

AD-HOC BUSINESS ANALYSIS FOR ATLIQ HARDWARES



**SQL Project Submission
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COMPANY OVERVIEW



Global Presence:

A leading computer hardware manufacturer in India and 26 other countries worldwide.

Core Business Divisions:

Specializes in three major divisions:

- Peripherals & Accessories
- Networking & Storage
- PCs

Strong Client Network

Trusted by 74 customers, including Amazon, Neptune, Digimarket, and Vijay Sales



PROBLEM STATEMENT



LACK OF DATA DRIVEN INSIGHTS

Management struggles to obtain quick and smart data informed decisions.

EXPANSION OF ANALYTICS TEAM

Plans to hire multiple junior data analysts to strengthen data capabilities.

FOCUS ON TECHINACAL AND SOFT SKILLS

The Data analytics director seeks candidates with strong SQL expertise and problem solving abilities

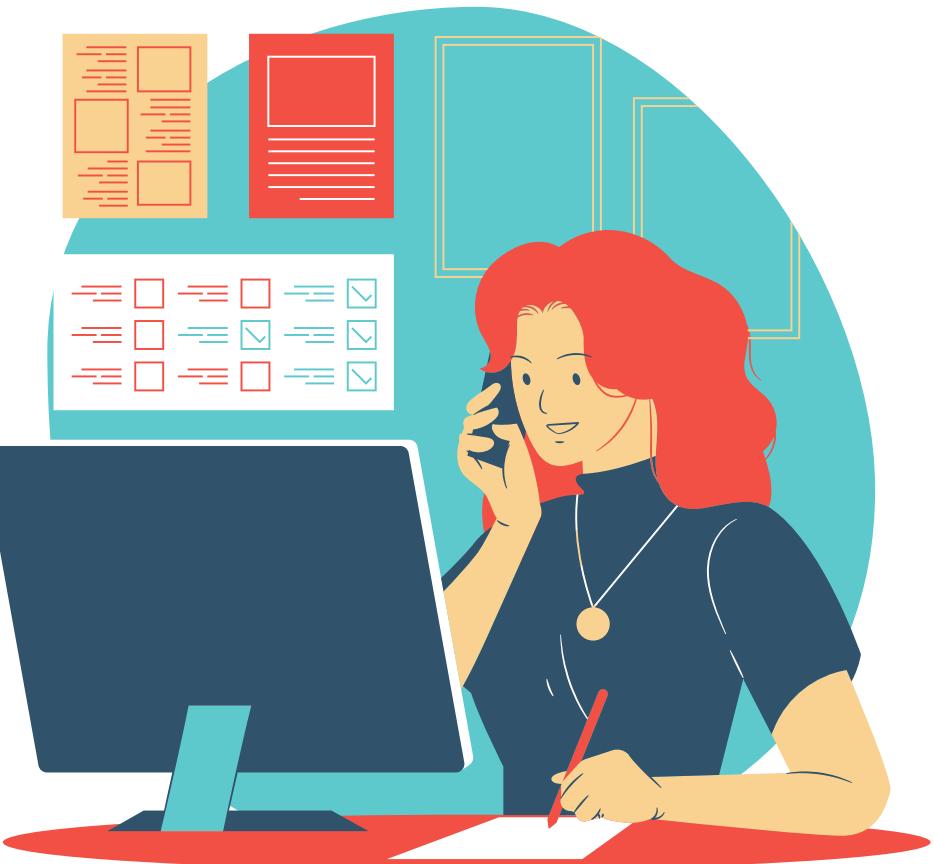


REQUEST 1

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 ;
```

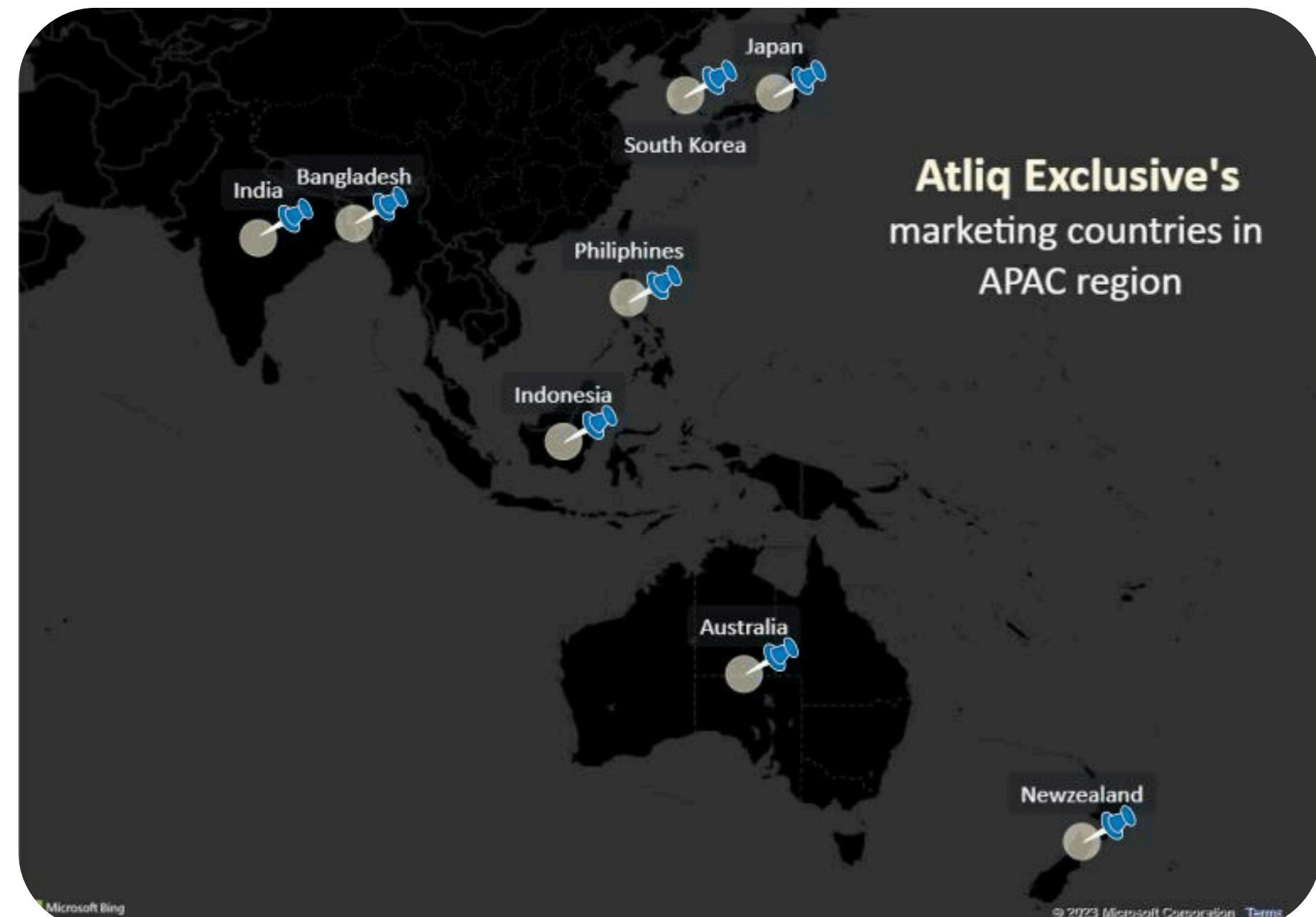
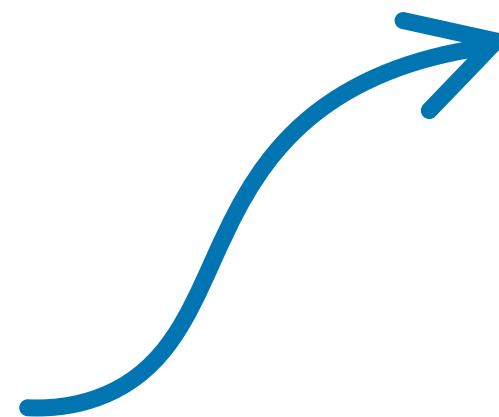


INSIGHTS

Atliq Exclusive is active in eight APAC countries and is well-known in the region's market.



market
Australia
Bangladesh
India
Indonesia
Japan
Newzealand
Philippines
South Korea



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



QUERY

