



Consumer Goods Ad_Hoc Insights

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Provide Insights to Management in Consumer Goods Domain

Domain: Consumer Goods | **Function:** Executive Management

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

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

Task:

Imagine yourself as the applicant for this role and perform the following task

1. Check 'ad-hoc-requests.pdf' - there are 10 ad hoc requests for which the business needs insights.
2. You need to run a SQL query to answer these requests.
3. The target audience of this dashboard is top-level management - hence you need to create a presentation to show the insights.
4. Be creative with your presentation, audio/video presentation will have more weightage

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Ad_Hoc Requests

Request Number 1

Request Number 2

Request Number 3

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Request Number 6

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Request Number 10

List of Market /Countries in which customer "Atliq Exclusive " operates it's business in the APAC region

Market

Australia

Bangladesh

India

Indonesia

Japan

market

Newzealand

Philiphines

South Korea

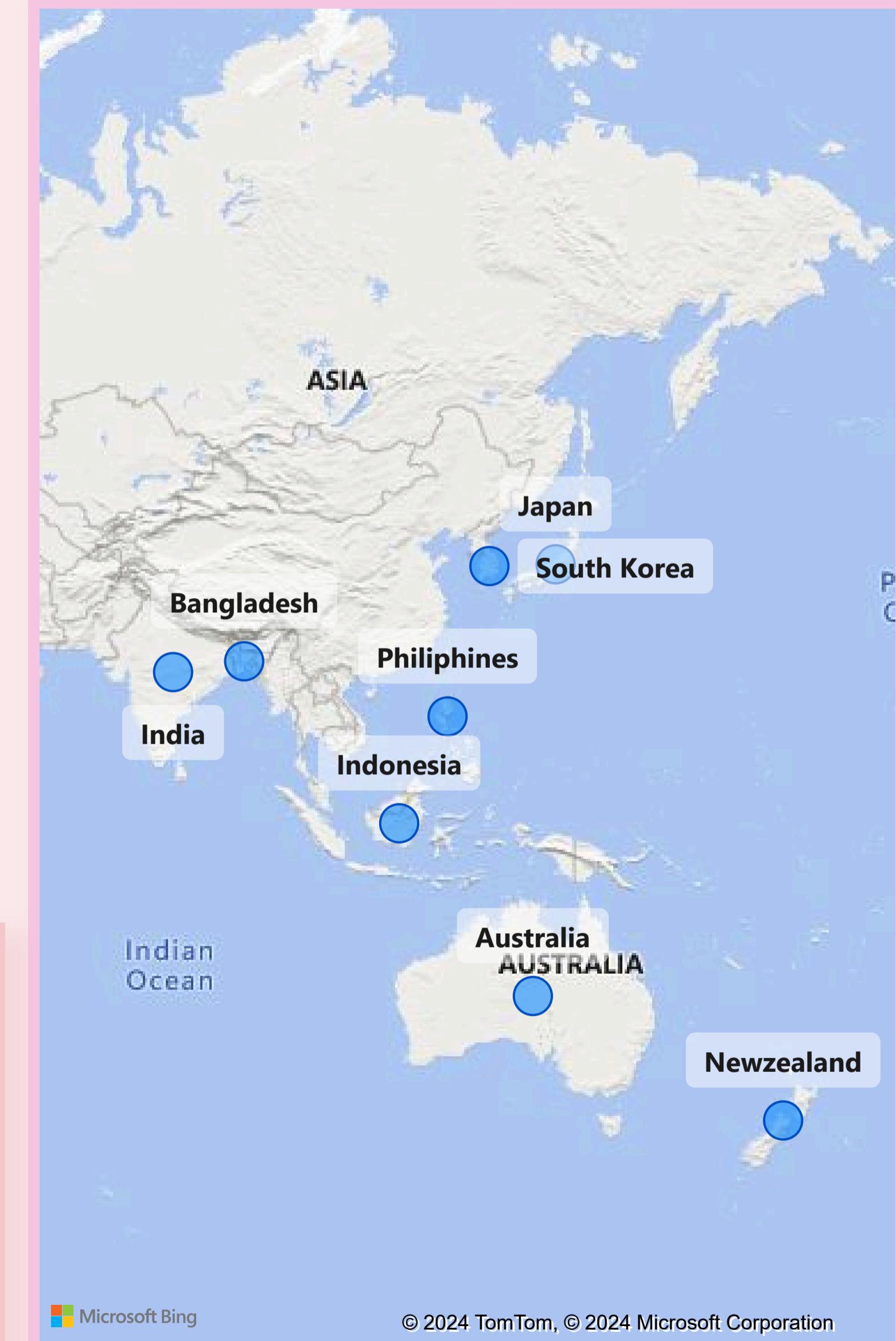
Insight

SQL Query

1. Atliq Exclusive operates it's business in 8 major market in APAC region.

2. During Fiscal Year 2020-2021,Atliq Exclusive sold a total of 3.85M Products in the APAC region. The highest sells were recorded in India where 1.93M of products were sold while the lowest sells were in Japan.

Total Sold Quantity by Market/Countries



Request Number 1

List of Market /Countries in which customer "Atliq Exclusive " operates it's business in the APAC region

SQL Query

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

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What is the percentage of Unique Products increase in 2021 vs 2020

Request Number 1

Unique_product_2021	Unique_product_2020	Percentage_chg
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334	245	36.33%
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Request Number 2

