CONSUMER GOODS AD HOC INSIGHTS

DESIGNED BY : CHINMAYEE BARIK

AGENDA

Overview of Company

About data

Objective

Ad hoc request with Insights

Our Company

- Atliq Hardware is one of the leading computer hardware producers in India as well as 26 other countries across the globe
- Manufactures products under 3 major divisions i.e., Peripherals & Accessories, PC, Networking & Storage
- We have a total of 74 Customers like Neptune, Sage, Leader, Vijay Sales etc. across all markets/countries

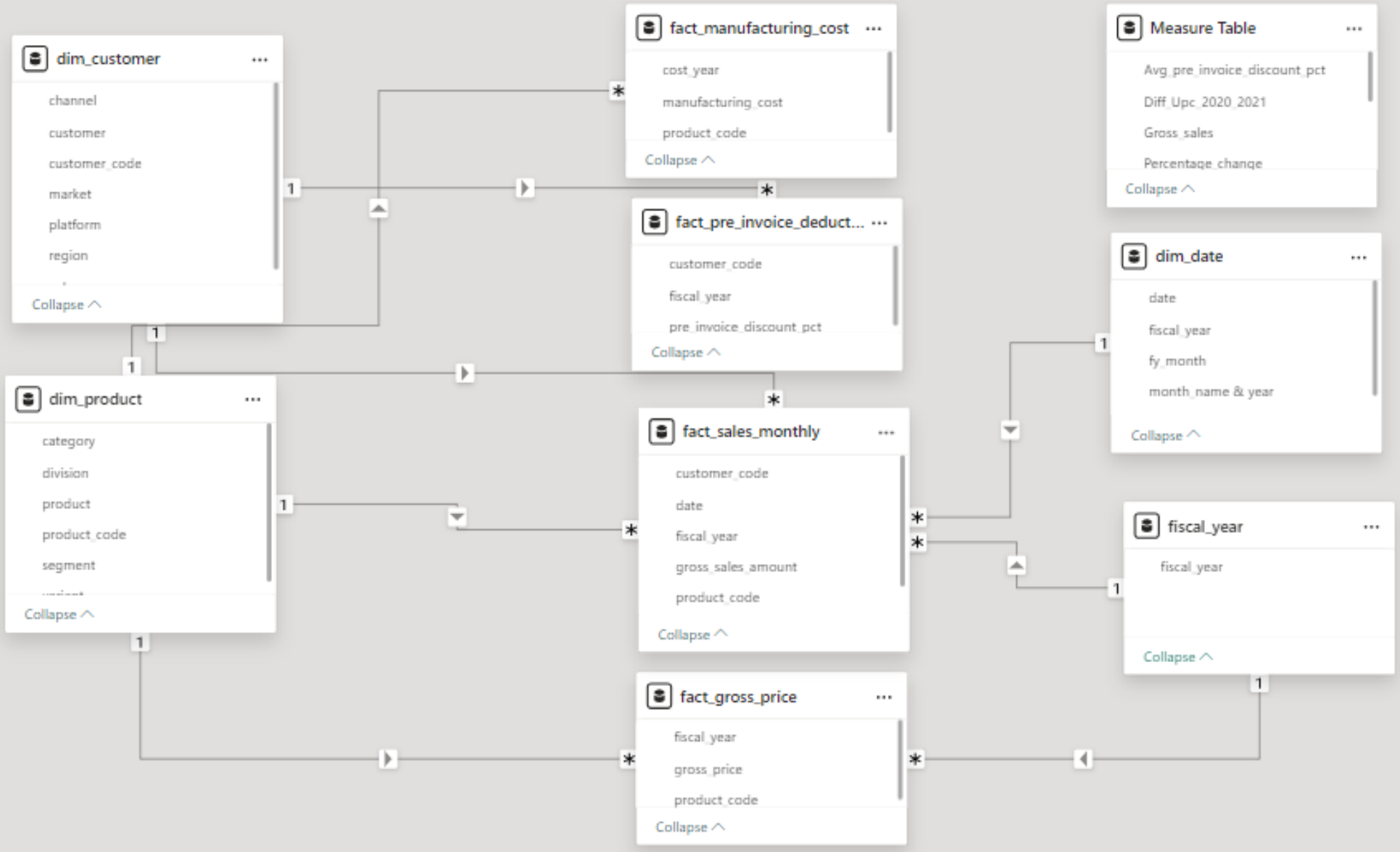
Objective

- Assist the management team to gain more insights about the business
- Take data-driven decisions to scale business

About data

- We have 4 fact tables i.e., sales monthly, manufacturing cost, pre invoice deductions, gross price which have measurable metrics and 2 dimension table i.e., customer details and product details.
- Fiscal year for Atliq Hardware starts from 1st September and ends on 31st August each year
- Sales data is available for fiscal year 2020-2021

ENTITY RELATIONSHIP DIAGRAM(ERD)



region	market
APAC	Australia
APAC	Bangladesh
APAC	China
APAC	India
APAC	Indonesia
APAC	Japan
APAC	Newzealand
APAC	Pakistan
APAC	Philiphines
APAC	South Korea
EU	Austria
EU	France
EU	Germany
EU	Italy
EU	Netherlands
EU	Norway
EU	Poland
EU	Portugal
EU	Spain
EU	Sweden
EU	United Kingdom
LATAM	Brazil
LATAM	Chile
LATAM	Columbia
LATAM	Mexico
NA	Canada
NA	USA