```
WITH products_2020 AS (
    SELECT COUNT(DISTINCT product_code) AS A
    FROM fact_sales_monthly
    WHERE fiscal_year = 2020),
products_2021 AS (
    SELECT COUNT(DISTINCT product_code) AS B
    FROM fact_sales_monthly
    WHERE fiscal_year = 2021)
SELECT
    p2020.A AS unique_product_2020,
    p2021.B AS unique_products_2021,
    ROUND((p2021.B - p2020.A) * 100.0 / p2020.A, 2) AS percentage_chg
FROM products_2020 p2020
JOIN products_2021 p2021 ON 1=1;
```

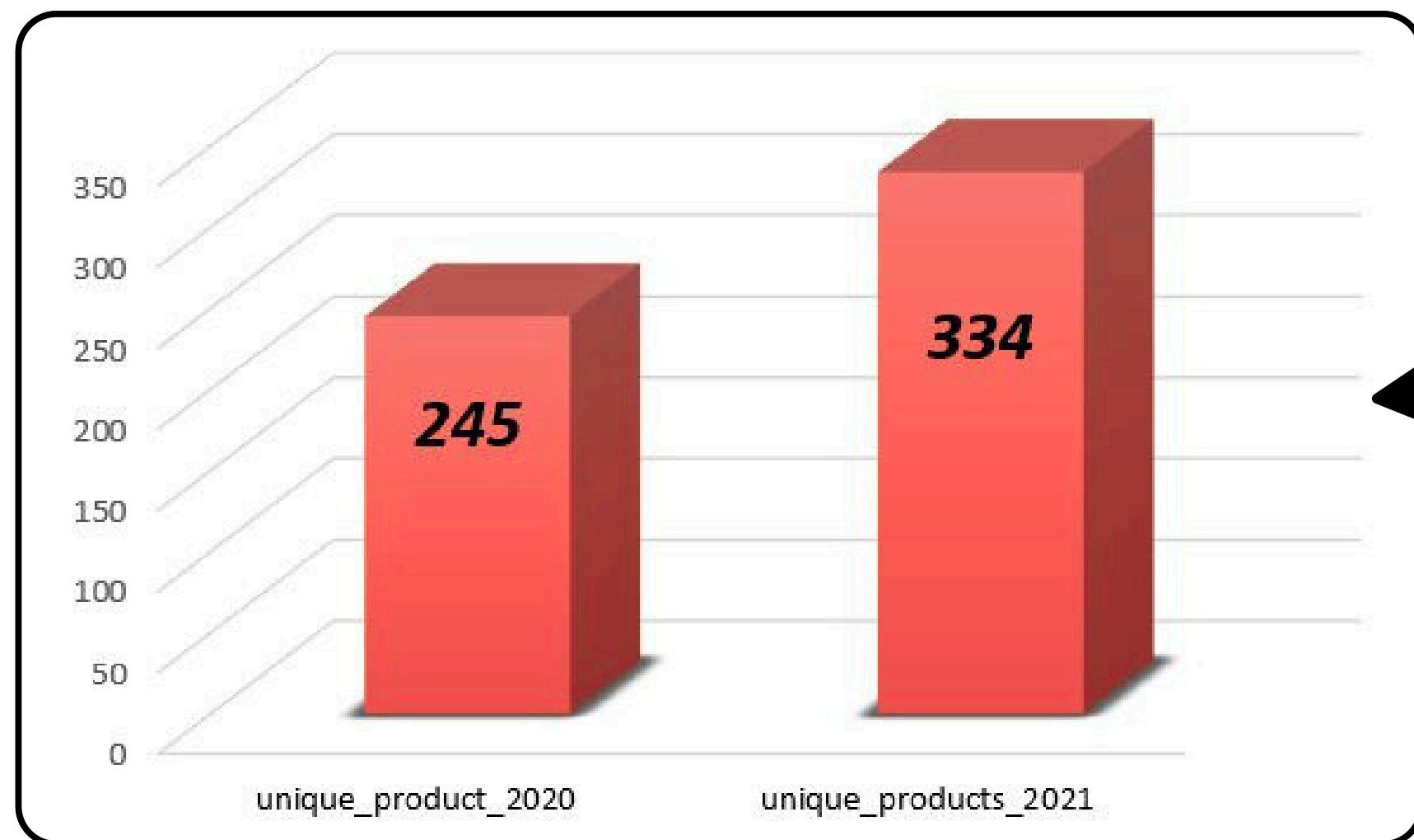


INSIGHTS

Atliq Hardware's unique product count grew by 36.33%, rising from 245 in 2020 to 334 in 2021.



unique_product_2020	unique_products_2021	percentage_chg
245	334	36.33



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

**QUERY**

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