Request Number 3

Request Number 4

Request Number 5

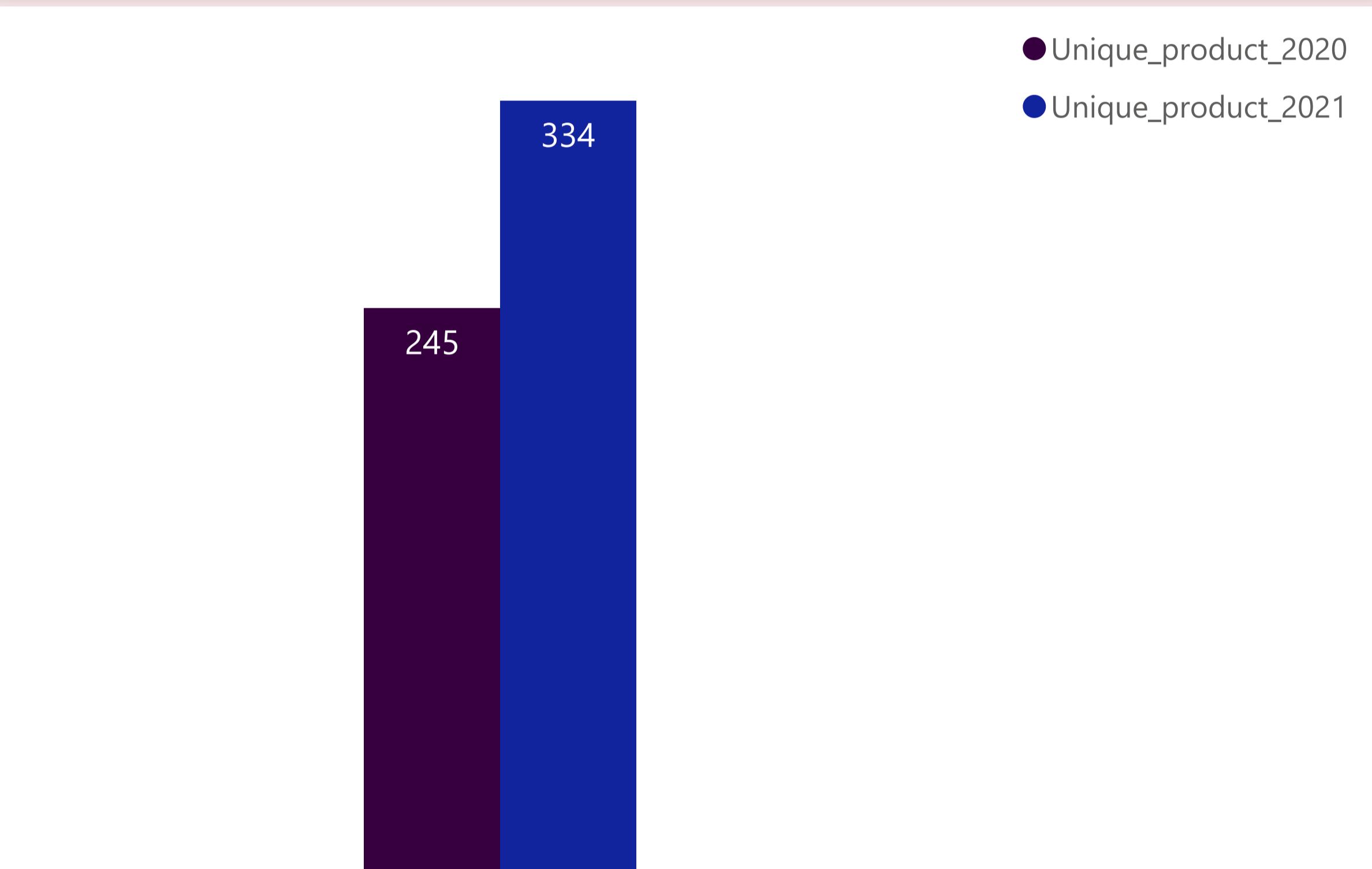
Request Number 6

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SQL Query

Atliq Hardaware manufactured 245 unique products in fiscal year 2020 and 334 products in fiscal year 2021, shows an increase of 36.33%.

This growth in the number of unique products shows positive indicator of Atliq hardware's performance .The company is producing more new product to meet customer's demand.

Request Number 2

List of Market /Countries in which customer "Atliq Exclusive " operates it's business in the APAC region

SQL Query

```
WITH unique_product as
(SELECT
COUNT (DISTINCT CASE WHEN fiscal_year='2020' THEN product_code END) as
unique_product_2020,
COUNT (DISTINCT CASE WHEN fiscal_year ='2021' THEN product_code END) as
unique_product_2021
FROM fact_sales_monthly s)
SELECT unique_product_2020, unique_product_2021, CONCAT
(ROUND ((unique_product_2021 -unique_product_2020) * 1.0 / unique_product_2020 *
100, 2), '%') AS percentage_chg
FROM unique_product;
```

Market



South Korea

Philiphines

Newzealand

market

Japan

Indonesia

India

Bangladesh

Australia

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Ad_Hoc Requests

Request Number 1

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Request Number 10

Provide a report with all the unique product count for each segment and sort them in descending order of product count

Insight

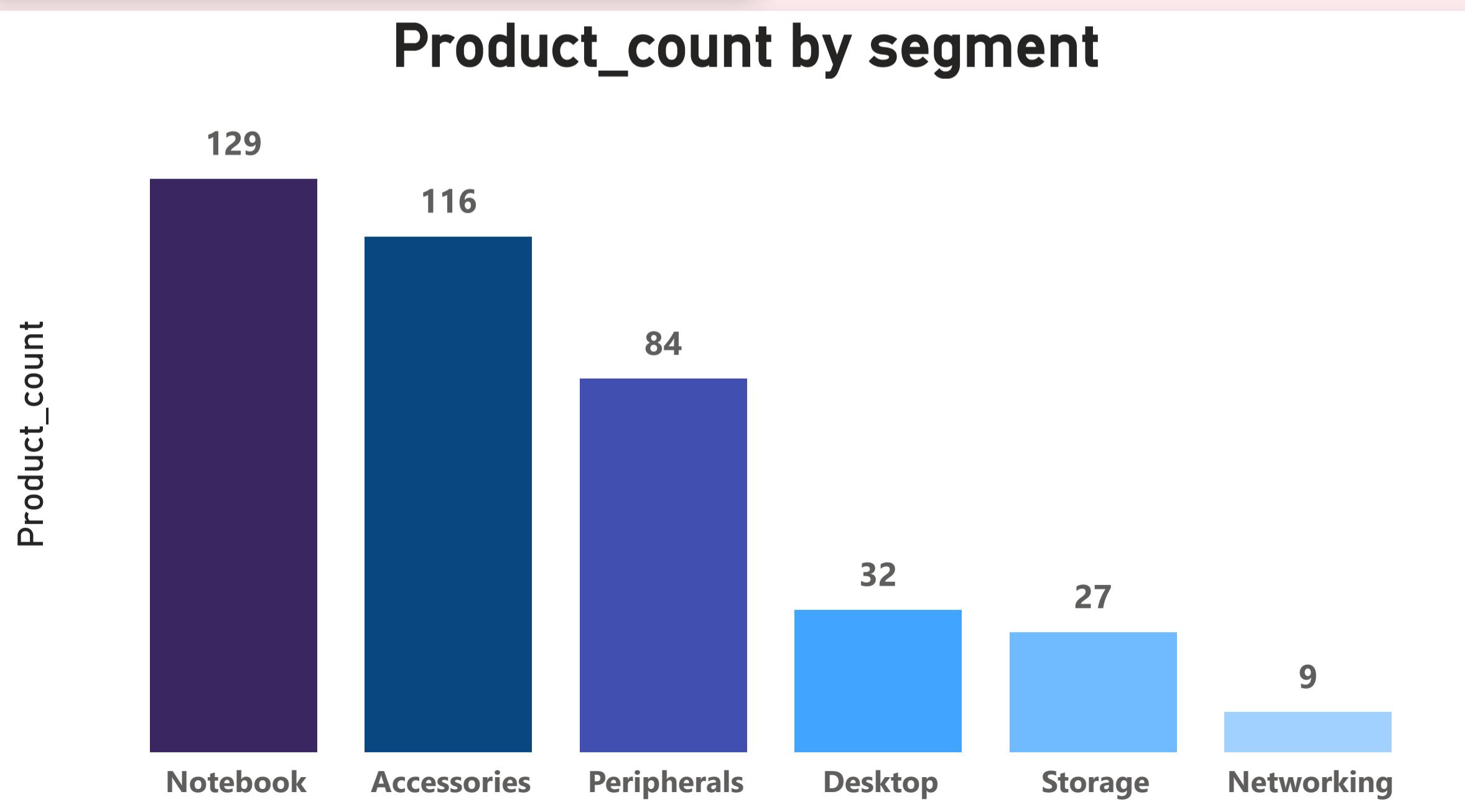
segment	Product_count
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9
Total	397

