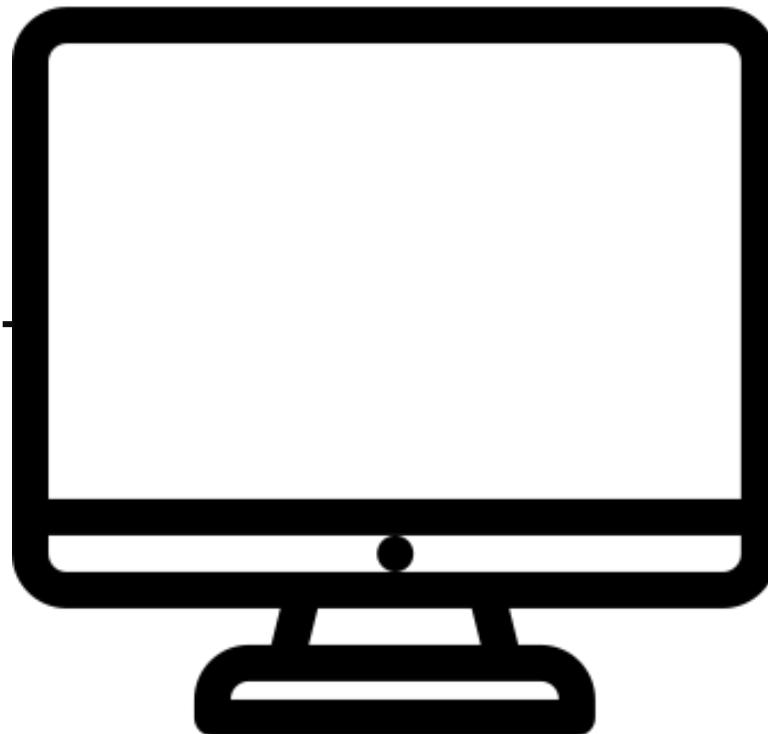
Product: AQ HOME Allin1 Gen 2

(Plus 3)

Segment: Desktop

Category: Personal Desktop

Variant: Plus 3



\$0.89

Lowest Manufacturing Cost

Product Code: A2118150101

Product: AQ Master wired x1 Ms

(Standard 1)

Segment: Accessories

Category: Mouse

Variant: Standard 1

## Insights

1 AQ HOME Allin1 Gen 2 (Plus 3) manufacturing cost of \$240.54.

under the personal desktop category has the highest

2 AQ Master wired x1 Ms (Standard 1) manufacturing cost of \$0.89.

under the mouse category has the lowest

## 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 & Output

```
SELECT
    c.customer_code,
    c.customer,
    d.fiscal_year,
    ROUND(
        AVG(d.pre_invoice_discount_pct),
        4
    ) AS average_discount_percentage
FROM
    fact_pre_invoice_deductions d
    JOIN dim_customer c using (customer_code)
WHERE
    fiscal_year = 2021
    AND market = "India"
GROUP BY
    d.fiscal_year,
    c.customer_code,
    c.customer
ORDER BY
    average_discount_percentage DESC
LIMIT
    5;
```

--OUTPUT--

customer_code	customer	fiscal_year	average_discount_percentage
90002009	Flipkart	2021	0.3083
90002006	Viveks	2021	0.3038
90002003	Ezone	2021	0.3028
90002002	Croma	2021	0.3025
90002016	Amazon	2021	0.2933

# VISUALIZATION FOR REQUEST 6

Top 5 Customers with High Average Pre-Invoice Discount Percentage (2021)