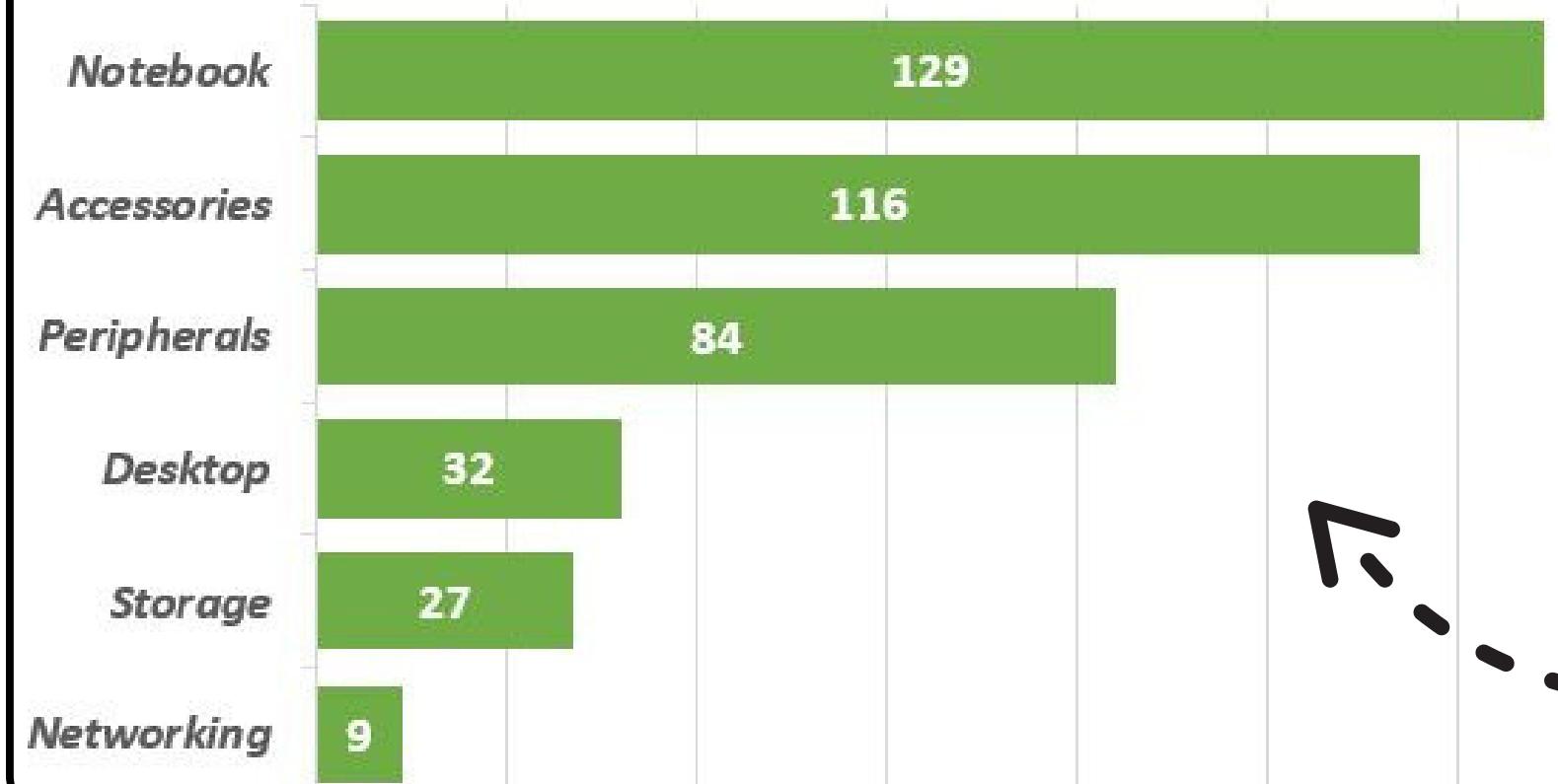


INSIGHTS

Atliq Hardware offers many products. Most of the products (82.87%) are in notebooks, accessories, and peripherals. A smaller portion (17.13%) includes desktops, storage, and networking, which are not performing as well. The team should improve products based on market trends.



Product_count



A table titled "segment" showing the product count for each segment. The segments are Notebook, Accessories, Peripherals, Desktop, Storage, and Networking. The values are 129, 116, 84, 32, 27, and 9 respectively. The table has a light gray background with alternating row colors.

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



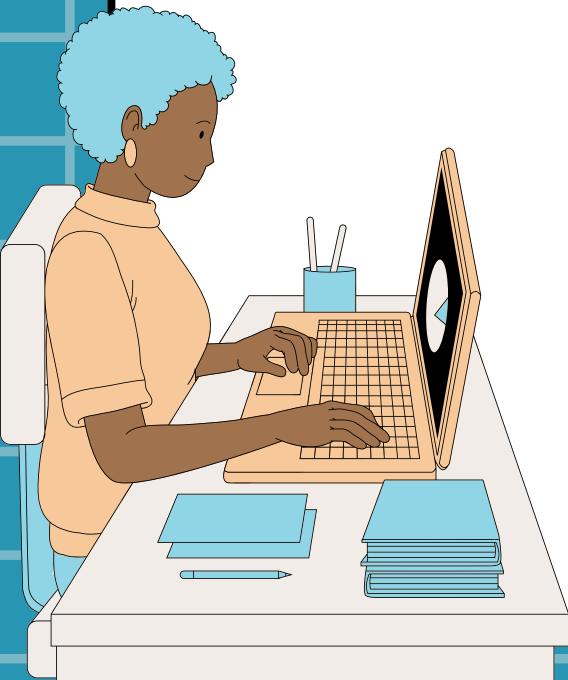
REQUEST 4

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



QUERY