SQL Query

We offer a diverse range of products in the Notebook, Accessories, and Peripheral segments, averaging around 110 items, whereas segments such as Desktop, Storage, and Network are behind, with an average of 23 products per segment.

The Desktop, Storage, and Network segments could offer growth opportunities. The product development team should evaluate products that need redesigning to meet contemporary standards.

Product_count by segment



Request Number 3

Provide a report with all the unique product count for each segment and sort them in descending order of product count

SQL Query

```
SELECT  
segment,  
COUNT (distinct(product_code)) as Product_count  
FROM dim_product  
GROUP BY segment  
ORDER BY Product_count DESC;
```

segment	Product_count
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9
Total	397

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Which segment has the most increase in unique products in 2021 vs 2020

Request Number 1

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Request Number 7

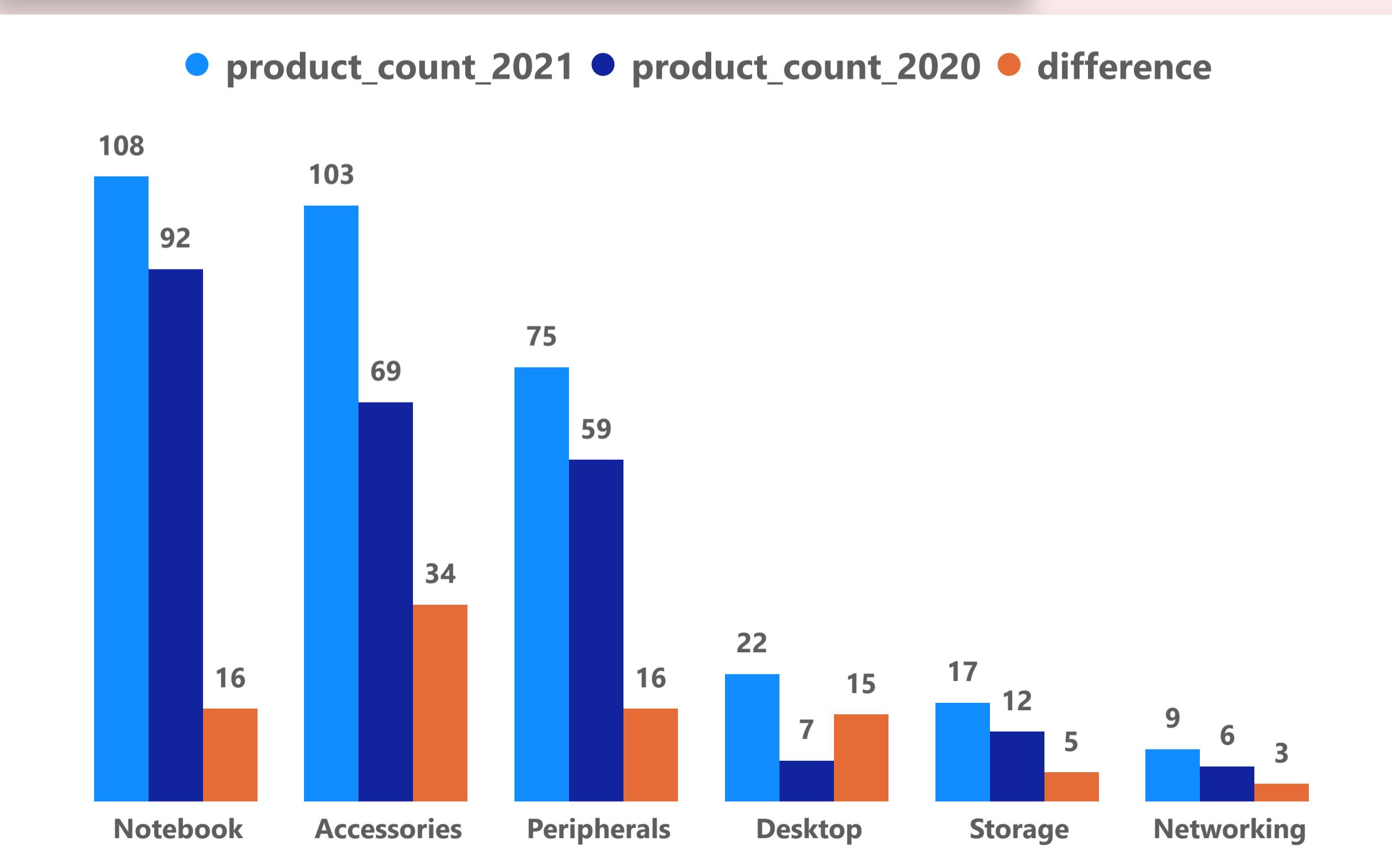
Request Number 8

Request Number 9

Request Number 10

segment	product_count_2021	product_count_2020	difference
Accessories	103	69	34
Desktop	22	7	15
Networking	9	6	3
Notebook	108	92	16
Peripherals	75	59	16
Storage	17	12	5
Total	334	245	89

SQL Query



Atliq Hardware had added a total of 34 new and unique products to the accessories segment in 2021, which is highest among all the segments. This indicate a strong demand for product in accessories segment.

