Ad_Hoc Insights

Consumer Goods

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AGENDA

WHY?

Objectives

WHAT?

Company's detail and market

HOW?

Data, Requests, and Tools

Why?

Objectives

- **Atliq Hardware** (fictitious corporation) is one of the major computer hardware manufacturers in India, with a strong presence in other nations.
- The management did note that they do not have sufficient insights to make prompt, wise, and data-informed judgments.
- The company seeks insights for 10 ad hoc requests.

WHAT?

Company Details

Atliq Hardware is a computer hardware and accessory manufacturer.

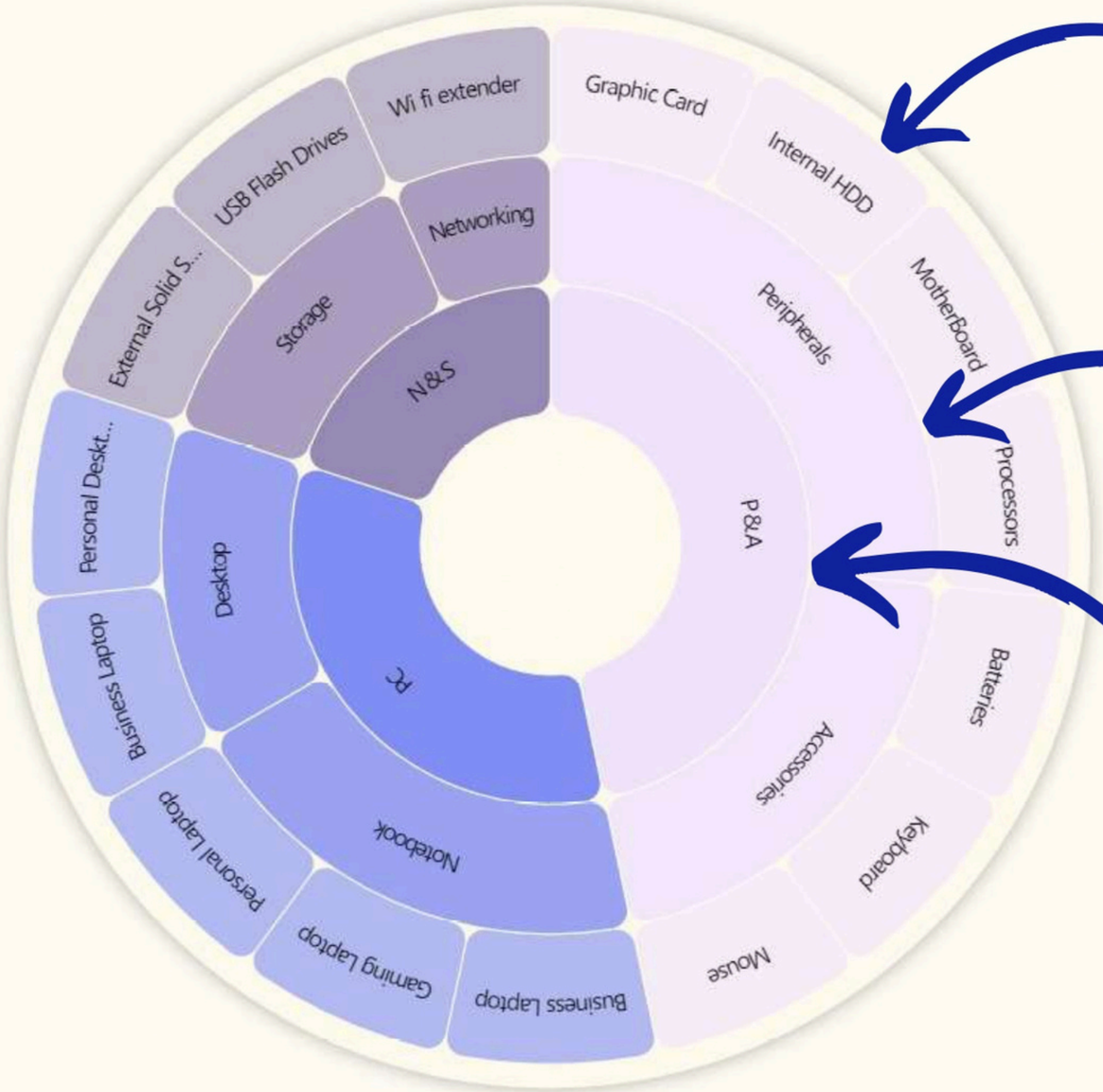
FISCAL YEAR

SEPTEMBER 2019 - AUGUST 2020

FY 2020

SEPTEMBER 2020 - AUGUST 2021

FY 2021



Outer Circle:
Category

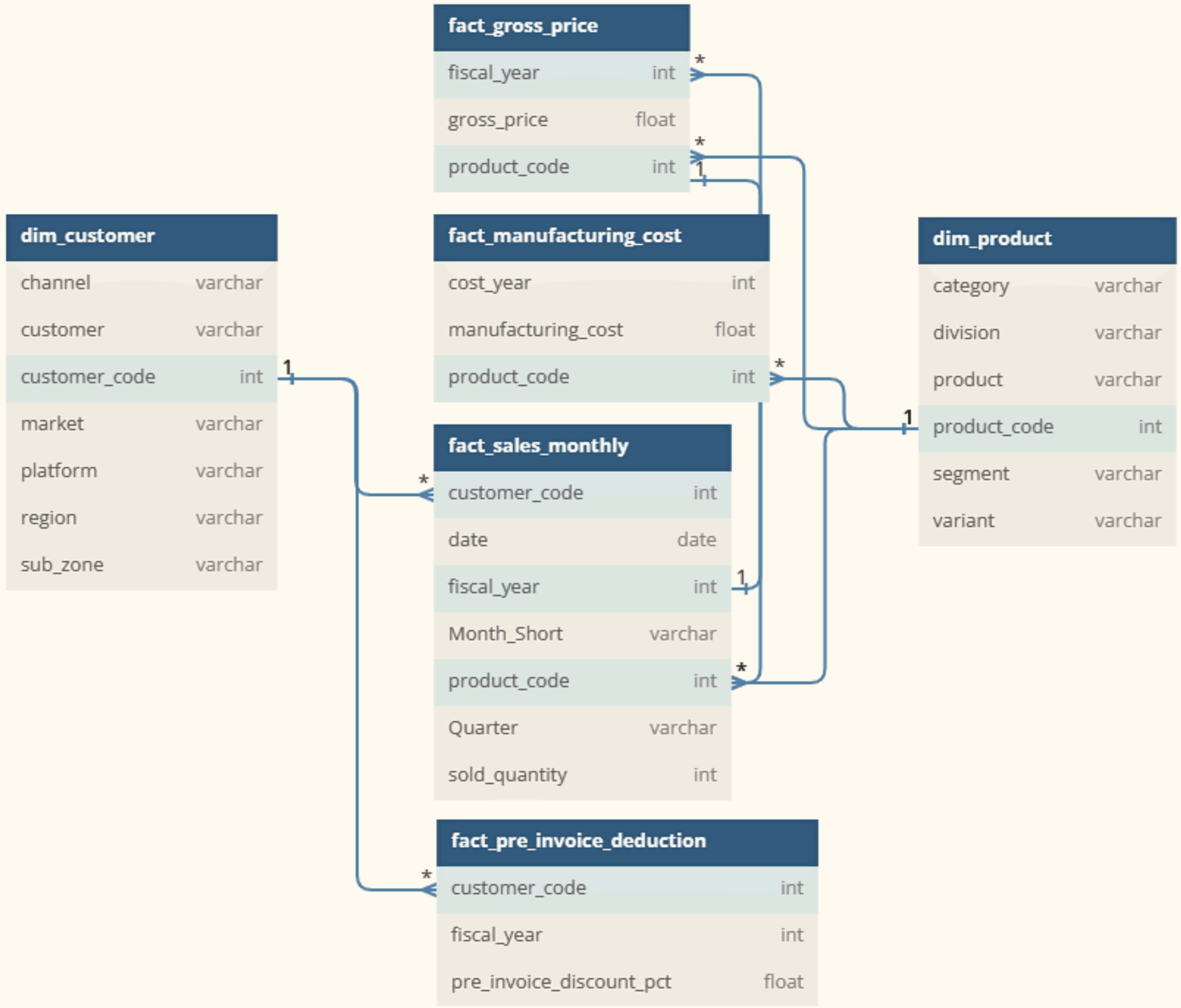
Mid Circle:
Segment

Inner Circle:
Division

" DSC "

HOW?

Model View



Company's Market

AtliQ Hardware

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

SQL Query:

```
SELECT market FROM dim_customer
WHERE customer = 'Atliq Exclusive' AND region = 'APAC'
GROUP BY market
ORDER BY market ;
```

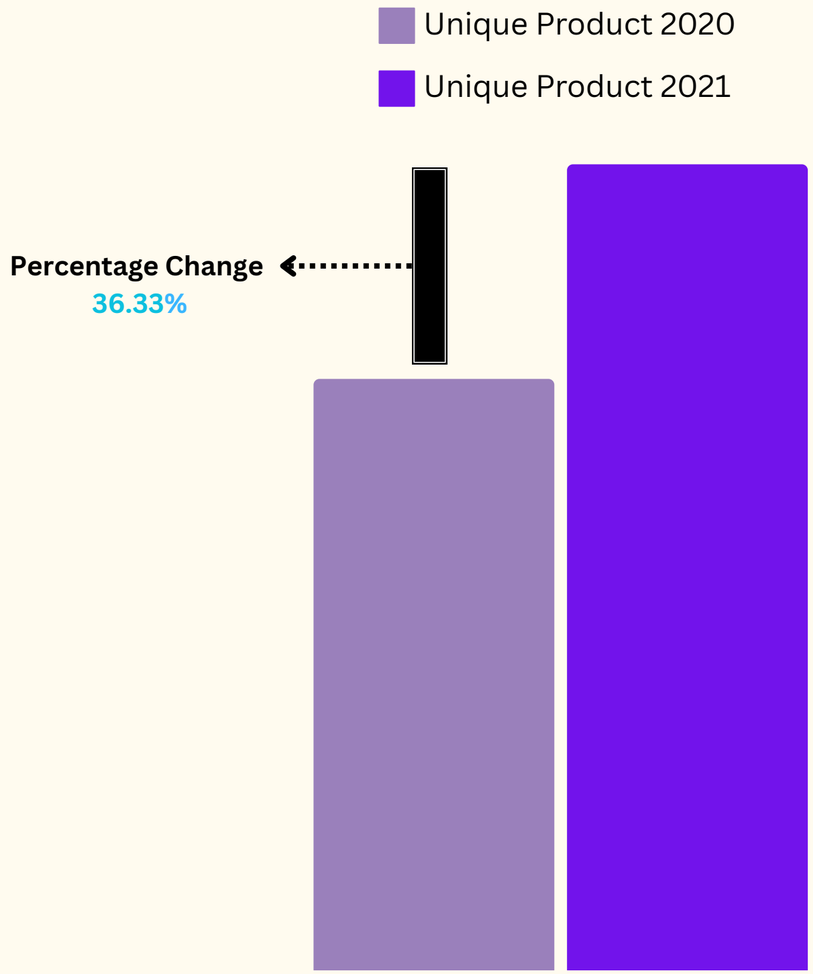
market
Australia
Bangladesh
India
Indonesia
Japan
Newzealand
Philiphines
South Korea