```
WITH CTE1 AS
  (SELECT P.segment AS A , COUNT(DISTINCT(FS.product_code)) AS B
   FROM dim_product P, fact_sales_monthly FS
   WHERE P.product_code = FS.product_code
   GROUP BY FS.fiscal_year, P.segment
   HAVING FS.fiscal_year = "2020"),
CTE2 AS (
  SELECT P.segment AS C , COUNT(DISTINCT(FS.product_code)) AS D
   FROM dim_product P, fact_sales_monthly FS
   WHERE P.product_code = FS.product_code
   GROUP BY FS.fiscal_year, P.segment
   HAVING FS.fiscal_year = "2021" )
SELECT CTE1.A AS segment, CTE1.B AS product_count_2020, CTE2.D AS product_count_2021,
(CTE2.D-CTE1.B) AS difference
FROM CTE1, CTE2
WHERE CTE1.A = CTE2.C ;
```

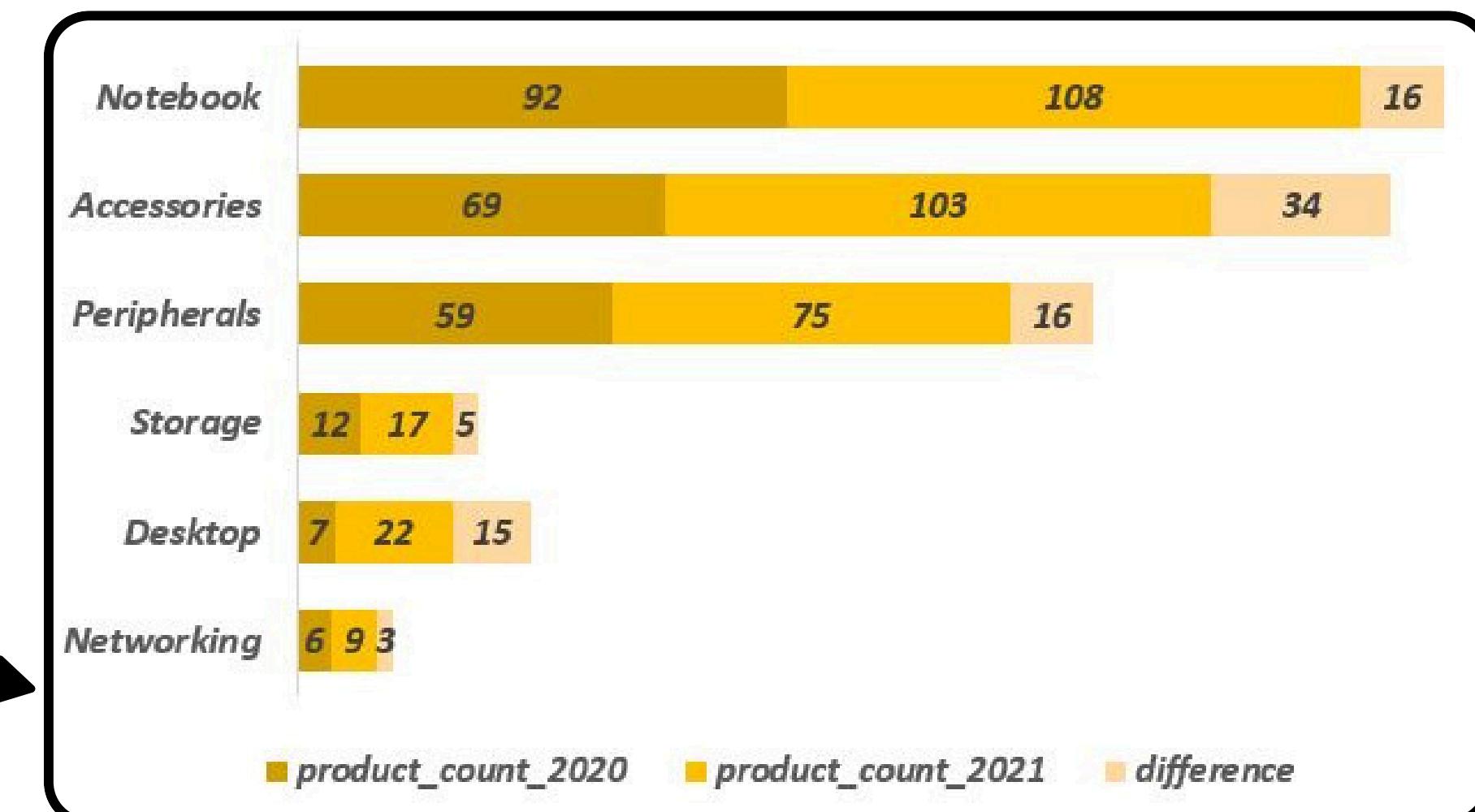


INSIGHTS

- Accessories had the highest growth, adding 34 new products between 2020 and 2021.
- Desktop products increased from 7 to 22, showing strong efforts by the development team.
- Networking still lags behind and needs more focus for improvement.



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



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

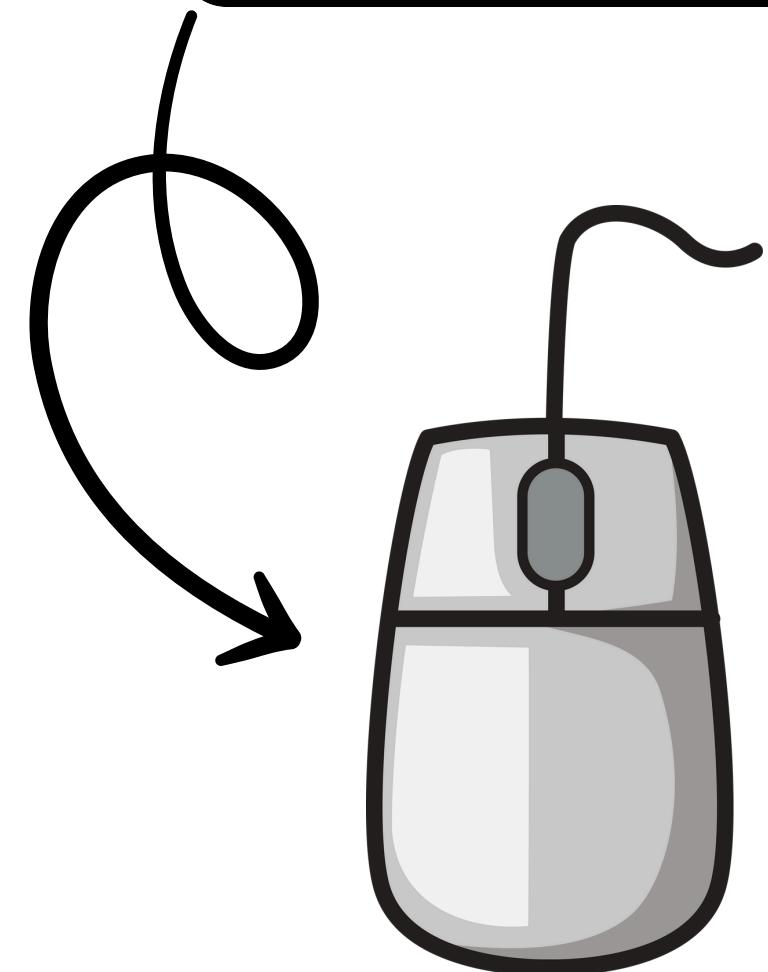
**QUERY**