Networking segment has the lowest number of increments with only 3 unique products added.

Request Number 4

Which segment has the most increase in unique products in 2021 vs 2020

SQL Query

```
WITH unique_product AS  
  
(SELECT  
    p.segment AS 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_codeEND)) AS product_count_2021  
  
    FROM  
    fact_sales_monthly s  
    JOIN  
    dim_product p  
    ON  
    p.product_code = s.product_code  
    GROUP BY segment)  
SELECT segment, product_count_2020,  
product_count_2021,  
(product_count_2021-product_count_2020) As difference  
FROM  
unique_product  
ORDER BY difference DESC
```

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Get the Product that have Highest and Lowest manufacturing Cost

Request Number 1

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Request Number 7

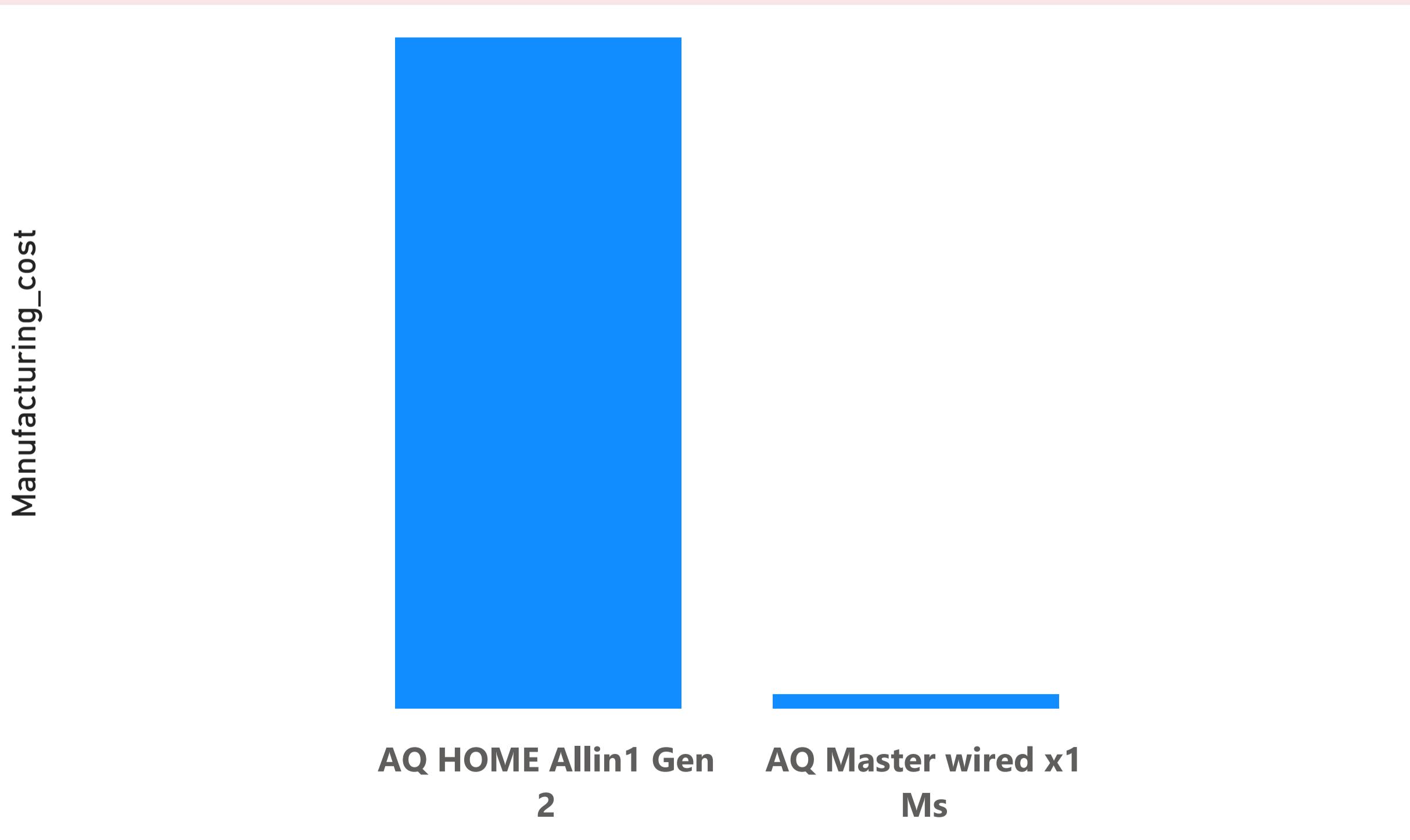
Request Number 8

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Request Number 10

product	product_code	Manufacturing_cost
AQ HOME Allin1 Gen 2	A6121110208	263.42
AQ Master wired x1 Ms	A2118150101	0.87
Total		264.29

SQL Query



All the products produced by Atliq hardware till fiscal year 2021 the "AQ HOME Allin Gen2 " has highest manufacturing cost at \$263.42, while the "AQ Master wired x1 Ms" has the lowest manufacturing cost \$0.87

Request Number 5

Get the Product that have Highest and Lowest manufacturing Cost

SQL Query

```
SELECT
    p.product,
    p.product_code,
    m.manufacturing_cost as manufacturing_cost
FROM
    dim_product p
JOIN
    fact_manufacturing_cost m
ON
    m.product_code = p.product_code

WHERE
    m.manufacturing_cost =
        (SELECT MAX(manufacturing_cost)
        FROM fact_manufacturing_cost)
    OR
    m.manufacturing_cost = (SELECT MIN(manufacturing_cost)
        FROM fact_manufacturing_cost)

ORDER BY m.manufacturing_cost DESC;
```

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Generate a report which contain the top5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021and in the Indian Market