- ATLIQ HARDWARE IS ACTIVELY DOING BUSINESS IN 27 COUNTRIES ACROSS NA, EU AND APAC REGION

Let’s see requests, query results and insights

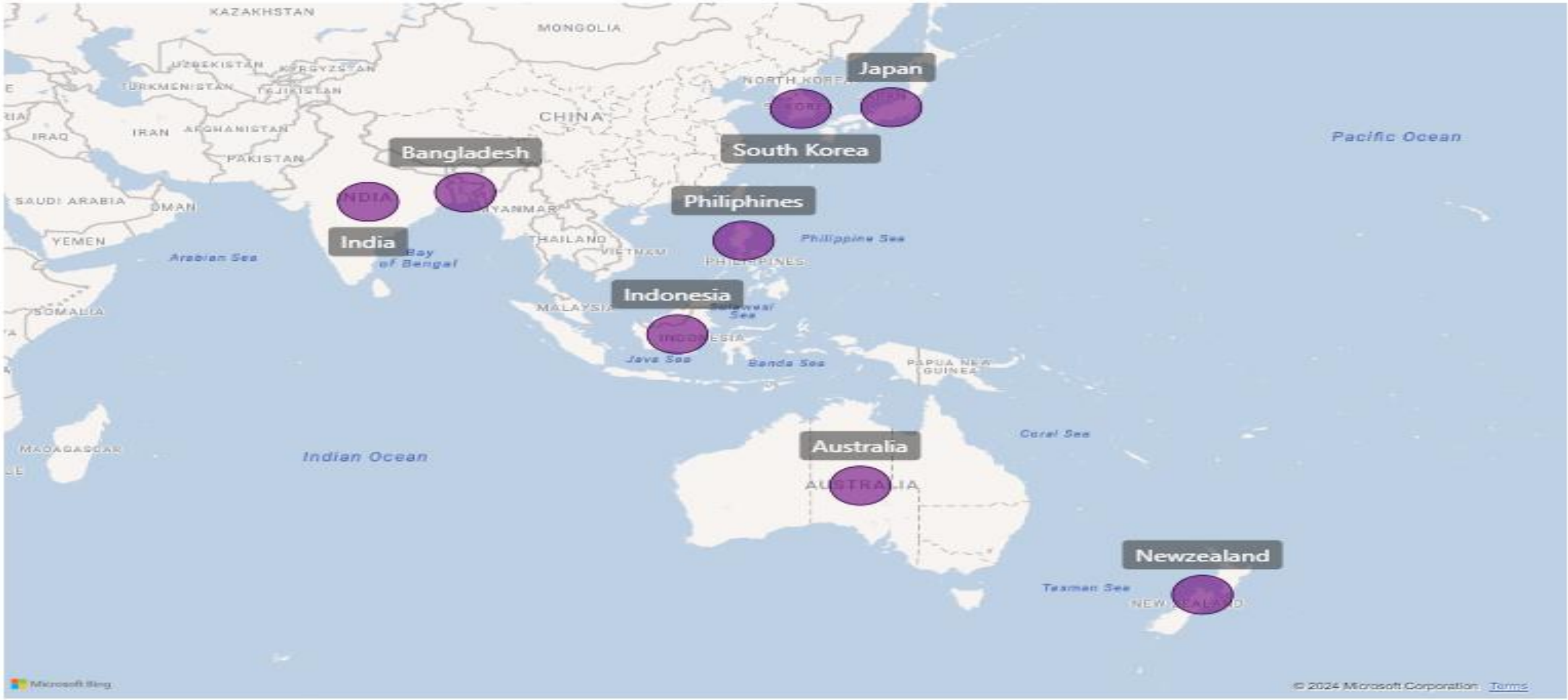
REQUEST 1: PROVIDE THE LIST OF MARKETS IN WHICH CUSTOMER "ATLIQ EXCLUSIVE" OPERATES ITS BUSINESS IN THE APAC REGION

Query:

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

Output:

	market
▶	India
	Indonesia
	Japan
	Philiphines
	South Korea
	Australia
	Newzealand
	Bangladesh



INSIGHTS

- Atliq Exclusive operates its business in 8 major markets of Asia Pacific region
- Atliq Exclusive has the most stores in APAC region followed by EU(6) and NA(2)

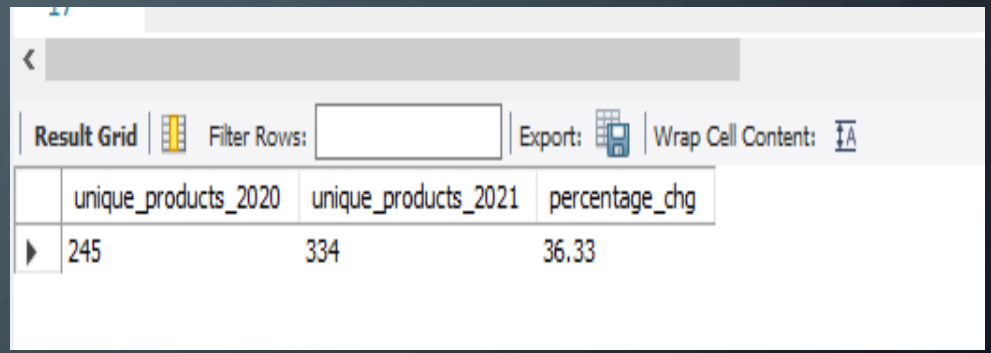
Request 2: What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields:
unique_products_2020, unique_products_2021, percentage_chg