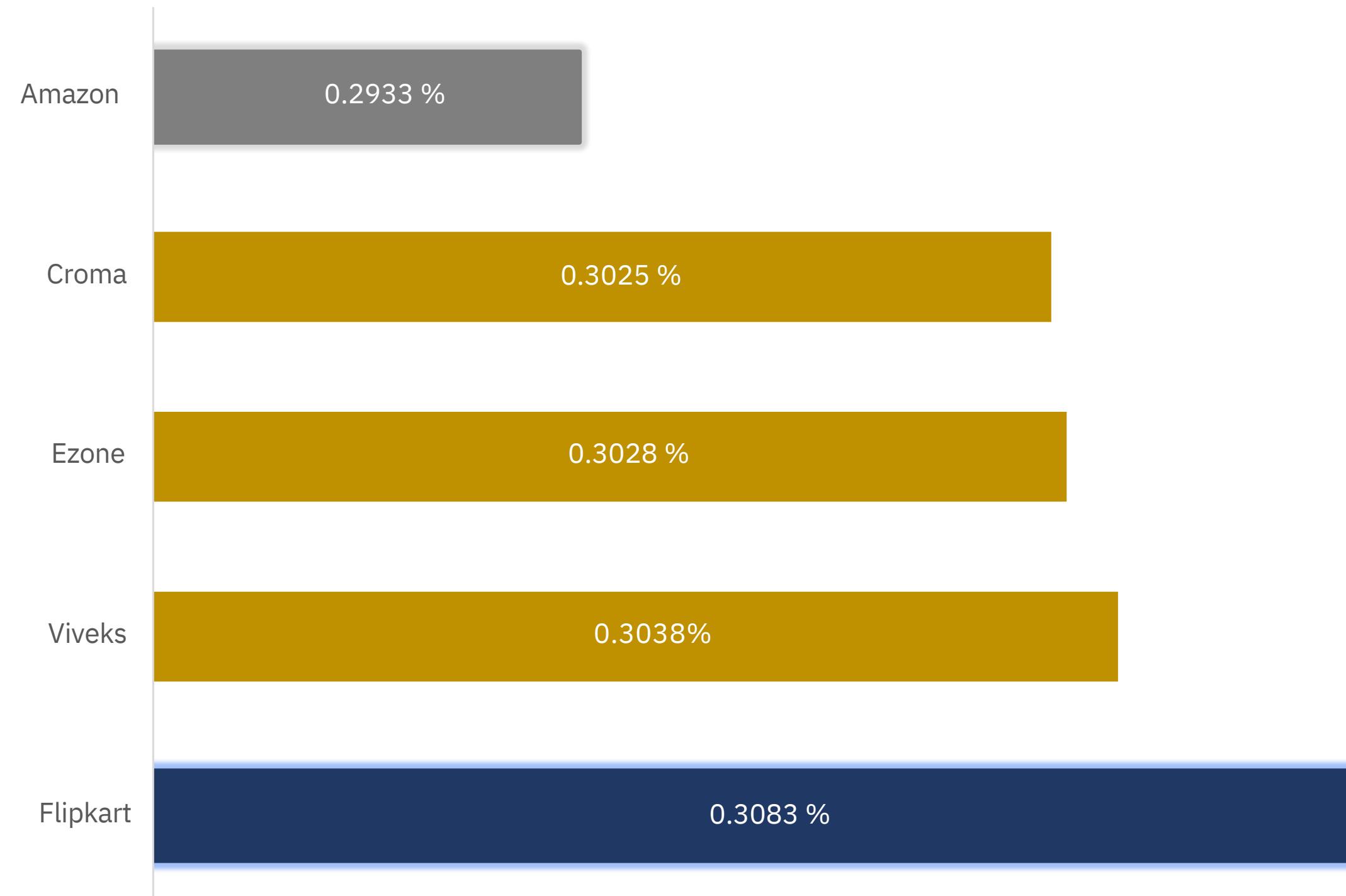
## Insights

1

Flipkart has received the highest Average Pre-Invoice Discount Percentage from Atliq Hardwares in 2021 followed by Viveksholding the second position.

2

Amazon has received the 5th highest Average Pre-Invoice Discount Percentage from Atliq Hardwares in 2021.



# 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**

```

SELECT
    MONTHNAME(s.date) AS MONTH,
    s.fiscal_year,
    ROUND(
        SUM(g.gross_price * s.sold_quantity),
        2
    ) AS gross_sales_amount
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
    c.customer = "Atliq Exclusive"
GROUP BY
    MONTHNAME(s.date),
    fiscal_year
ORDER BY
    s.fiscal_year;

```

--OUTPUT--

MONTH	fiscal_year	gross_sales_amount
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