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**

SQL Query:

```
SELECT
unique_product_2020,
unique_products_2021,
ROUND((unique_products_2021 - unique_product_2020) * 100.0 / unique_product_2020, 2)
AS percentage_chg
FROM (
  SELECT
 (SELECT COUNT(DISTINCT product_code) FROM fact_sales_monthly WHERE fiscal_year =
2020) AS unique_product_2020,
 (SELECT COUNT(DISTINCT product_code) FROM fact_sales_monthly WHERE fiscal_year =
2021) AS unique_products_2021)
AS counts;
```

unique_product_2020	unique_products_2021	percentage_chg
245	334	36.33



Insight: Demand and Production both **INCREASED**

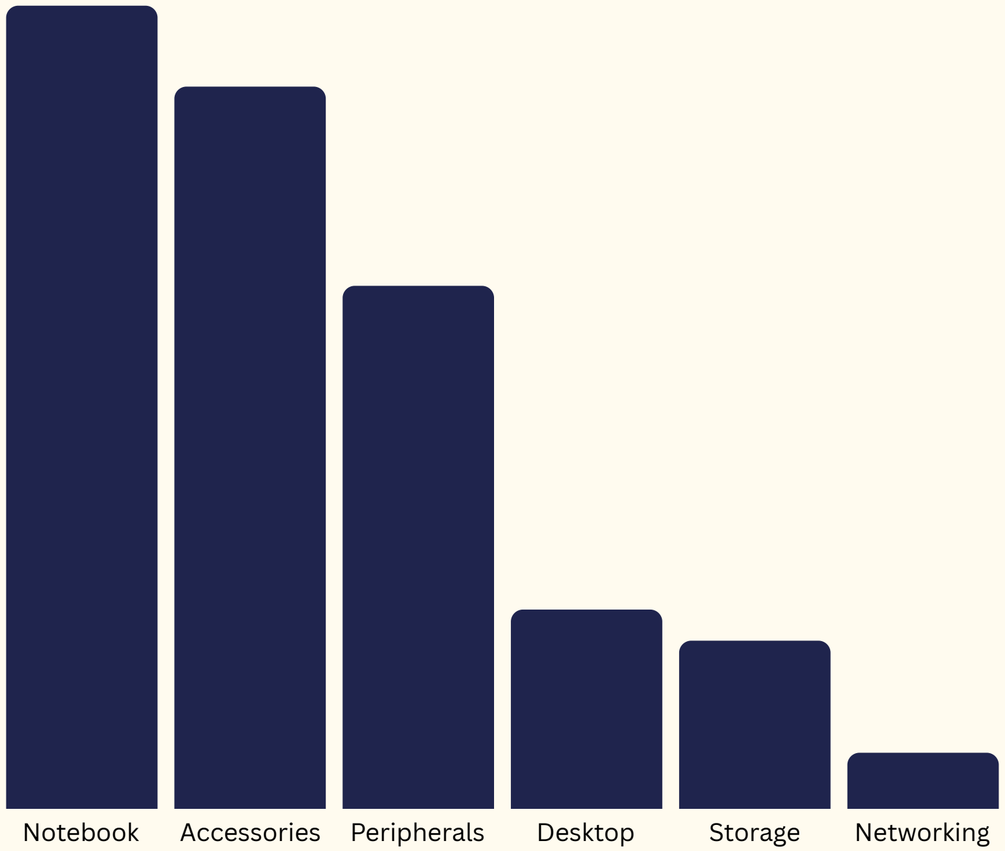
3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields**: segment, product_count**