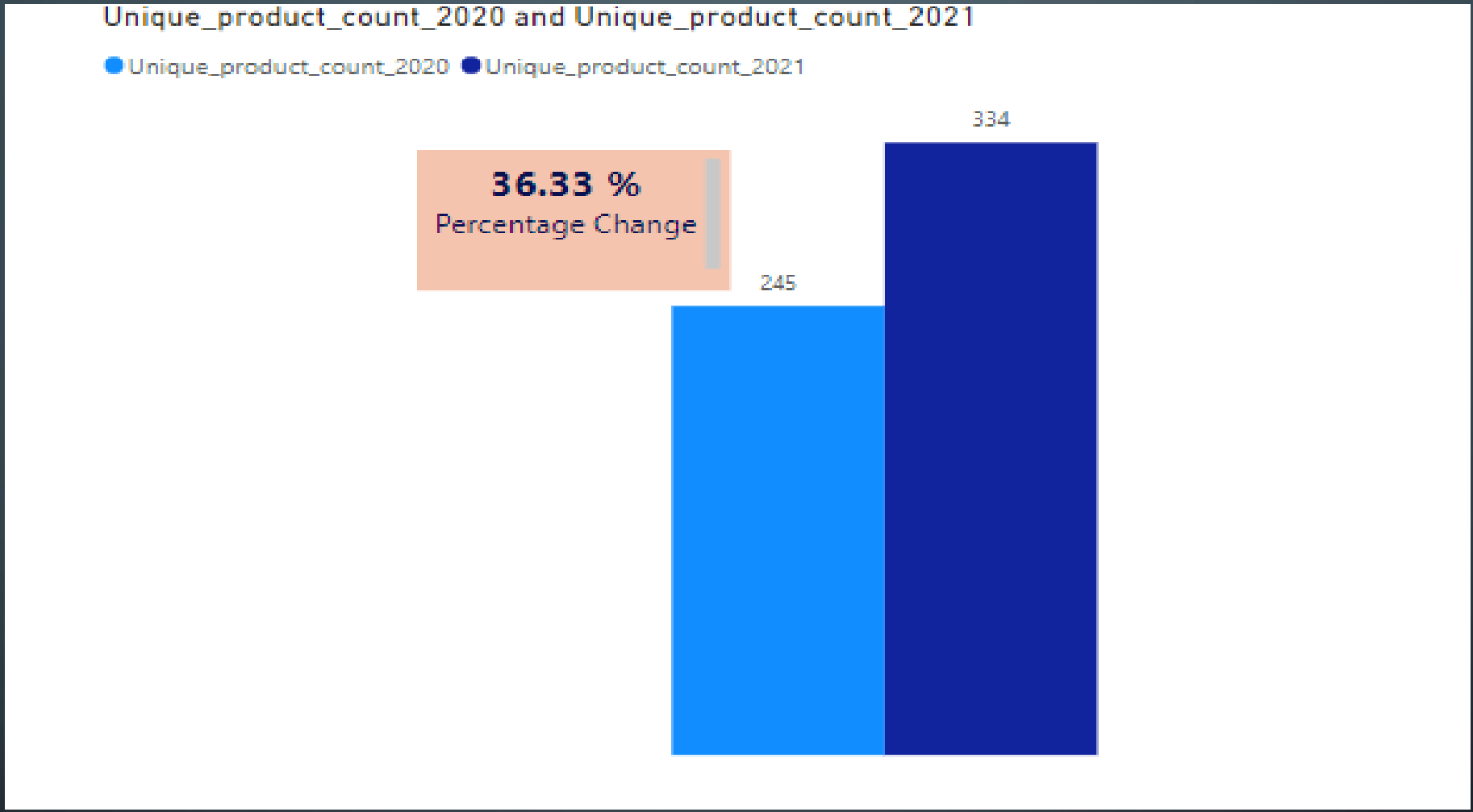
Query:

```
WITH unique_product_count AS(
SELECT
COUNT(DISTINCT CASE WHEN fiscal_year=2020 THEN
product_codeEND)AS unique_products_2020,
COUNT(DISTINCT CASE WHEN fiscal_year=2021 THEN
product_code END)AS unique_products_2021
FROM fact_sales_monthly
WHERE fiscal_year IN (2020,2021)
)
SELECT unique_products_2020,unique_products_2021,
ROUND((unique_products_2021-
unique_products_2020)*100/unique_products_2020,2) AS
percentage_chg

FROM unique_product_count;
```

Output:





Insights

- With a 36.33% increase in new products, Altiq hardware is building a strong and dynamic reputation by meeting with the changing needs of the customer

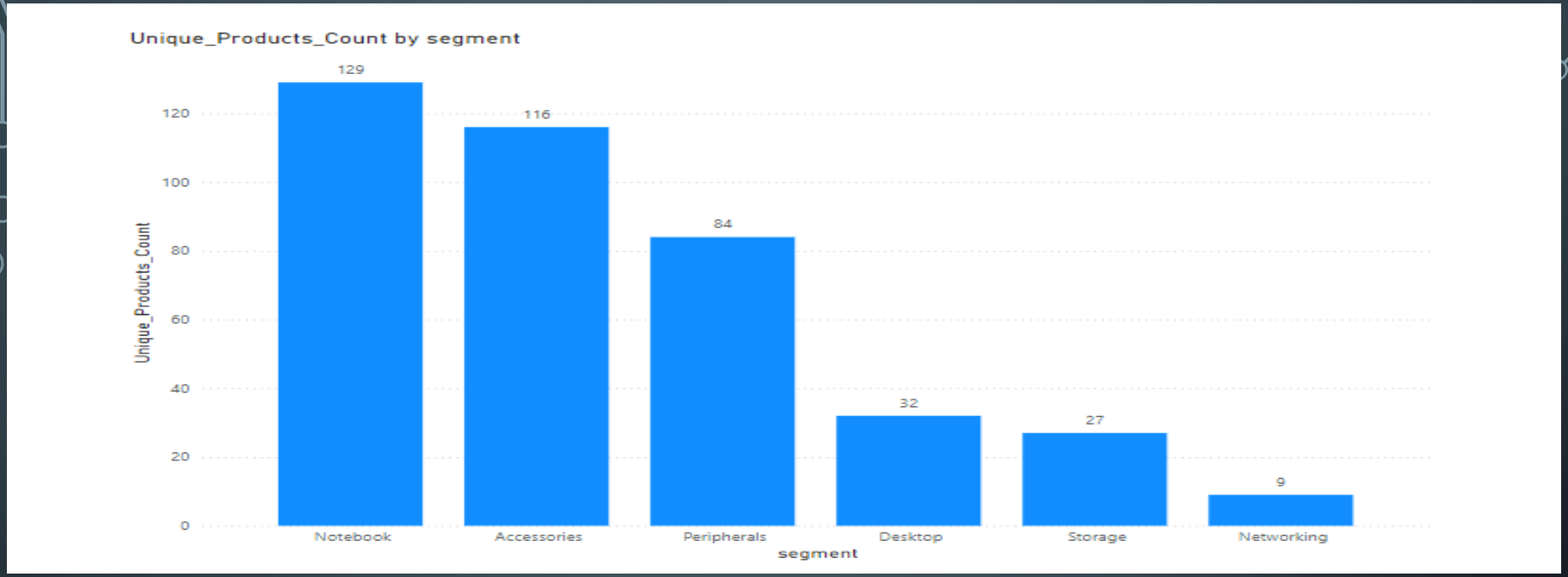
Request 3: Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields: segment, product_count