# VISUALIZATION FOR REQUEST 7

## Monthly Gross Sales for Atliq Exclusive in Millions (2020 vs 2021)

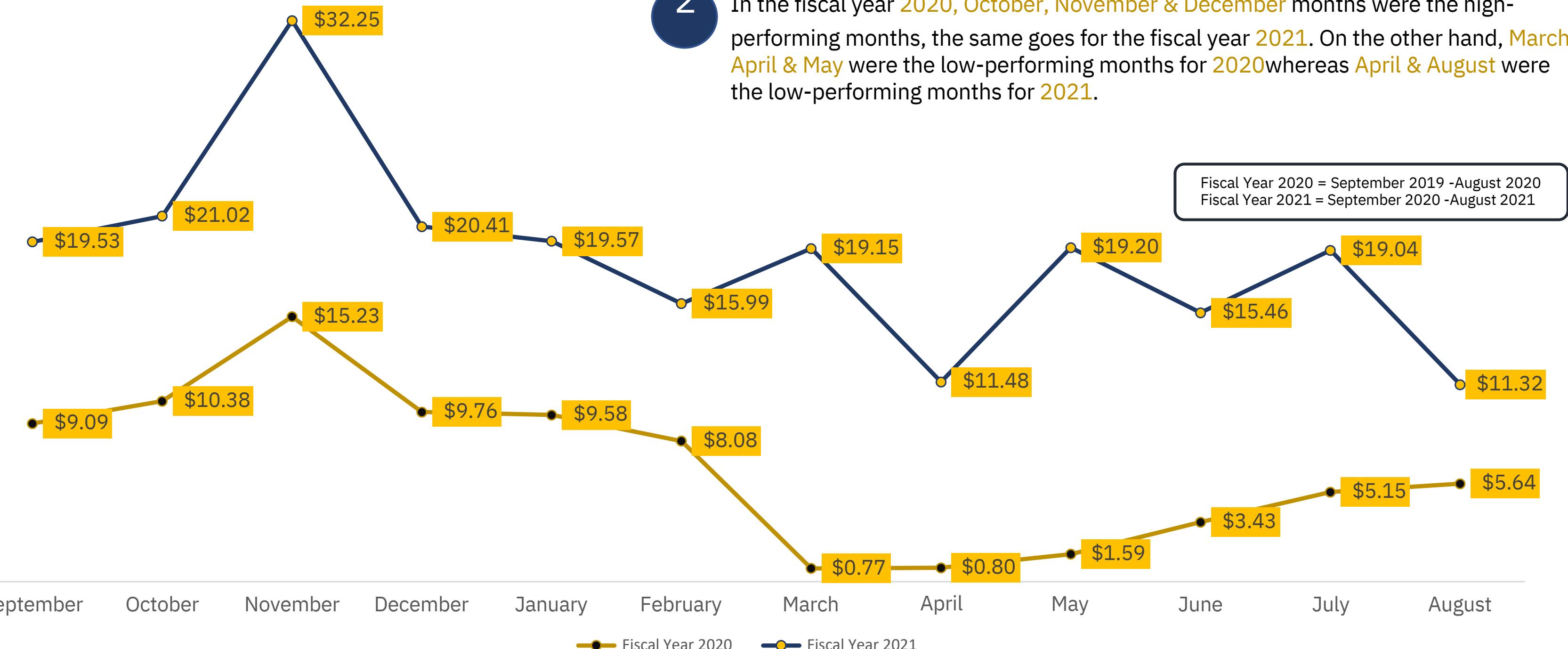
### Insights

1

In the fiscal year 2020, the gross sales were \$79.50 million whereas there is a significant growth in the gross sales in the fiscal year 2021 with \$224.42 million making the total gross sales of \$303.92 million for Atliq Exclusive.

2

In the fiscal year 2020, October, November & December months were the high-performing months, the same goes for the fiscal year 2021. On the other hand, March, April & May were the low-performing months for 2020 whereas April & August were the low-performing months for 2021.



## 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 Query & Output

```
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 quarter,
    SUM(sold_quantity) AS total_sold_quantity
FROM
    fact_sales_monthly
WHERE
    fiscal_year = 2020
GROUP BY
    quarter
ORDER BY
    total_sold_quantity DESC;
```

--OUTPUT--

quarter	total_sold_quantity
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087