Request Number 1

Request Number 2

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Request Number 10

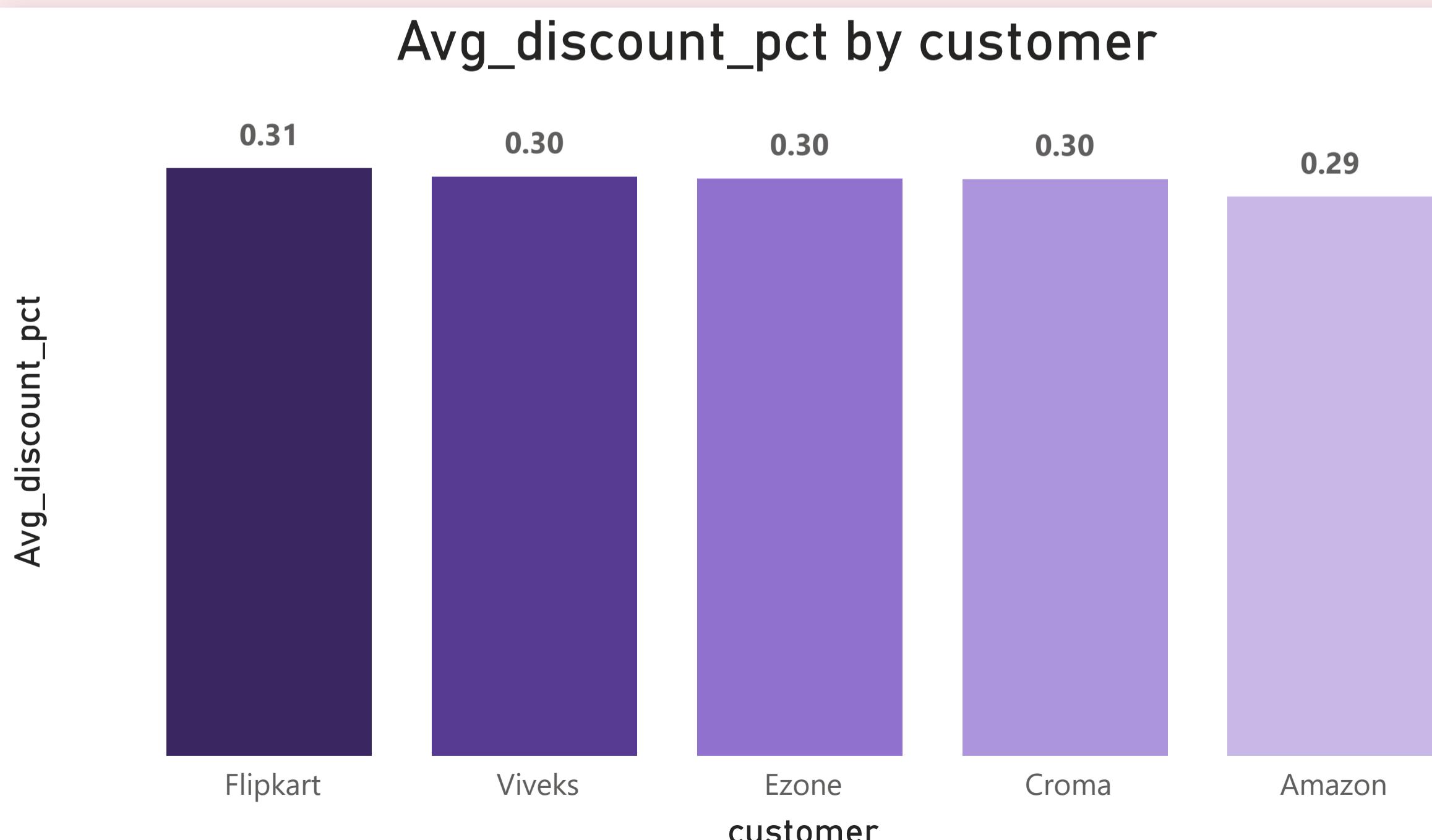
customer	Sum of avg_discount_pct
Amazon	0.29
Croma	0.30
Ezone	0.30
Flipkart	0.31
Viveks	0.30
Total	1.51

SQL Query

Atliq Hardware had added a total of 34 new and unique products to the accessories segment in 2021, which is highest among all the segments. This indicate a strong demand for product in accessories segment.

Networking segment has the lowest number of increments with only 3 unique products added.

Avg_discount_pct by customer



Request Number 6

Generate a report which contain the top5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021and in the Indian Market

SQL Query

```
SELECT
c.customer_code,
c.customer,
CONCAT(ROUND(AVG(f.pre_invoice_discount_pct)*100,2),'%') AS avg_discount_pct

FROM fact_pre_invoice_deductions f

JOIN dim_customer c
ON
c.customer_code = f.customer_code

WHERE f.fiscal_year='2021' AND c.market ='India'

GROUP BY c.customer, c.customer_code

ORDER BY (AVG(f.pre_invoice_discount_pct)) DESC
LIMIT 5;
```