Query:

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

Output:

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



Insights

- We have a wide range of products under segment: Notebook, Accessories and Peripherals averaging around 110 while segment like Desktop, Storage and Network are lagging with an average of 23 products per segment.
- Product Development team needs to evaluate on products that require redesigning as per modern standards
- Innovations will keep Atliq Hardware ahead in this competitive market

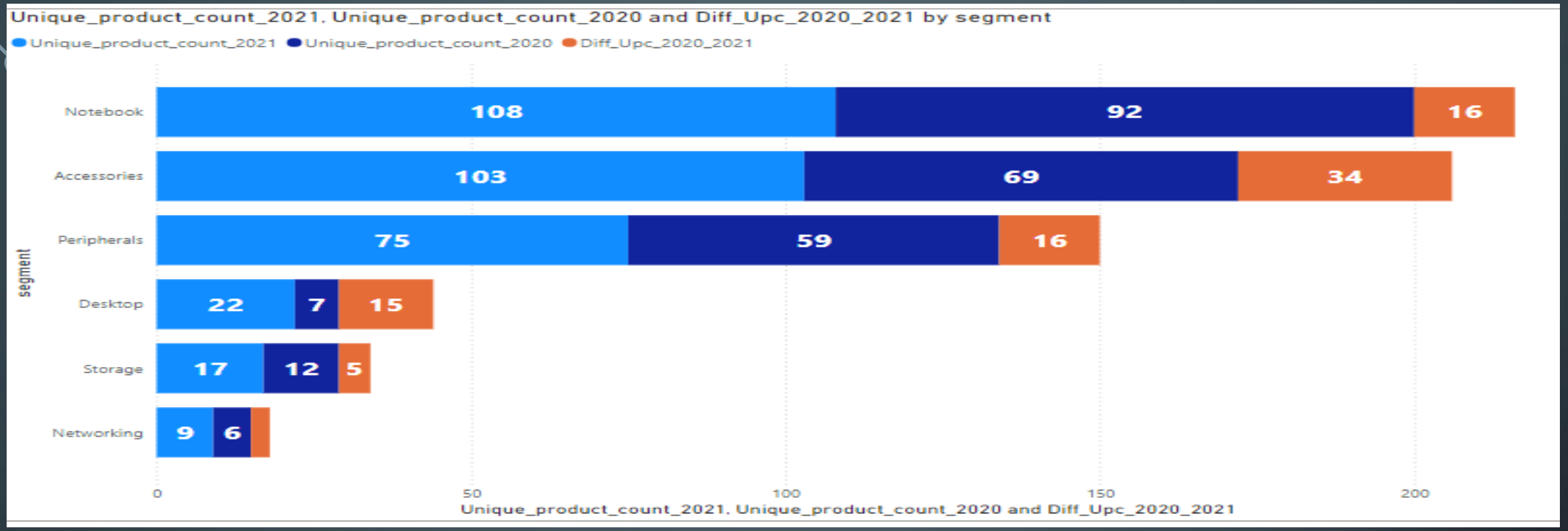
Request 4: Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields:
segment, product_count_2020, product_count_2021, difference

Query:

```
WITH unique_product AS
(
 SELECT
      b.segment AS segment,
      COUNT(DISTINCT
          (CASE
              WHEN fiscal_year = 2020 THEN
a.product_code END)) AS product_count_2020,
       COUNT(DISTINCT
          (CASE
              WHEN fiscal_year = 2021 THEN
a.product_code END)) AS product_count_2021
 FROM fact_sales_monthly AS a
 JOIN dim_product AS b
 ON a.product_code = b.product_code
 GROUP BY b.segment
)
SELECT segment, product_count_2020, product_count_2021,
(product_count_2021-product_count_2020) AS difference
FROM unique_product
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

- With the introduction of 34 new products, Accessories segment has the highest increase in number of unique products
- Notebook and Peripherals each has an increment of 16 new unique products
- Product Development team has done a good job in the Desktop segment by increasing unique products from 7 to 22
- Networking segment is at the bottom with 3 new products introduced since 2020

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 a.product_code AS product_code,
       a.product AS product,
       b.manufacturing_cost AS
manufacturing_cost
FROM
   dim_product AS a
   INNER JOIN
   fact_manufacturing_cost AS b
 ON a.product_code=b.product_code
WHERE b.manufacturing_cost IN
         (SELECT MAX(manufacturing_cost)
    FROM fact_manufacturing_cost
 UNION
SELECT MIN(manufacturing_cost) FROM
      fact_manufacturing_cost);
ORDER BY b.manufacturing_cost DESC;
```