```
select product_code,product, manufacturing_cost  
from dim_product p  
join  
fact_manufacturing_cost m  
using(product_code)  
where  
manufacturing_cost =(select MAX(manufacturing_cost) from  
fact_manufacturing_cost)  
or  
manufacturing_cost=(select MIN(manufacturing_cost) from  
fact_manufacturing_cost );
```



INSIGHTS

product_code	product	manufacturing_cost
A6121110208	AQ HOME Allin1 Gen 2	263.4207
A2118150101	AQ Master wired x1 Ms	0.8654



AQ MASTER WIRED X1 MS



AQ HOME ALLIN1 GEN 2

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



QUERY

```
select customer_code, customer,  
round(avg(pre_invoice_discount_pct *100),2) as avg_discount  
from dim_customer c  
join  
fact_pre_invoice_deductions d  
using(customer_code)  
where market ="INdia" and fiscal_year=2021  
group by customer_code, customer  
order by avg_discount desc  
limit 5 ;
```

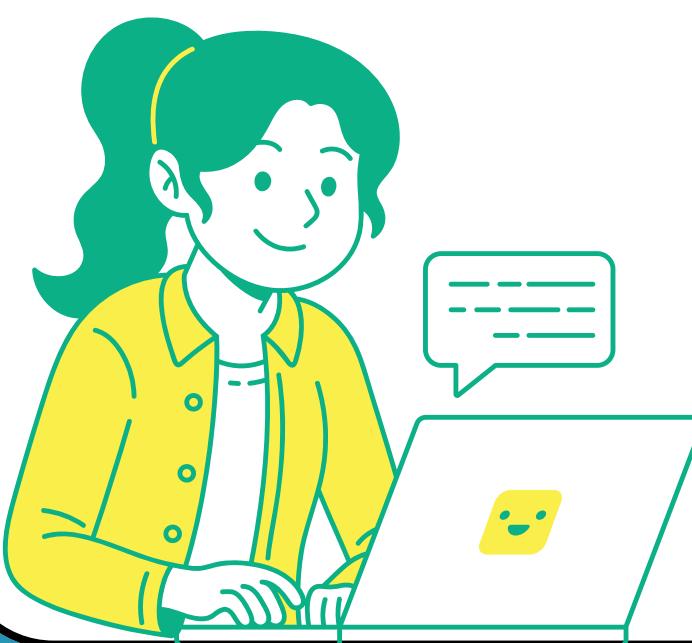


INSIGHTS



- Flipkart received the highest pre-invoice discount at 30.83%.
- The top 5 customers had an average discount of around 30.21%