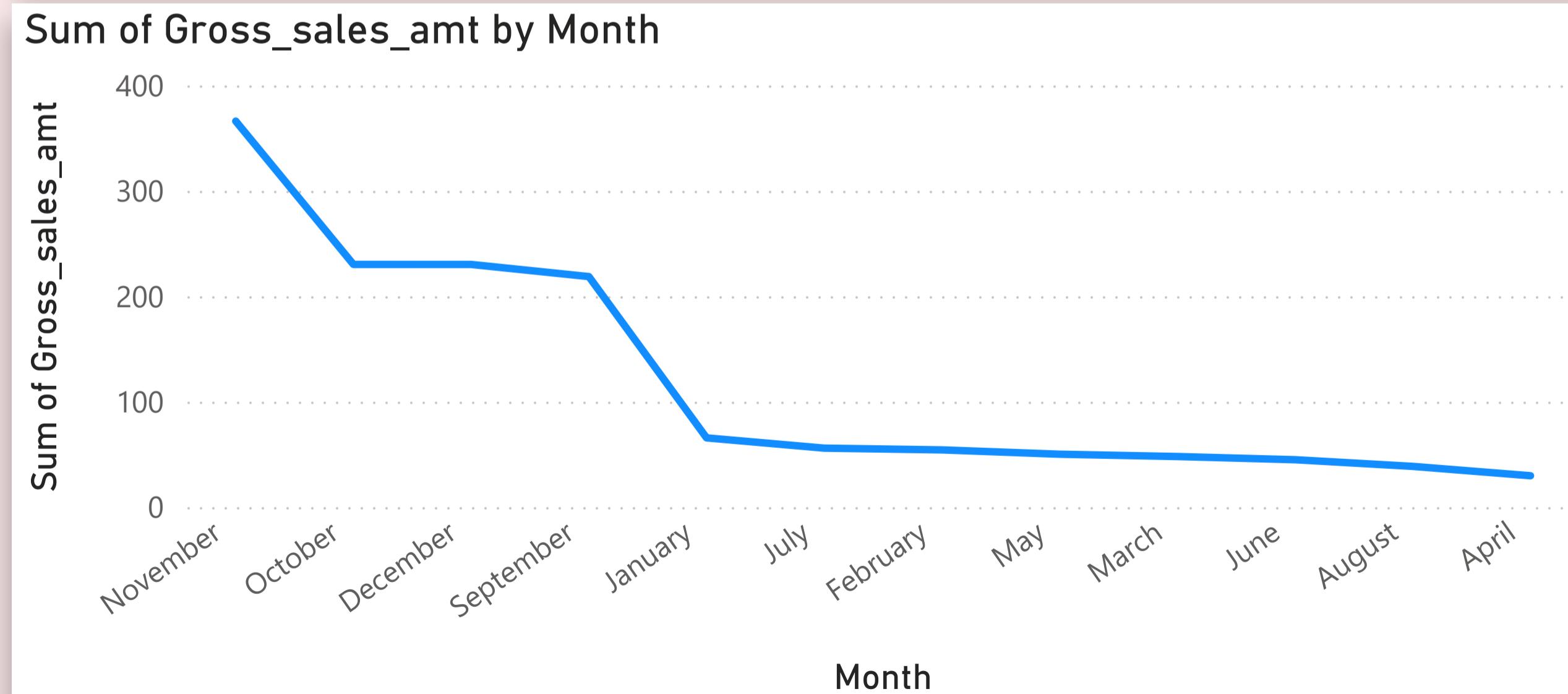
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Get the complete report for Gross Sales Amount for the customer Atliq

Exclusive for each month

Request Number 1

fiscal_year	April	August	December	February	January	July	June	March	May	November	O
2018	1.99	2.62	12.35	3.68	4.44	3.76	3.09	3.17	3.39	19.53	
2019	3.88	5.20	25.92	7.30	8.82	7.38	6.01	6.18	6.61	41.02	
2020	6.01	8.38	43.88	11.79	14.25	11.74	9.36	9.64	10.23	70.46	
2021	9.18	11.50	68.50	16.19	19.63	16.98	13.63	14.83	15.40	109.21	
2022	8.64	10.87	79.46	15.26	18.47	16.01	12.80	14.10	14.48	125.83	
Total	29.70	38.57	230.11	54.22	65.61	55.87	44.89	47.92	50.11	366.05	

Request Number 2**Request Number 4****Request Number 5****Request Number 6****Request Number 7****Request Number 8****Request Number 9****Request Number 10****SQL Query**

At the beginning of the fiscal year 2020, the total gross sales price for all products sold by Atliq Exclusive was 4.5M. In fiscal year 2020 Atliq Exclusive recorded their lowest total gross sales price for all products which was only 0.38 M. This was most probably due to global COVID-19 pandemic. However in the same fiscal year , Atliq Exclusive recorded their highest total gross sales price for all products and the amount was 20.46M. Atliq Exclusive ended fiscal year 2021 with a total gross sales price of 7.18M for all products sold.

Request Number 7

Get the complete report for Gross Sales Amount for the customer Atliq Exclusive for each month

SQL Query

```
SELECT
monthname(f.date)AS Month,
g.fiscal_year,
(ROUND(SUM(f.sold_quantity*g.gross_price)/1000000,2)) as Gross_sales_amt
FROM fact_sales_monthly f
JOIN
fact_gross_price g
ON f.product_code = g.product_code
JOIN dim_customer c
ON
c.customer_code = f.customer_code
WHERE c.customer = 'Atliq Exclusive'
group by g.fiscal_year,monthname(f.date)
ORDER BY g.fiscal_year ;
```

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In which quarter of 2020, got the maximum total_sold_quantity