SQL Query:

```
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

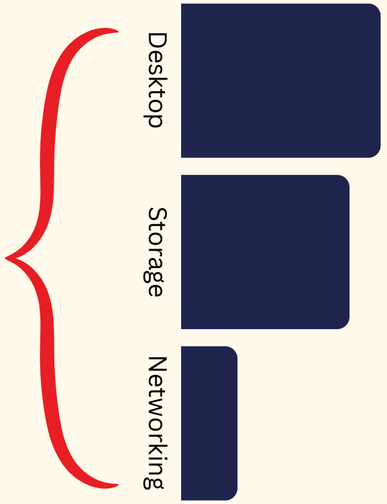
Alarming



Insights:

Segments: notebooks, accessories, and peripherals are showing significant manufacturing growth as compared to desktops, storage, and networking.

Notebooks, accessories, and peripherals constitute **83%** of the total manufactured product.



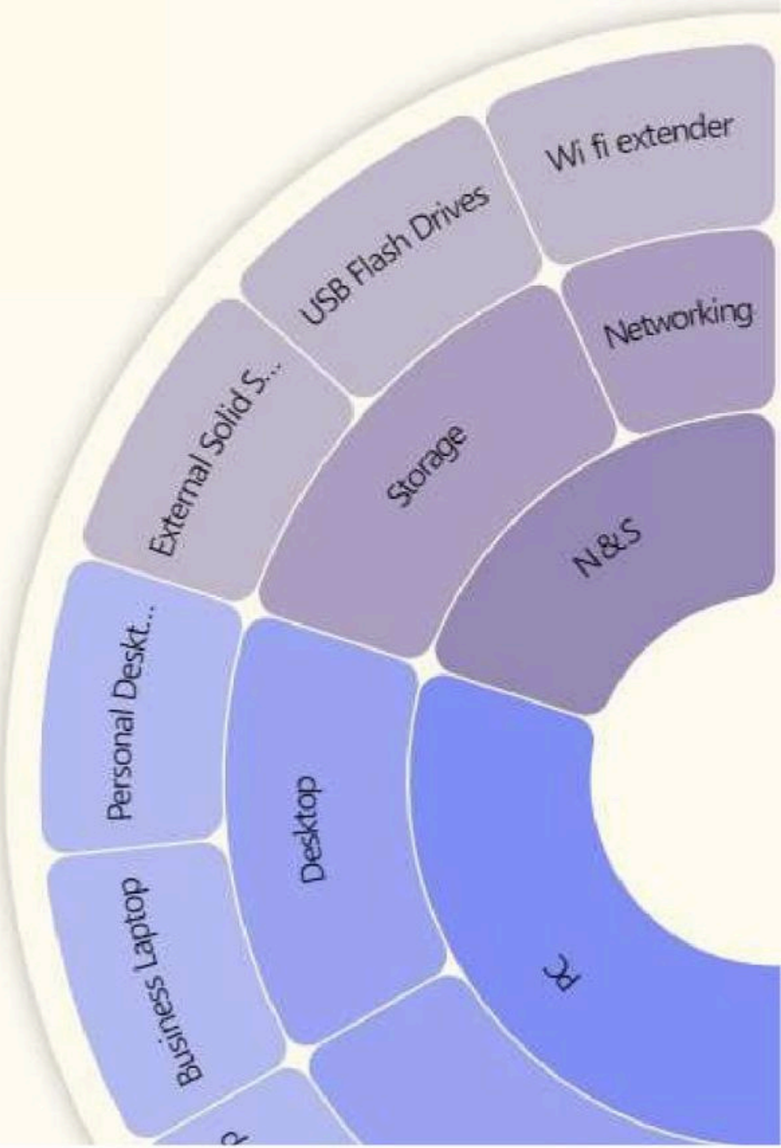
- WiFI Extender
- USB Flash Drives
- External Solid State Drives
- Personal Desktop
- Business Desktop

Segment	AVG MC	AVG GS	Gross Margin
Peripherals	$540.92	$1,814.41	70.19%
Accessories	$543.74	$1,816.42	70.07%
Notebook	$674.68	$2,255.44	70.09%
Desktop	$767.44	$2,553.72	69.95%
Storage	$897.70	$2,986.82	69.94%
Networking	$1,473.32	$4,953.04	70.25%

AVG MC: Average Manufacturing Cost
AVG GS: Average Gross Sales

Suggestions :

- Package Deal
- Customer Services
- Free Vouchers
- Student Discount
- Cash Back
- Gift cards
- Memberships



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**

SQL 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 ;
```

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

Unique product difference per segment from **2020** to **2021**

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:

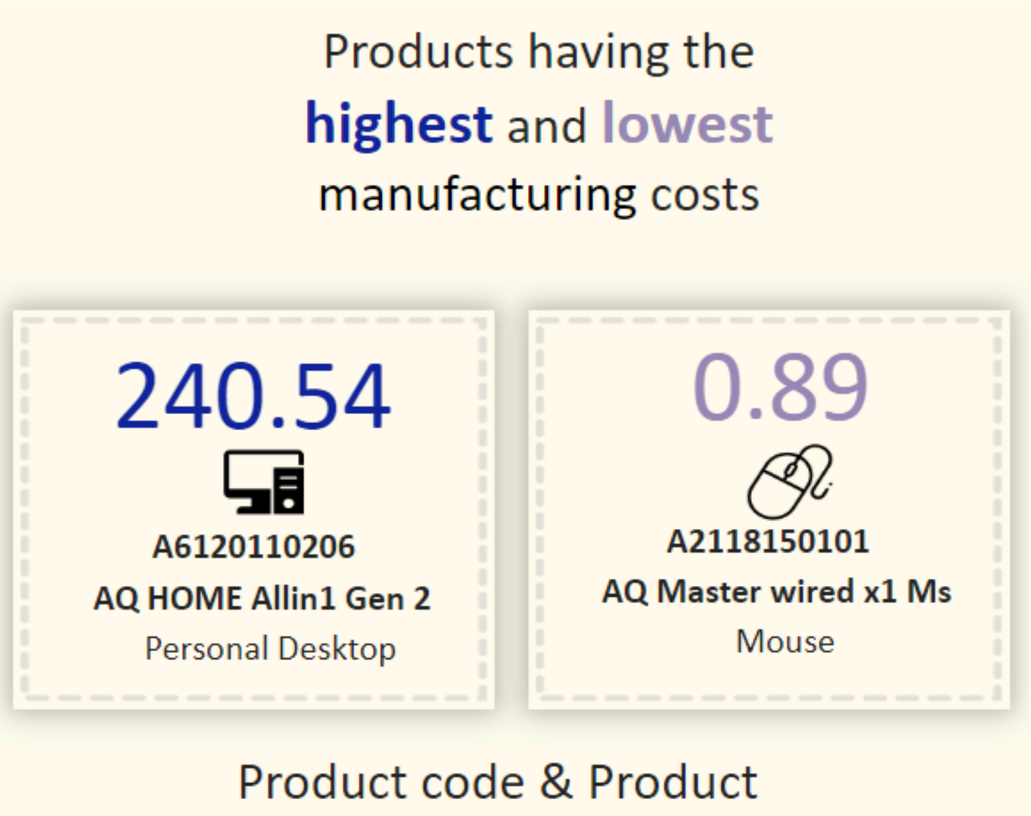
- Accessories had the largest increase in production.
- Storage and networking are experiencing slower production growth than other segments.

5. Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields:**product_code, product, manufacturing_cost**

SQL Query:

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

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



Insights:

- Mouse: AQ Master wired x1 Ms (Variant: Standard 1) has the lowest manufacturing cost.
- Personal Desktop: AQ Home Allin1 Gen2 (Variant: Plus 3) has the highest manufacturing cost.

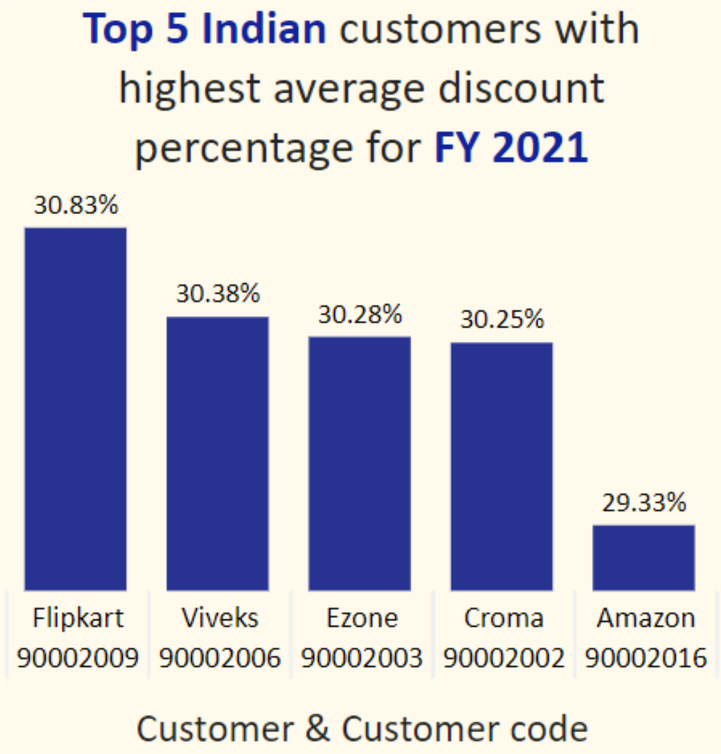
6. Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields: **customer_code, customer, average_discount_percentage**

SQL Query:

```
WITH TBL1 AS
(SELECT customer_code AS A, AVG(pre_invoice_discount_pct) AS B FROM
fact_pre_invoice_deductions
WHERE fiscal_year = '2021'
GROUP BY customer_code),
    TBL2 AS
(SELECT customer_code AS C, customer AS D FROM dim_customer
WHERE market = 'India')

SELECT TBL2.C AS customer_code, TBL2.D AS customer, ROUND (TBL1.B, 4) AS
average_discount_percentage
FROM TBL1 JOIN TBL2
ON TBL1.A = TBL2.C
ORDER BY average_discount_percentage DESC
LIMIT 5 ;
```

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



Insights:

- The largest average pre-invoice discount was given to Flipkart.
- The least average pre-invoice discount was given to Amazon.

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**

SQL Query:

```
SELECT
   CONCAT(MONTHNAME(FS.date),
         ' (',
         YEAR(FS.date),
         ')') AS 'Month',
   FS.fiscal_year,
   ROUND(SUM(G.gross_price * FS.sold_quantity), 2) AS Gross_sales_Amount
FROM
   fact_sales_monthly FS
      JOIN
   dim_customer C ON FS.customer_code = C.customer_code
      JOIN
   fact_gross_price G ON FS.product_code = G.product_code
WHERE
   C.customer = 'Atliq Exclusive'
GROUP BY Month , FS.fiscal_year
ORDER BY FS.fiscal_year;
```

Month	fiscal_year	Gross_sales_Amount
September (2019)	2020	9092670.34
October (2019)	2020	10378637.60
November (2019)	2020	15231894.97
December (2019)	2020	9755795.06
January (2020)	2020	9584951.94
February (2020)	2020	8083995.55
March (2020)	2020	766976.45
April (2020)	2020	800071.95
May (2020)	2020	1586964.48
June (2020)	2020	3429736.57
July (2020)	2020	5151815.40
August (2020)	2020	5638281.83
September (2020)	2021	19530271.30
October (2020)	2021	21016218.21
November (2020)	2021	32247289.79
December (2020)	2021	20409063.18
January (2021)	2021	19570701.71
February (2021)	2021	15986603.89
March (2021)	2021	19149624.92
April (2021)	2021	11483530.30
May (2021)	2021	19204309.41
June (2021)	2021	15457579.66
July (2021)	2021	19044968.82
August (2021)	2021	11324548.34