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

AQ HOME Allin1 Gen 2 (Plus 3)
Category: Personal Desktop

240.5364

Lowest manufacturing cost

AQ Master wired x1 Ms (Standard 1)
Category: Mouse

0.8920

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

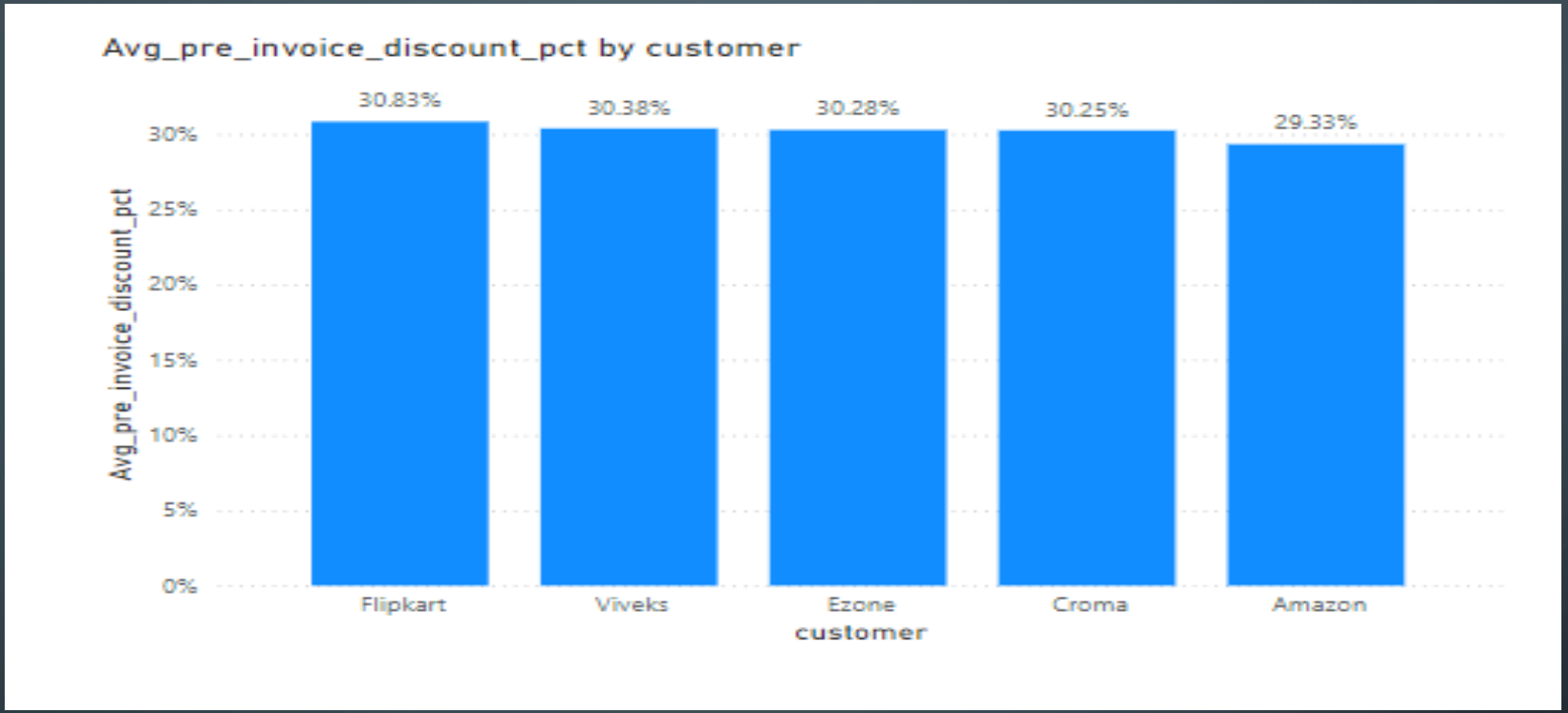
Query:

```
SELECT a.customer_code ,
       b.customer,

CONCAT(ROUND(AVG(a.pre_invoice_discount_pct
)*100,2),'%') AS
average_discount_percentage
FROM fact_pre_invoice_deductions AS a
INNER JOIN
dim_customer AS b
ON a.customer_code = b.customer_code
WHERE market = 'India'
AND fiscal_year = 2021
GROUP BY customer, customer_code
ORDER BY AVG(a.pre_invoice_discount_pct)
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

- Flipkart has received the highest pre invoice discount percent i.e., 30.83%
- Top 5 Customers have a collective average around 30.21%
- FY 2021, Average discount provided to all customers in Indian market was 24.16%

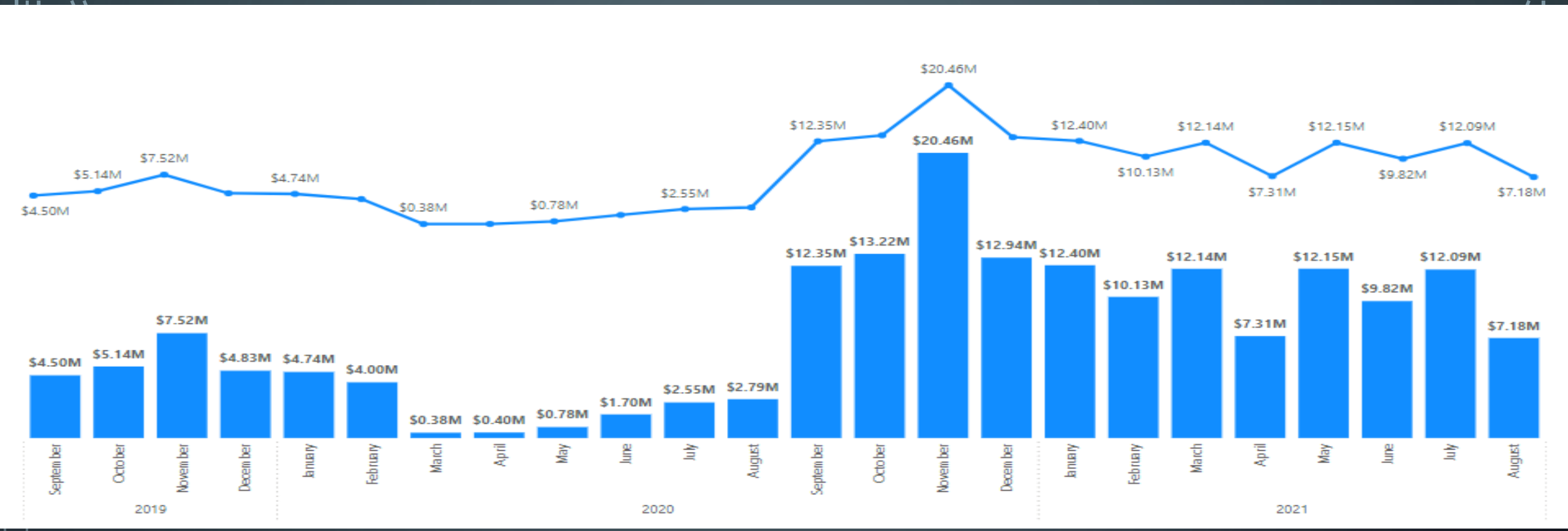
Request 7: Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month. This analysis helps to get an idea of low and high-performing months and take strategic decisions. The final report contains these columns: Month, Year, Gross sales Amount

Query:

```
SELECT
      MONTHNAME(a.date) AS month_name,
YEAR(a.date)AS year_,
CONCAT('$',ROUND(SUM(a.sold_quantity *
b.gross_price)/1000000,2)) AS
gross_sales_amount_millions
FROM fact_sales_monthly AS a
INNER JOIN fact_gross_price AS b
ON b.product_code = a.product_code
AND b.fiscal_year = a.fiscal_year
INNER JOIN dim_customer AS c
ON c.customer_code = a.customer_code
WHERE c.customer = 'Atliq Exclusive'
GROUP BY month_name, year_
ORDER BY year_;
```

Output:

month_name	year_	gross_sales_amount_millions
September	2019	$4.50
October	2019	$5.14
November	2019	$7.52
December	2019	$4.83
January	2020	$4.74
February	2020	$4.00
March	2020	$0.38
April	2020	$0.40
May	2020	$0.78
June	2020	$1.70
July	2020	$2.55
August	2020	$2.79
September	2020	$12.35
October	2020	$13.22
November	2020	$20.46
December	2020	$12.94
January	2021	$12.40
February	2021	$10.13
March	2021	$12.14
April	2021	$7.31
May	2021	$12.15
June	2021	$9.82
July	2021	$12.09
August	2021	$7.18



Insights

- For Atliq Exclusive Store maximum sales were recorded in November- 2020($20.46 Million) and lowest sales recorded in March-2020 ($0.38 Million)