# VISUALIZATION FOR REQUEST 8

## Total Sold Quantity by Quarters (2020)

### Insights

1

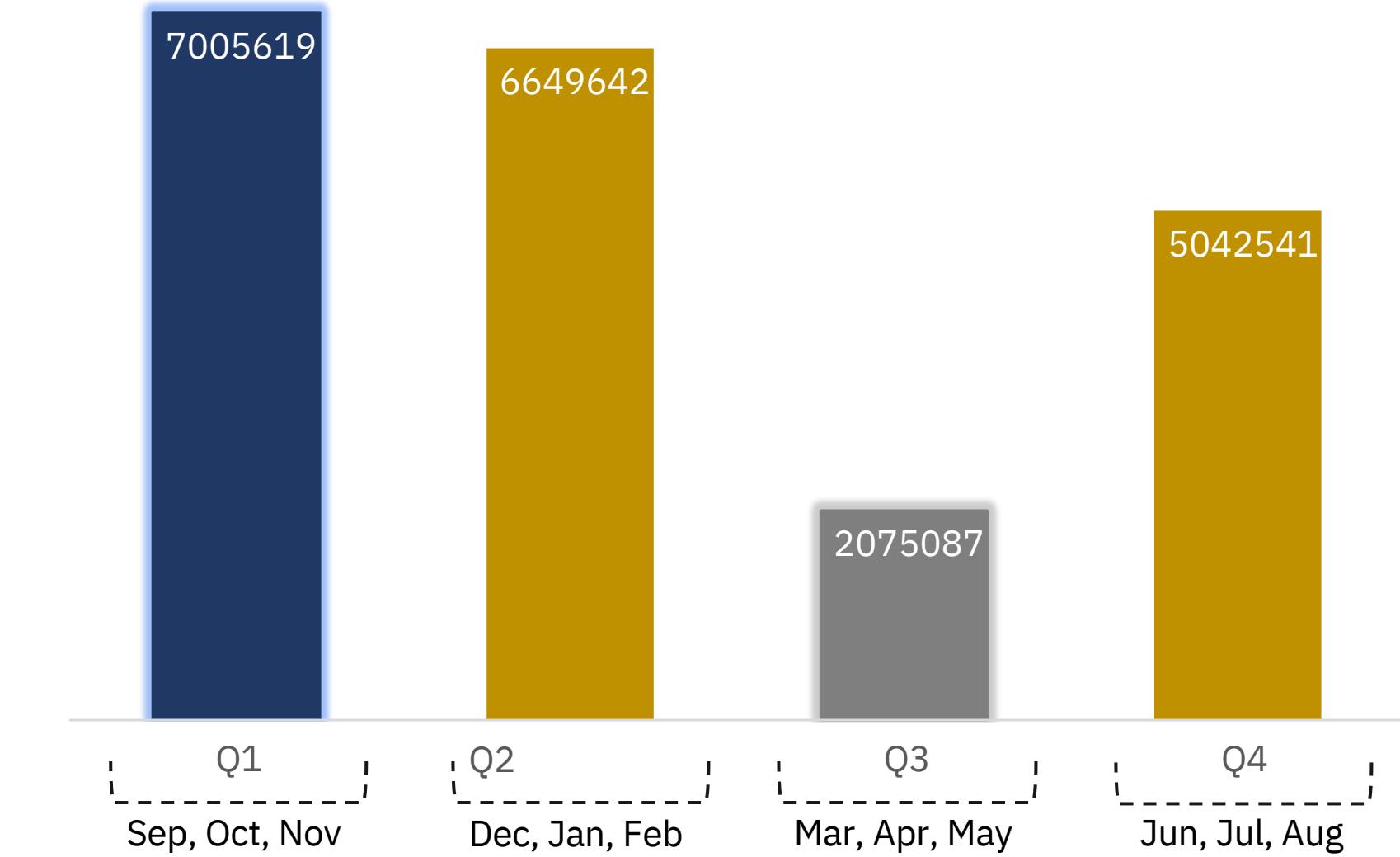
Quarter 1 (Q1) of the fiscal year 2020 got the highest Total Sold Quantity with 70,05,619.

2

The sales performance in Quarter 3 (Q3) of the fiscal year 2020 was significantly low as this quarter registered the lowest Total Sold Quantity with 20,75,087.

3

Atliq Hardwares has managed to recover its sales performance significantly in Quarter 4 (Q4) with a Total Sold Quantity of 50,42,541.



Fiscal Year 2020 = September 2019 -August 2020

## 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

```

WITH gross_sales_per_channel AS (
  SELECT
    c.channel,
    ROUND(
      SUM(g.gross_price * sold_quantity)/ 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
  gross_sales_per_channel.*,
  ROUND(
    gross_sales_mln * 100 / SUM(gross_sales_mln) OVER(),
    2
  ) AS percentage
FROM
  gross_sales_per_channel
ORDER BY
  percentage DESC;

```

--OUTPUT--

channel	gross_sales_mln	percentage
Retailer	1924.17	73.22
Direct	406.69	15.48
Distributor	297.18	11.31