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Request Number 8

Request Number 9

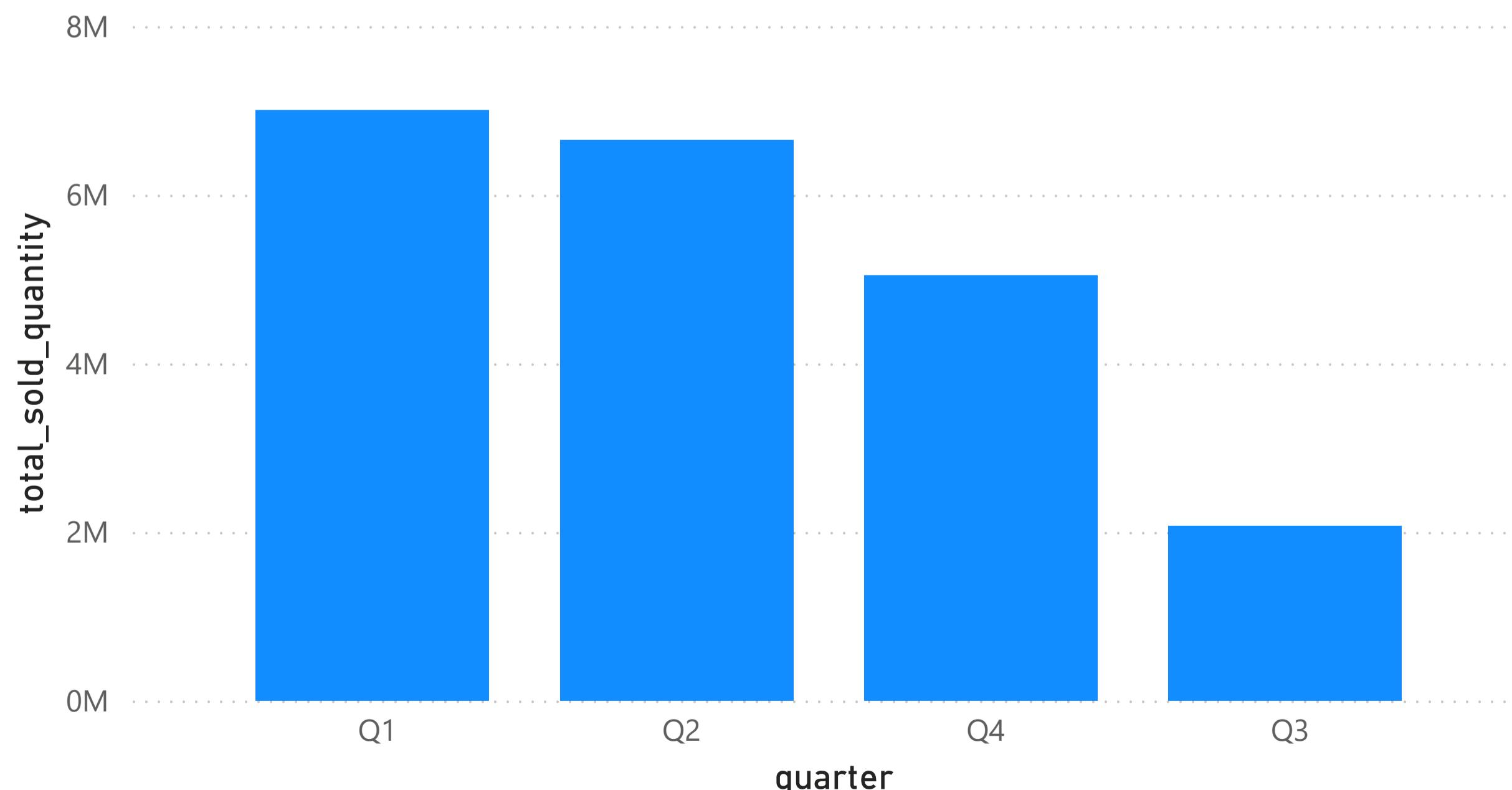
Request Number 10

quarter total_sold_quantity

Q1	7005619
Q2	6649642
Q3	2075087
Q4	5042541
Total	20772889

SQL Query

total_sold_quantity by quarter



Atliq Hardware had added a total of 34 new and unique products to the accessories segment in 2021, which is highest among all the segments. This indicate a strong demand for product in accessories segment.

Networking segment has the lowest number of increments with only 3 unique products added.

Request Number 8

In which quarter of 2020, got the maximum total_sold_quantity

SQL 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 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;
```

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

Request Number 1

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Request Number 4

Request Number 5

Request Number 6

Request Number 7

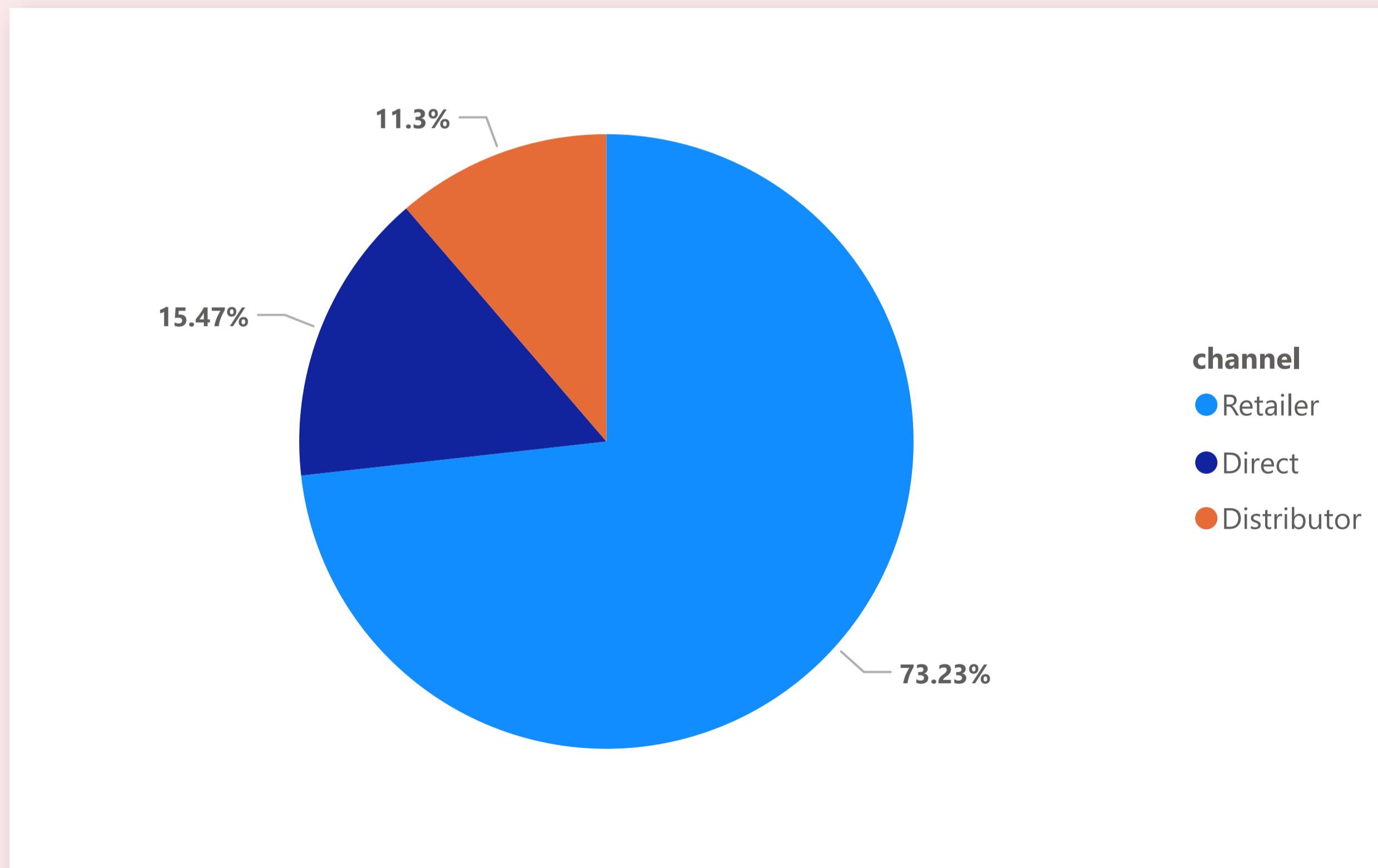
Request Number 8

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Request Number 10

channel	percentage_contri	Gross_sales_mln
Direct	15.47%	257.53
Distributor	11.30%	188.03
Retailer	73.23%	1,219.08
Total	100.00%	1,664.64

SQL Query



Atliq Hardware had added a total of 34 new and unique products to the accessories segment in 2021, which is highest among all the segments. This indicate a strong demand for product in accessories segment.

Networking segment has the lowest number of increments with only 3 unique products added.

Request Number 9

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

SQL Query