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



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



QUERY

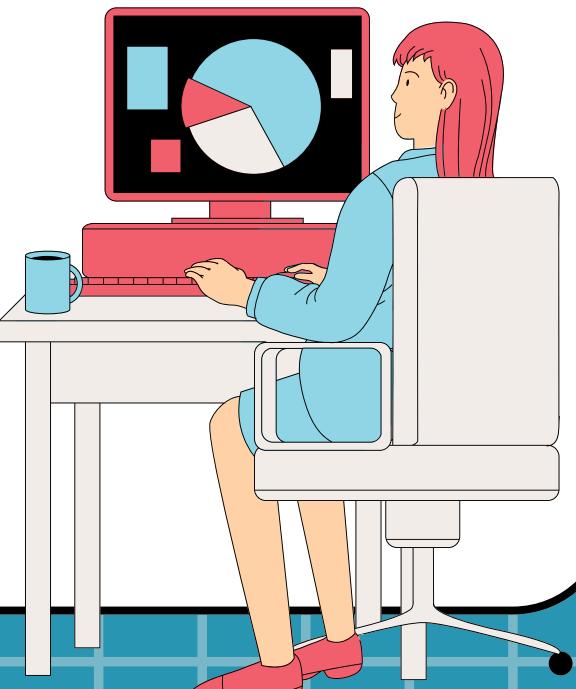
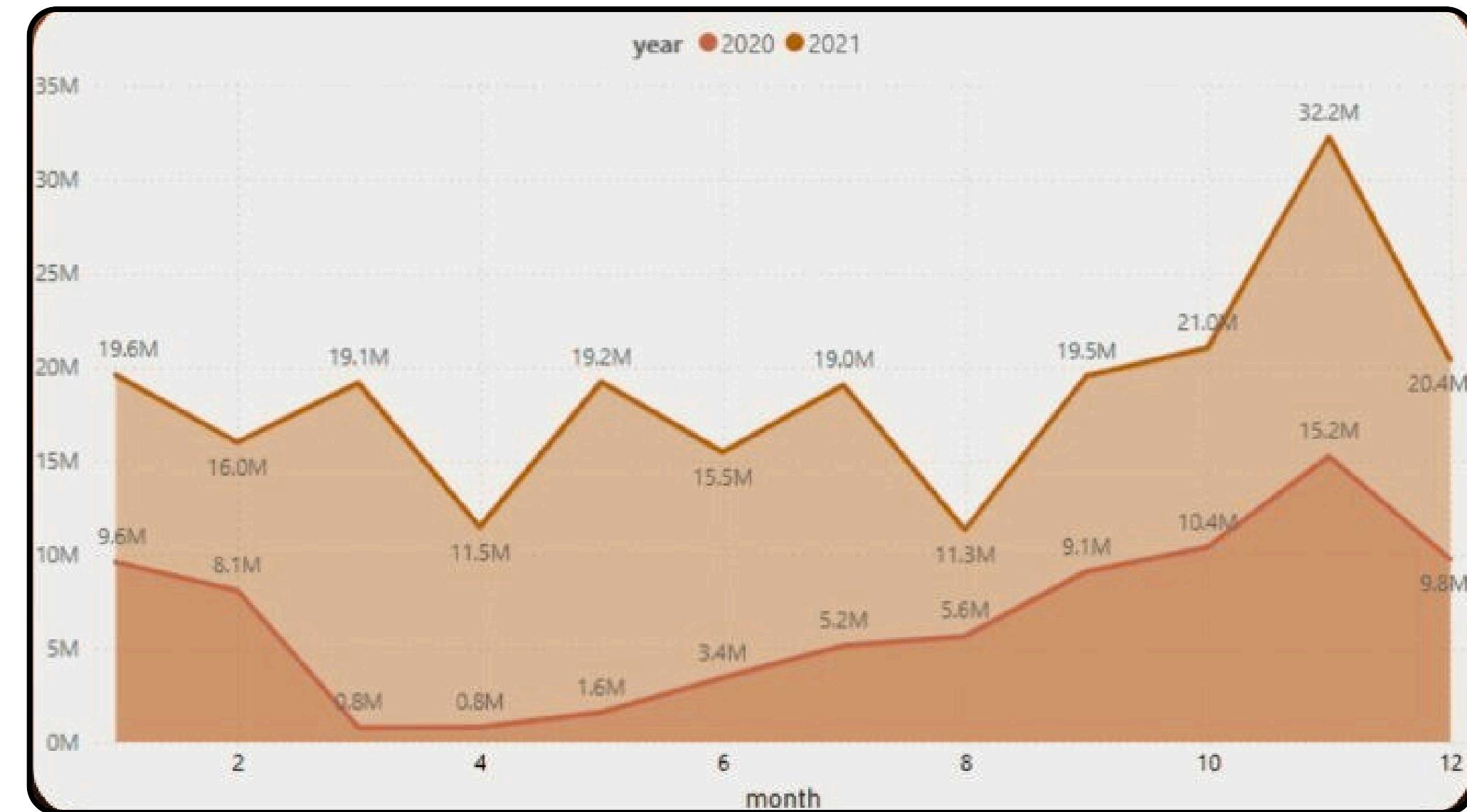
```
select
month(s.date) as month,
s.fiscal_year as year,
sum(g.gross_price * s.sold_quantity) as Gross_sales_monthly
from
fact_sales_monthly s
join dim_customer c
on c.customer_code=s.customer_code
join
fact_gross_price g
on g.product_code = s.product_code
where customer= "AtliQ Exclusive"
group by month,year
order by year ;
```



INSIGHTS



- Sales dropped in March 2020 due to the COVID-19 pandemic but began to recover after June.
- The highest sales in 2020 were recorded in November.
- Sales in 2021 showed remarkable growth compared to 2020.



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 .

**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'
    WHEN MONTH(date) IN (6, 7, 8) THEN 'Q4'
END AS Quarter, sum(sold_quantity) as total_sum_qty
from fact_sales_monthly
where fiscal_year=2020
group by Quarter
order by total_sum_qty desc;
```