Fiscal Year **2020**

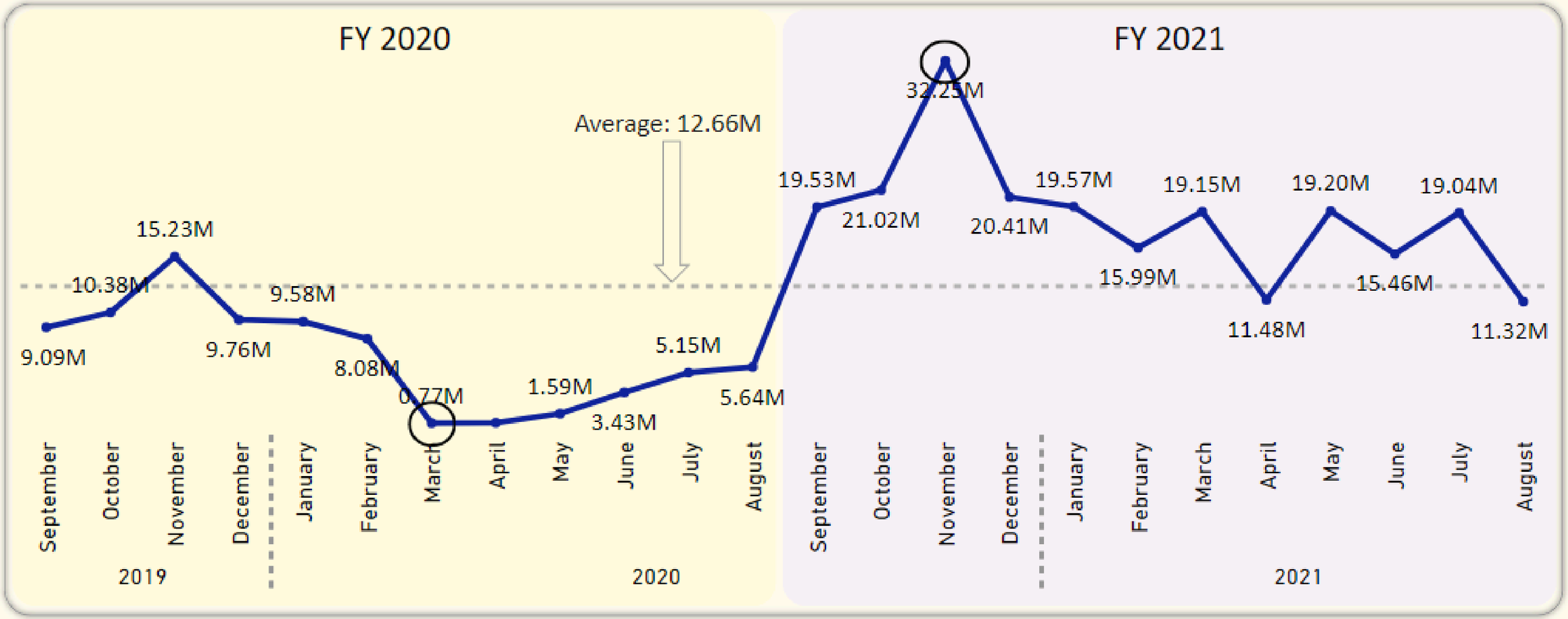
Fiscal Year **2021**

Insights:

The lowest Gross sales total for both fiscal years is in March (2020).

The highest Gross sales total for both fiscal years is in November (2020).

73.8% of the total Gross sales figure is in FY 2021.



Gross sales amount report for **Atliq Exclusive** by month

Reason: Covid-19, Global Chip Shortage

The global computer chip shortage began in early 2020 due to a number of factors, including the COVID-19 pandemic, increased demand, and supply chain disruptions:

source: Wikipedia

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**

Quarters	total_sold_quantity
1	7005619
2	6649642
4	5042541
3	2075087

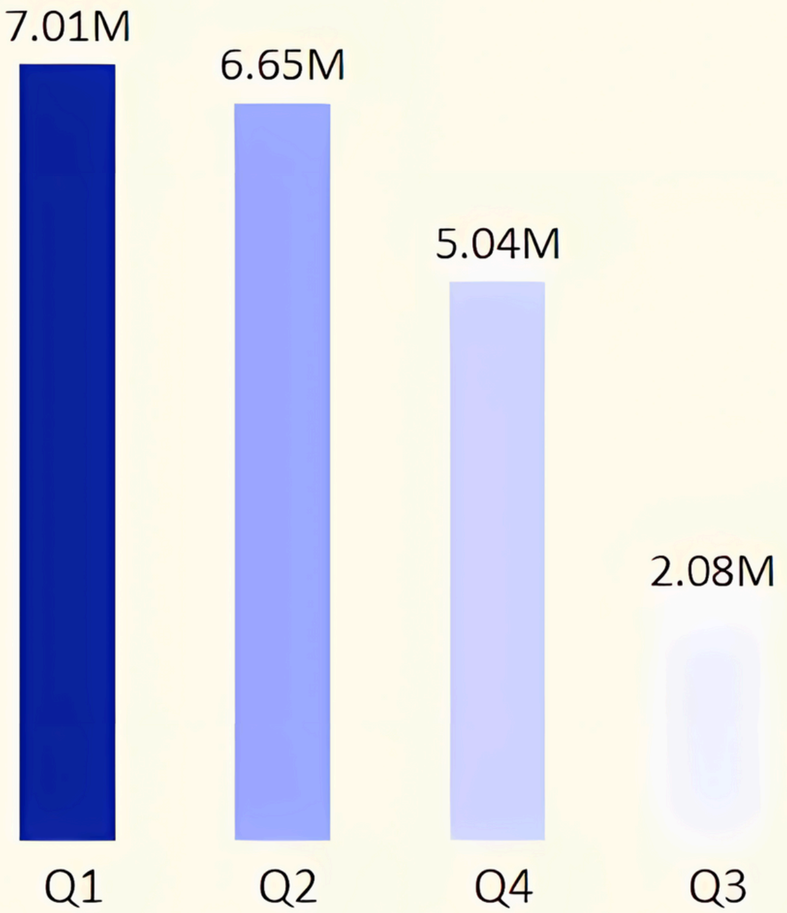
Quarters	total_sold_quantity
[1] September	1764002
[1] October	2190792
[1] November	3050825
[2] December	3184205
[2] January	1762652
[2] February	1702785
[3] March	238961
[3] April	819956
[3] May	1016170
[4] June	1559773
[4] July	1692575
[4] August	1790193