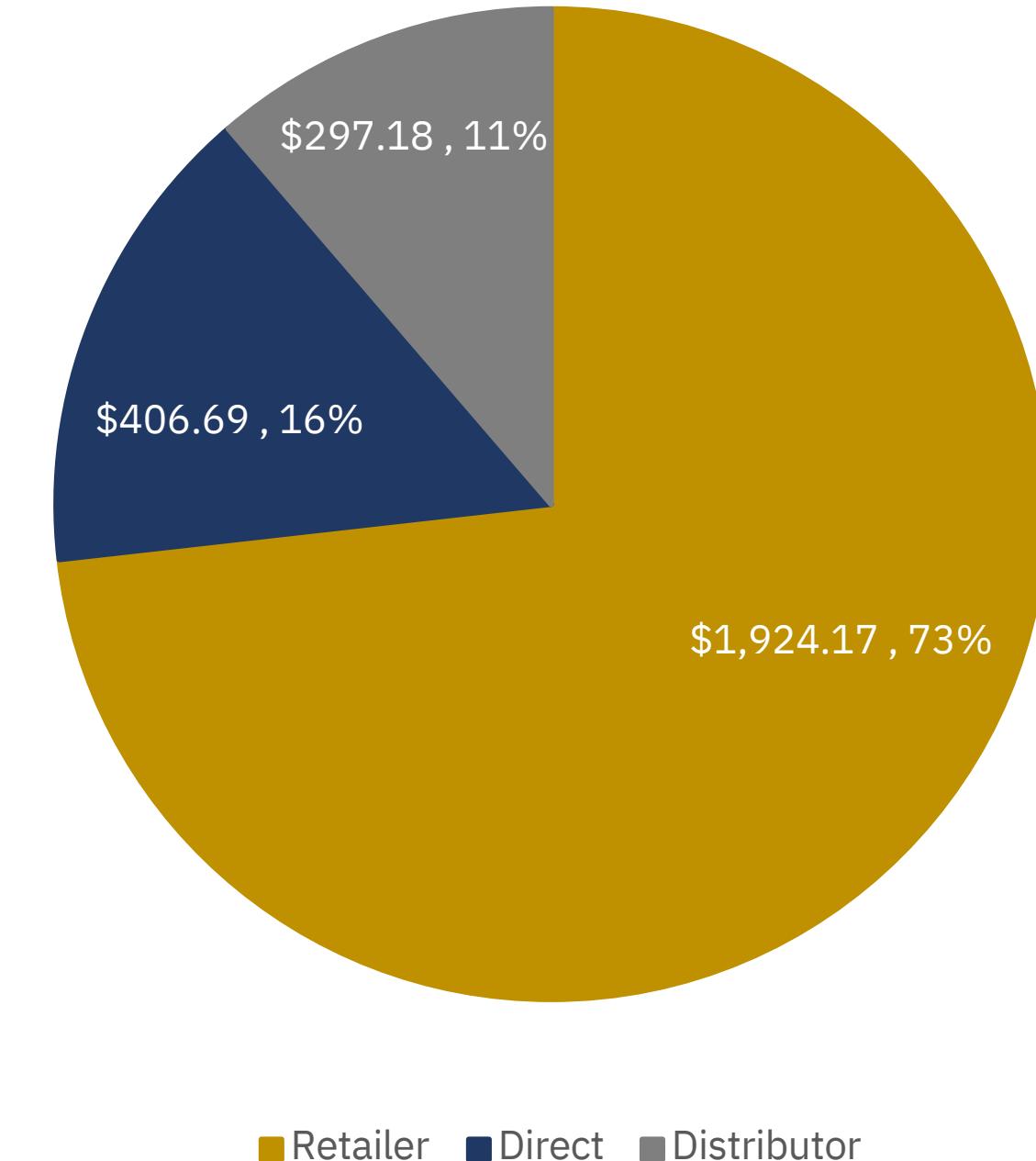
# VISUALIZATION FOR REQUEST 9

Gross Sales in Millions by Channels (2021)

## Insights

1 Atliq Hardwares is selling its products through Retailer, Direct & Distributor channels in which the Retailers have contributed to bringing the highest gross sales with \$1,924.17 million which is 73% of the total gross sales for the fiscal year 2021

2 The Direct channel contributed to achieving the gross sales amount of \$406.68 million followed by the Distributor channel registering gross sales of \$297.18 million for the fiscal year 2021.



# 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

```

WITH sold_quant_by_product_division AS (
  SELECT
    p.division,
    p.product_code,
    concat(p.product, " (", p.variant, ")") AS product,
    SUM(s.sold_quantity) total_sold_quantity
  FROM
    fact_sales_monthly s
    JOIN dim_product p ON s.product_code = p.product_code
  WHERE
    fiscal_year = 2021
  GROUP BY
    p.division,
    p.product_code,
    concat(p.product, " (", p.variant, ")")
),
prod_rank_by_sold_quant AS (
  SELECT
    *,
    DENSE_RANK() OVER (
      PARTITION BY division
      ORDER BY
        total_sold_quantity DESC
    ) AS rank_order
  FROM
    sold_quant_by_product_division
)
SELECT
  *
FROM
  prod_rank_by_sold_quant
WHERE
  rank_order <= 3;

--OUTPUT--

+-----+-----+-----+-----+-----+
| division | product_code | product | total_sold_quantity | 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 |
+-----+-----+-----+-----+-----+

```

**THANK YOU**