- Low sales from March to August were due to pandemic when stores were shut
- Sales started improving from September-2020 onwards due to ease in lockdown restrictions and the onset of festival season in India and other markets

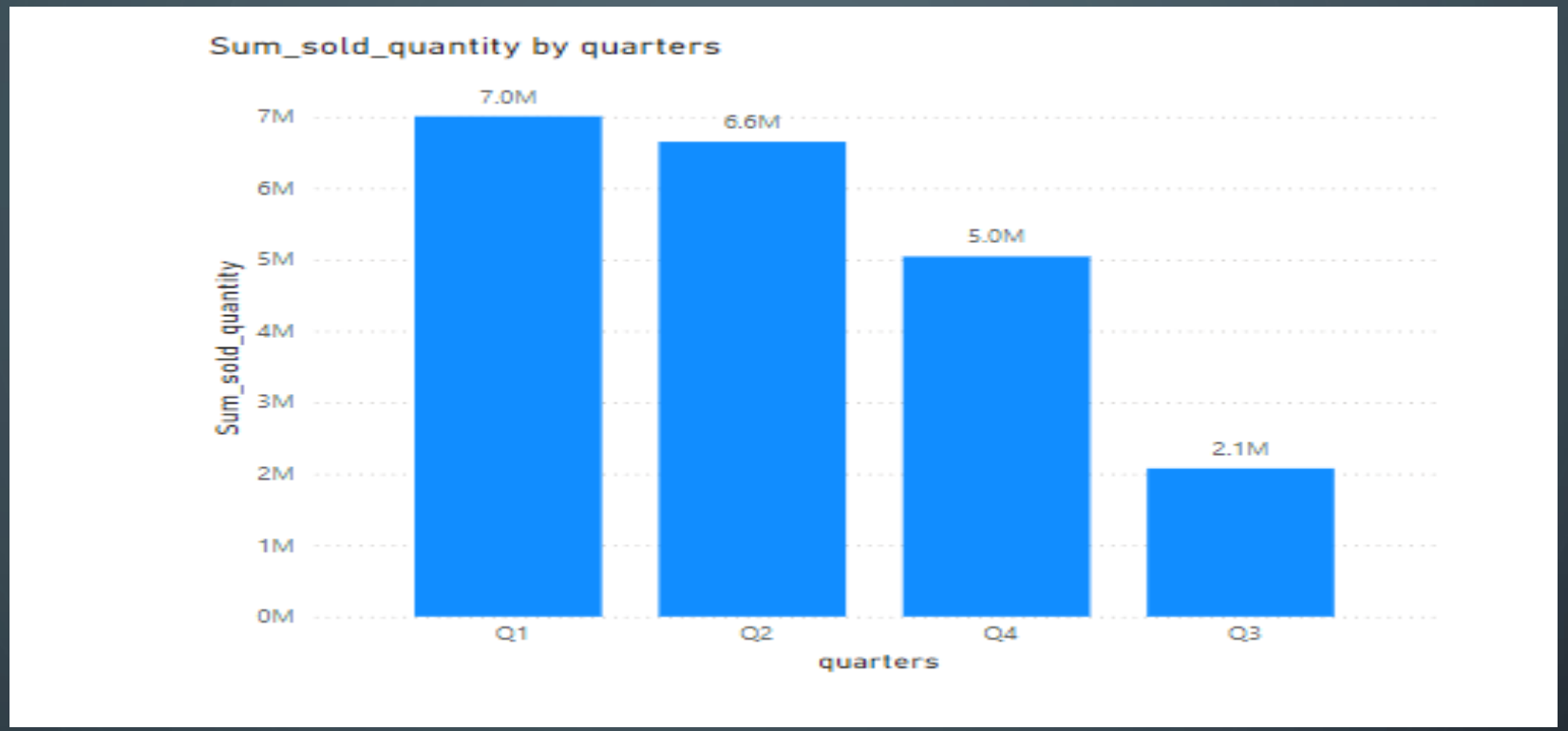
Request 8: In which quarter of 2020, got the maximum total_quantity_sold? The final output contains these fields sorted by the total_quantity_sold:
Quarter, total_quantity_sold

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

Output:

quarters	total_sold_quantity
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087



Insights

- Q1(September-November) had the maximum quantity sold for FY 2020
- Sales dropped in Q3(March-May) because of pandemic
- Increase in sales recorded in Q4(June-August)

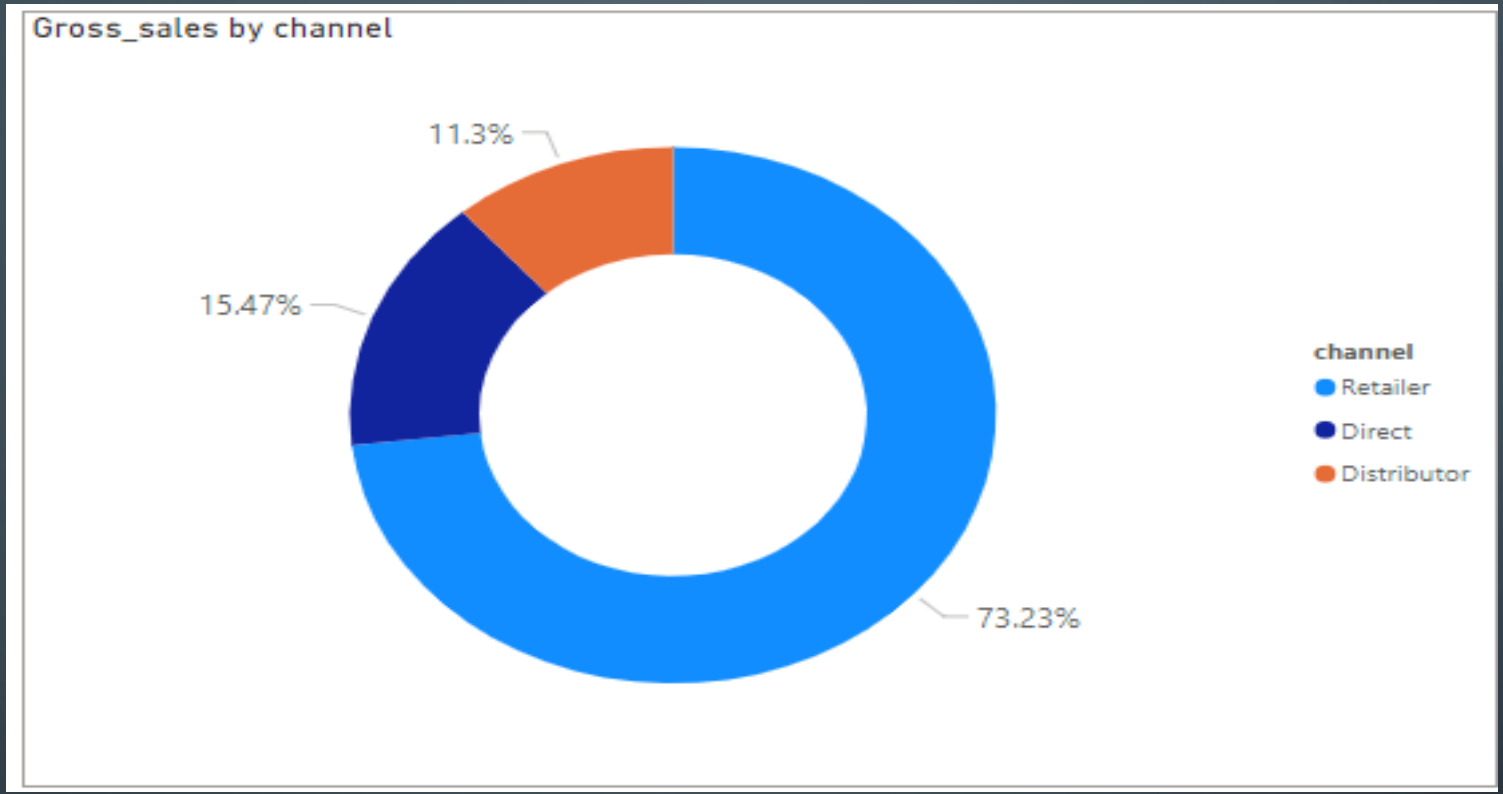
Request 9: Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution? The final output contains these fields:
channel, gross_sales_mln, percentage

Query:

```
WITH gross_sales AS(
        SELECT c.channel AS channel,
       ROUND(SUM(b.gross_price*a.sold_quantity)/1000000,2)
 AS gross_sales_million
FROM fact_sales_monthly AS a
LEFT JOIN fact_gross_price AS b
ON a.product_code=b.product_code
AND a.fiscal_year=b.fiscal_year
LEFT JOIN dim_customer AS c
ON a.customer_code=c.customer_code
WHERE a.fiscal_year=2021
GROUP BY c.channel
)
SELECT channel,
CONCAT('$',gross_sales_million) AS gross_sales_million,
CONCAT(ROUND(gross_sales_million/SUM(gross_sales_million) OVER() * 100,2),'%') AS percentage
FROM gross_sales
ORDER BY percentage DESC;
```

Output:

	channel	gross_sales_million	percentage
▶	Retailer	$1219.08	73.23%
	Direct	$257.53	15.47%
	Distributor	$188.03	11.30%



Insights

- Retailers with $1219.08 Million which is 73.23% of gross sales for FY 2021 followed by Direct channel with $257.53 Million and Distributor with $188.03 Million.

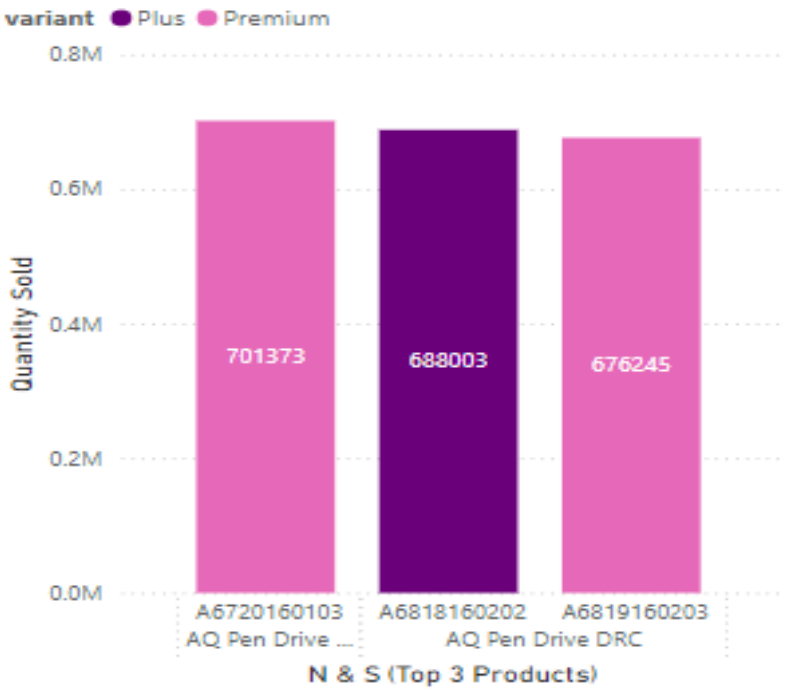
Request 10: Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021? The final output contains these fields: division, product_code, product, total_sold_quantity, rank_order

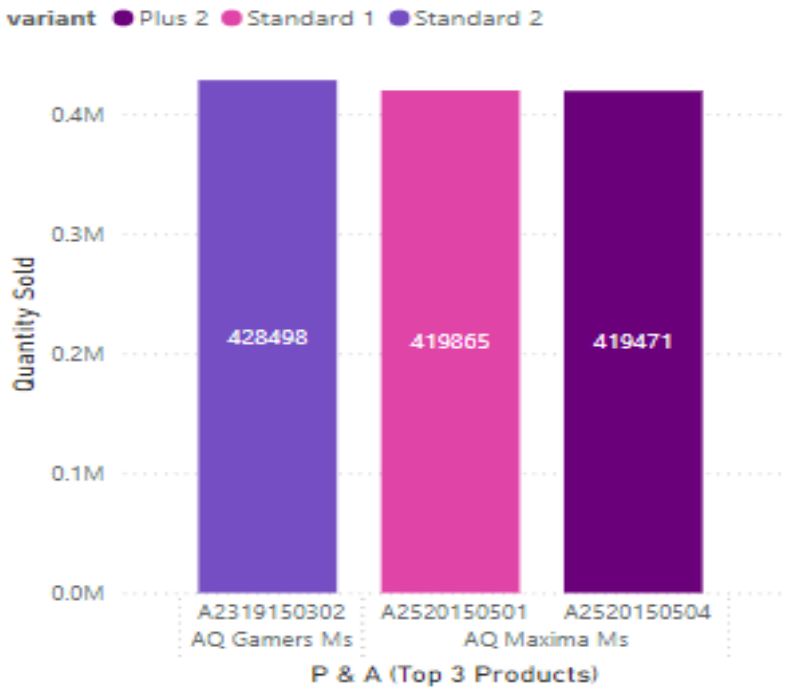
Query:

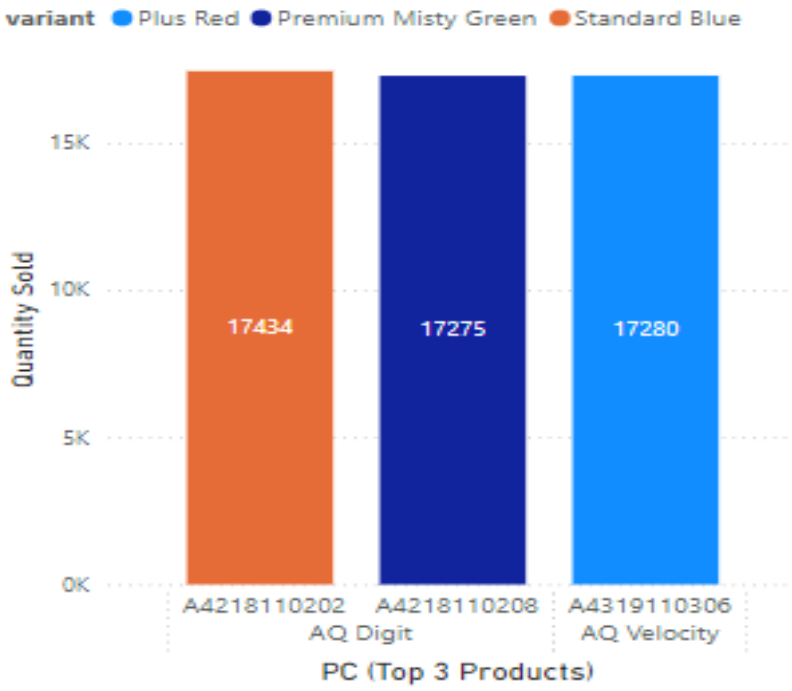
```
WITH top_sold_products AS
(
    SELECT b.division AS division,
           b.product_code AS product_code,
           b.product AS product,
           SUM(a.sold_quantity) AS total_sold_quantity
    FROM fact_sales_monthly AS a
    INNER JOIN dim_product AS b
    ON a.product_code = b.product_code
    WHERE a.fiscal_year = 2021
    GROUP BY  b.division, b.product_code, b.product
    ORDER BY total_sold_quantity DESC
),
top_sold_per_division AS
(
 SELECT division,
        product_code,
        product,
        total_sold_quantity,
        DENSE_RANK() OVER(PARTITION BY division ORDER BY
total_sold_quantity DESC) AS rank_order
 FROM top_sold_products
 )
 SELECT * FROM top_sold_per_division
 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







Insights

- For N&S, the top selling product is AQ Pen Drive 2 IN 1 with a total of 7,01,373 quantities sold in FY 2021 followed by two variants of AQ Pen Drive DRC with 6,88,003 and 6,76,245 quantity sold respectively
- For P&A, top selling product is AQ Gamers Ms with 4,28,498 quantities sold followed by two variants of AQ Maxima Ms
- For PC, top selling product is AQ Digit PC with 17,434 quantities sold
- The company can take some strategic decisions to improve sale in PC division

THANK YOU