Insights:

- Quarter 1 of FY2020 saw the most units sold overall, while Quarter 3 had the fewest.
- The highest and lowest overall sold quantity is in December and March.
- Quarter 1 accounts for approximately 34% of the total sold quantity for FY2020.

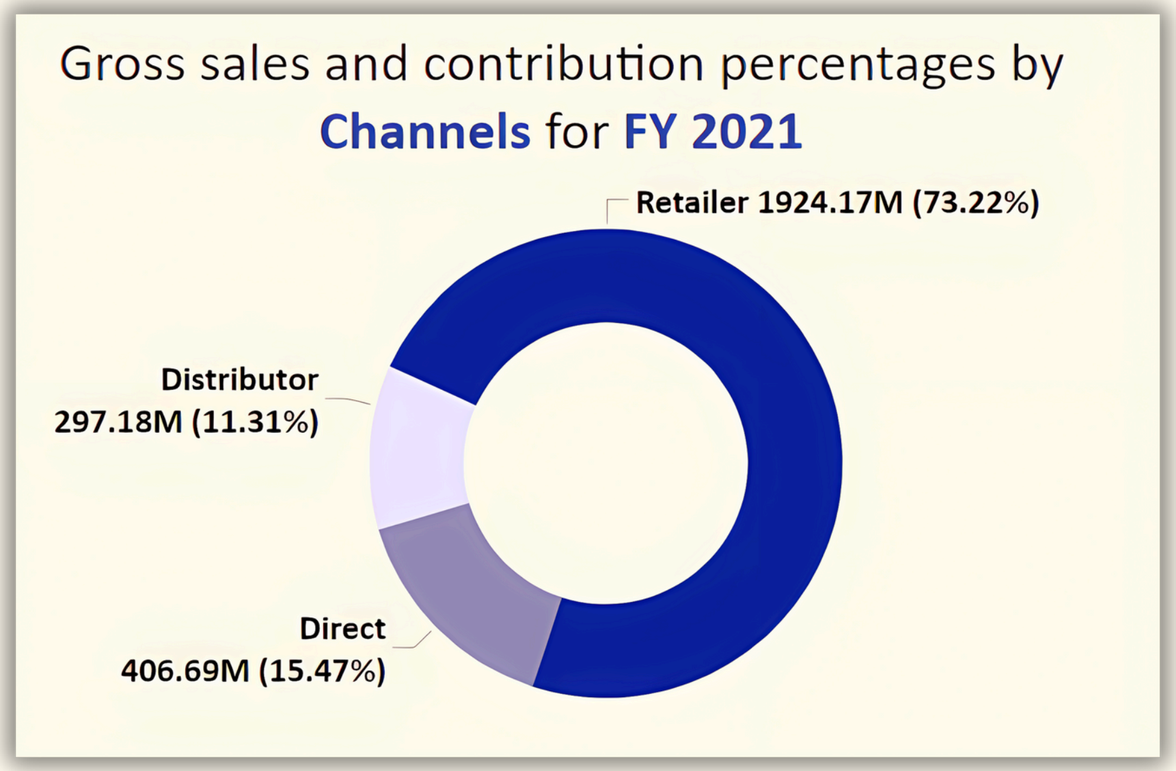
Total sold quantity in **FY 2020** by **Quarter**

Month	Quarter		Total sold quantity
September	Q1	7.01M	1.76M
October	Q1		2.19M
November	Q1		3.05M
January	Q2	6.65M	1.76M
February	Q2		1.70M
December	Q2		3.18M
March	Q3	2.08M	0.24M
April	Q3		0.82M
May	Q3		1.02M
June	Q4	5.04 M	1.56M
July	Q4		1.69M
August	Q4		1.79M



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**

channel	Gross_sales_mln	percentage
Retailer	1924.17 M	73.22 %
Direct	406.69 M	15.48 %
Distributor	297.18 M	11.31 %