INSIGHTS

- Most products were sold in Quarter 1 (September to November 2020).
- Sales dropped a lot in Quarter 3 (March to May) because of the pandemic.
- Sales went up again in Quarter 4 (June to August).



Quarter	total_sum_qty
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087



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

**QUERY**

```
select c.channel, round(sum((gross_price*sold_quantity)/ 1000000),2) as  
gross_sales_mlm,  
(SUM(gross_price * sold_quantity) / SUM(SUM(gross_price * sold_quantity))  
OVER()) * 100 as percentage  
from dim_customer c  
join fact_sales_monthly s  
using(customer_code)  
join fact_gross_price g  
on g.product_code =s.product_code  
where s.fiscal_year ="2021"  
group by c.channel;
```

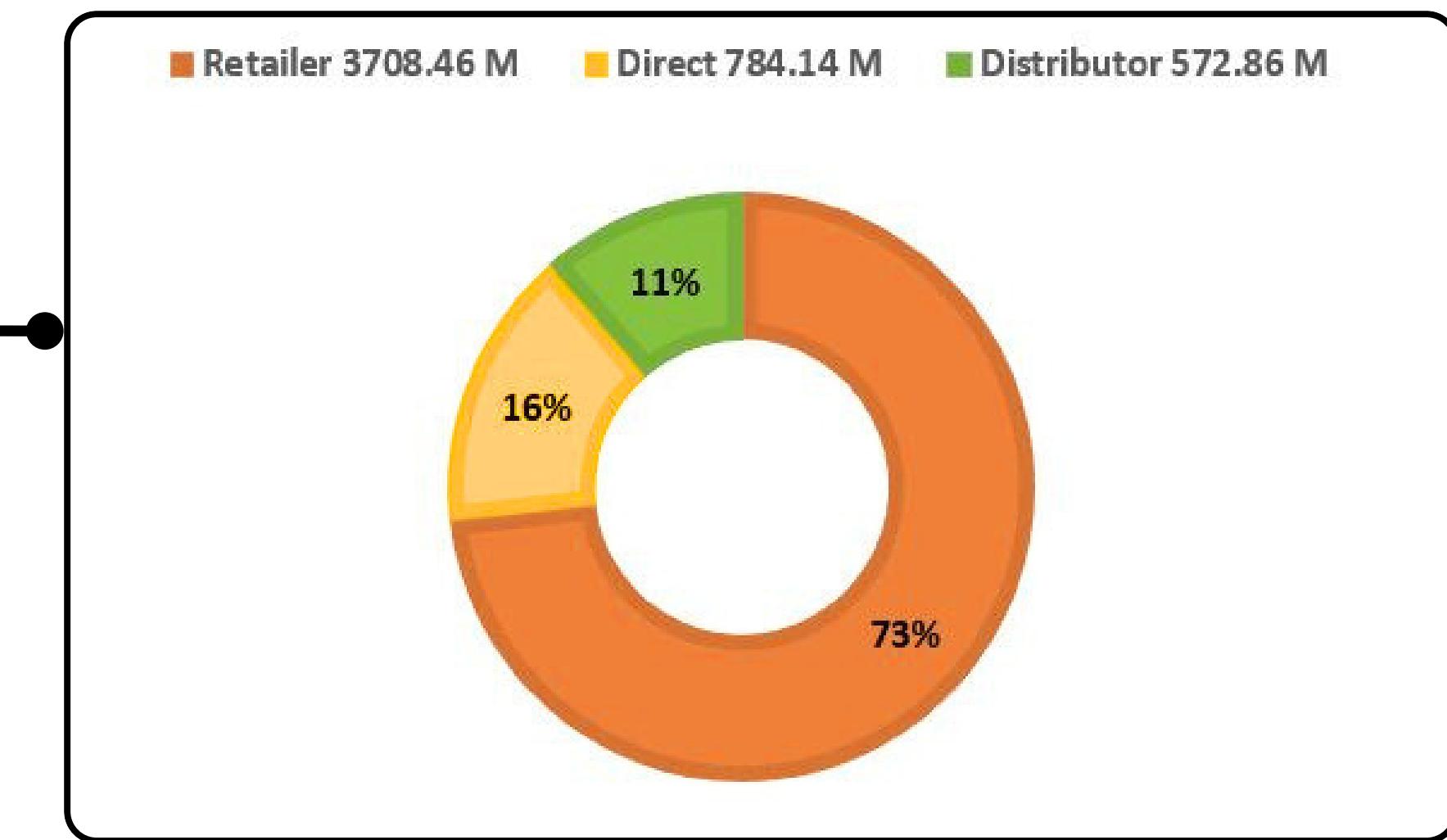


INSIGHTS



- Retailers brought in the most sales, totaling 3708.46M with a 73.21% share.
- Direct and distributor channels together contributed 26.79%.

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

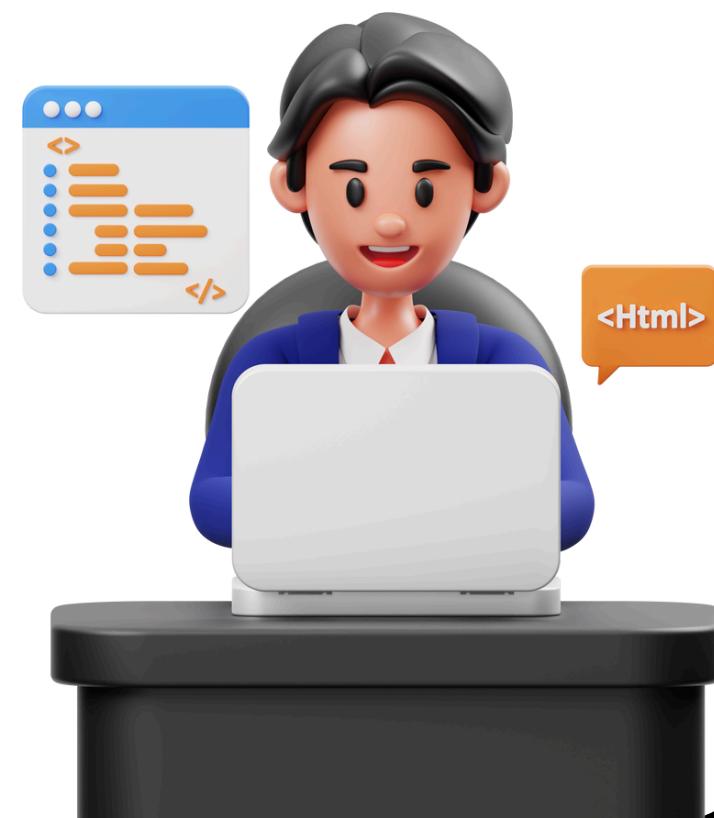


REQUEST 10

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.

**QUERY**

```
with ct1 as (select division,s.product_code, p.product,
sum(sold_quantity) as total_sold_quantity,
dense_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,p.product_code)
select * from ct1
where rank_order<=3;
```



INSIGHTS



- In the N&S division, pen drives hold the top three positions.
- In the P&A division, the top three products are all mice.
- The company needs to make smart decisions to boost sales in the PC division.

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



RECOMMENDED



Improve Product Development

- Keep updating and improving products to meet changing customer needs.

Focus on Key Product Areas

- Focus on the Desktop, Storage, and Networking areas to match market demands.

Boost Marketing Efforts

- Use different marketing methods to reach more people and get their attention.

Train and Upskill the Sales Team

- Help the sales team improve their skills so they can perform better and meet business goals.