```
WITH cte1 as
(SELECT c.channel,
round(SUM(s.sold_quantity* p.gross_price)/1000000,2)AS Gross_sales_mln
FROM fact_sales_monthly s
JOIN fact_gross_price p
ON s.product_code = p.product_code
AND s.fiscal_year = p.fiscal_year

JOIN dim_customer c
ON c.customer_code = s.customer_code
WHERE s.fiscal_year='2021'
GROUP BY c.channel)
SELECT
cte1.*,
CONCAT(Round(cte1.Gross_sales_mln * 100 /
SUM(cte1.Gross_sales_mln) OVER (),2), '%') AS percentage_contri

FROM
cte1
ORDER BY percentage_contri DESC;
```

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Get the top 3 products in each division that have a high total_sold_quantity in the fiscal year 2021

Request Number 1

Request Number 2

Request Number 3

Request Number 4

Request Number 5

Request Number 6

Request Number 7

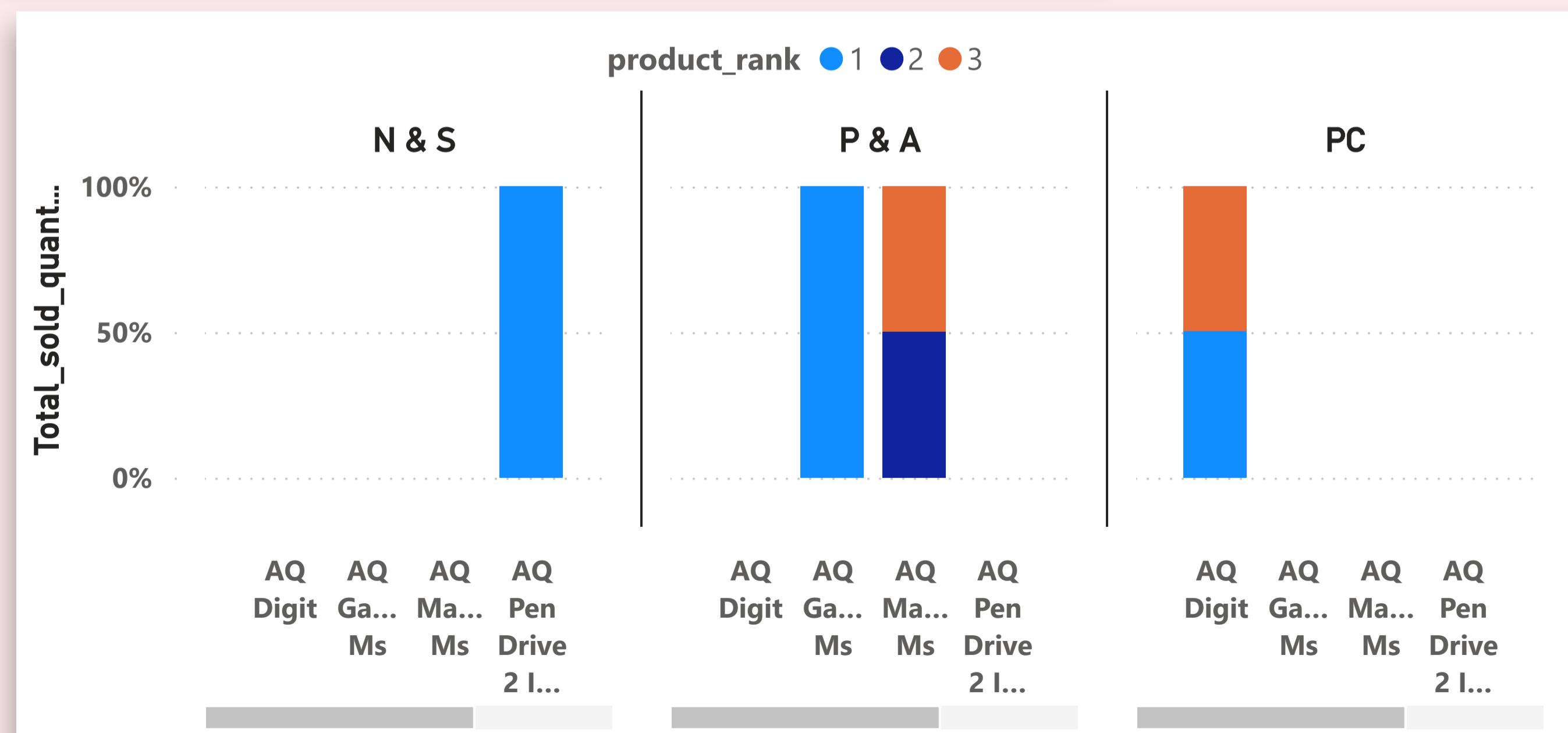
Request Number 8

Request Number 9

Request Number 10

division	total_sold_quantity
▀ N & S	2065621
AQ Pen Drive 2 IN 1	701373
AQ Pen Drive DRC	1364248
▀ P & A	1267834
AQ Gamers Ms	428498
AQ Maxima Ms	839336
▀ PC	51989
AQ Digit	34709
AQ Velocity	17280
Total	3385444

SQL Query



Atliq Hardware had three different product division in the fiscal year 2021. In that year the highest sold quantity for each division were : N&S division: AQ Pen Drive 2 IN 1 Premium ,with 0.70 million units sold. P&A division : AQ Gamers Ms Standard 2, with 0.43 million units sold. PC division :AQ Digit Standard Blue , with 0.02 million units sold.

Request Number 10

Get the top 3 products in each division that have a high total_sold_quantity in the fiscal year 2021

SQL Query

```
WITH ranked_product AS
(SELECT p.division,
p.product_code,
p.product,
SUM(s.sold_quantity)AS total_sold_quantity,
RANK() OVER(partition by p.division ORDER BY SUM(s.sold_quantity)DESC) AS product_rank
FROM dim_product p

JOIN

fact_sales_monthly s

ON
s.product_code = p.product_code
WHERE s.fiscal_year ='2021'

GROUP BY p.division, p.product, p.product_code
ORDER BY p.division, product_rank)
SELECT division,product_code,product,
total_sold_quantity,product_rank
FROM
ranked_product
WHERE product_rank <= 3
```

Intro page

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