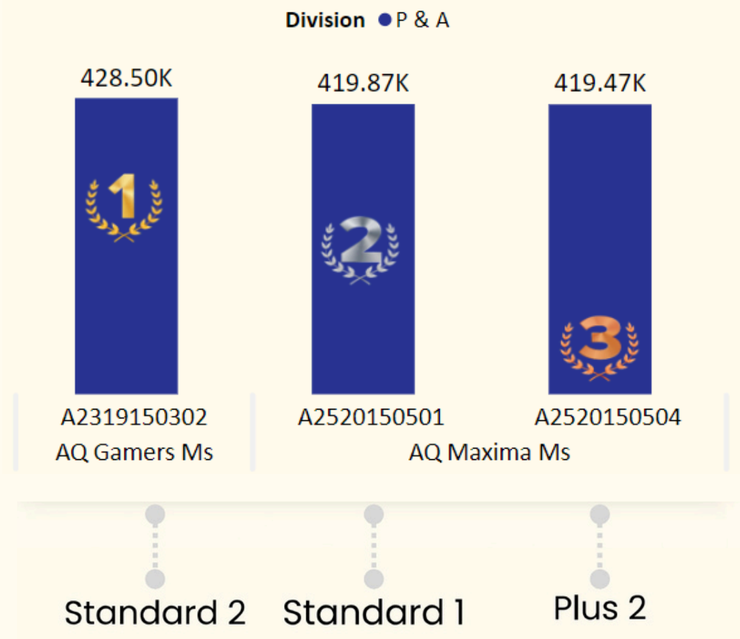
Insights:

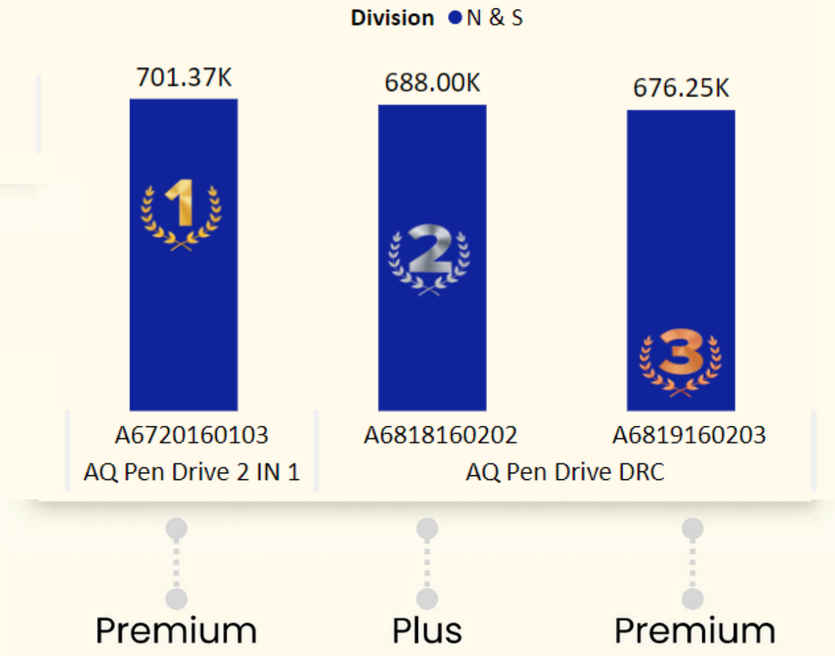
- Channel: "Retailer" helped bring maximum sales to the company with 73.22% as the contribution percentage.
- Channel: "Distributor" makes the least contribution at a percentage of 11.31%.

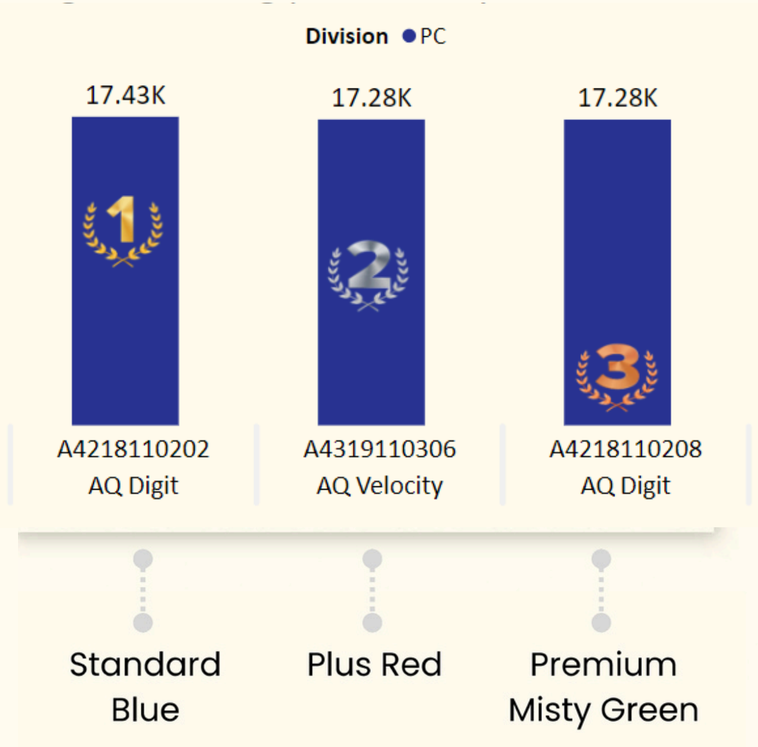
10. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021? The final output contains these fields: **division, product_code, product, total_sold_quantity, rank_order**

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

Insight:
Every division has a product with different variants that appears twice in the top three products by division list.


Division P & A
428.50K
419.87K
419.47K
A2319150302
AQ Gamers Ms
A2520150501
A2520150504
AQ Maxima Ms
Standard 2
Standard 1
Plus 2


Division N & S
701.37K
688.00K
676.25K
A6720160103
AQ Pen Drive 2 IN 1
A6818160202
A6819160203
AQ Pen Drive DRC
Premium
Plus
Premium


Division PC
17.43K
17.28K
17.28K
A4218110202
AQ Digit
A4319110306
AQ Velocity
A4218110208
AQ Digit
Standard Blue
Plus Red
Premium Misty Green