Ad_Hoc Insights

Consumer Goods

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Objectives

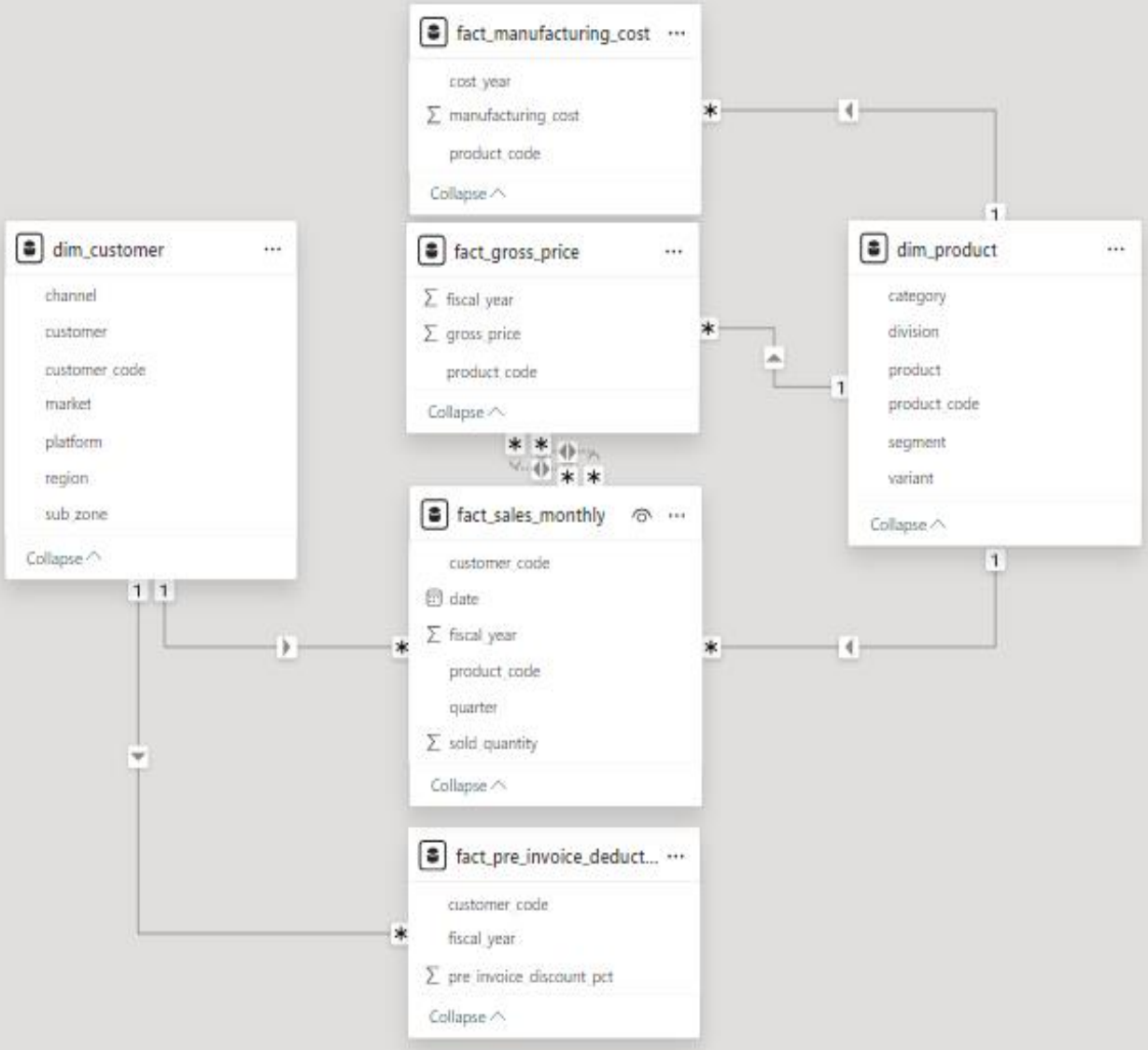
- **AtliQ Hardware**, a leading computer hardware manufacturer in India with a strong international presence, has identified a gap in its ability to derive timely and data-driven insights for informed decision-making.
- To address this, the management plans to expand the data analytics team by hiring junior data analysts.
- To evaluate candidates effectively, Tony Sharma, the Data Analytics Director, has designed a comprehensive **SQL challenge** to assess both technical proficiency and soft skills.
- The challenge aims to uncover insights for 10 specific ad hoc business requests, ensuring candidates demonstrate their analytical and problem-solving capabilities.

Company Details

Atliq Hardware is a computer hardware and accessory manufacturer.

Company’s Market

Data and Requests



Codebasics SQL Challenge

Requests:

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

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

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

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

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

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

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

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

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

codebasics.io

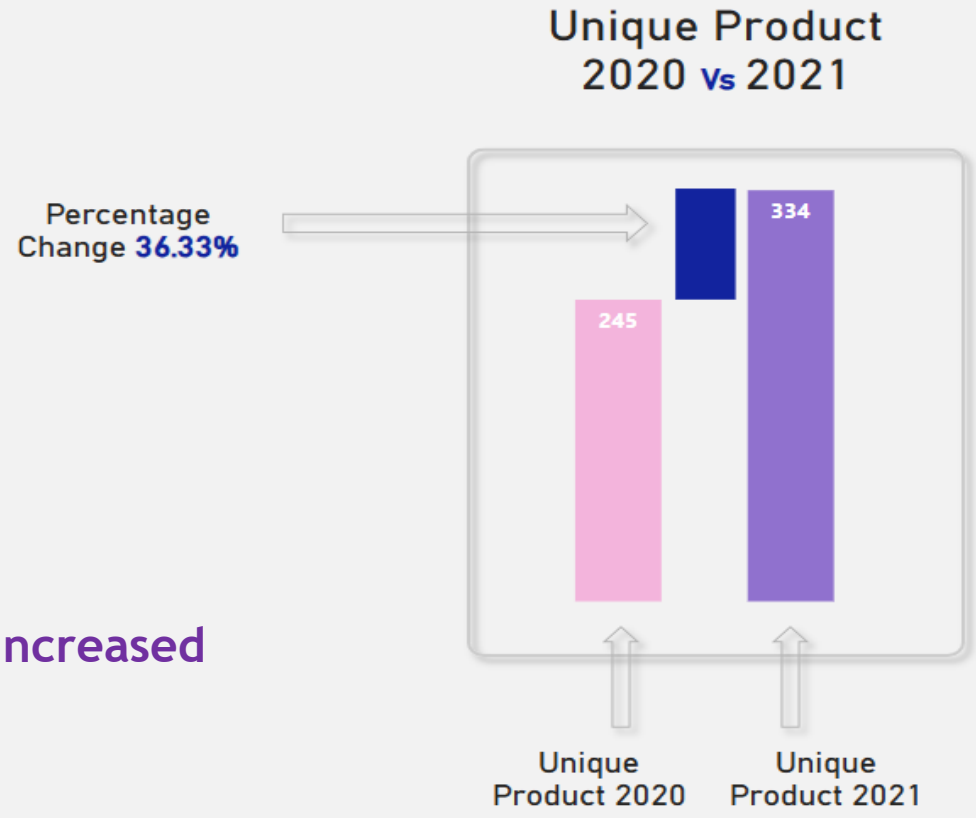
1. Provide the list of markets in which customer “Atliq Exclusive” operates its business in the APAC region

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

unique_product_2020	unique_product_2021	percentage_chg
245	334	36.33

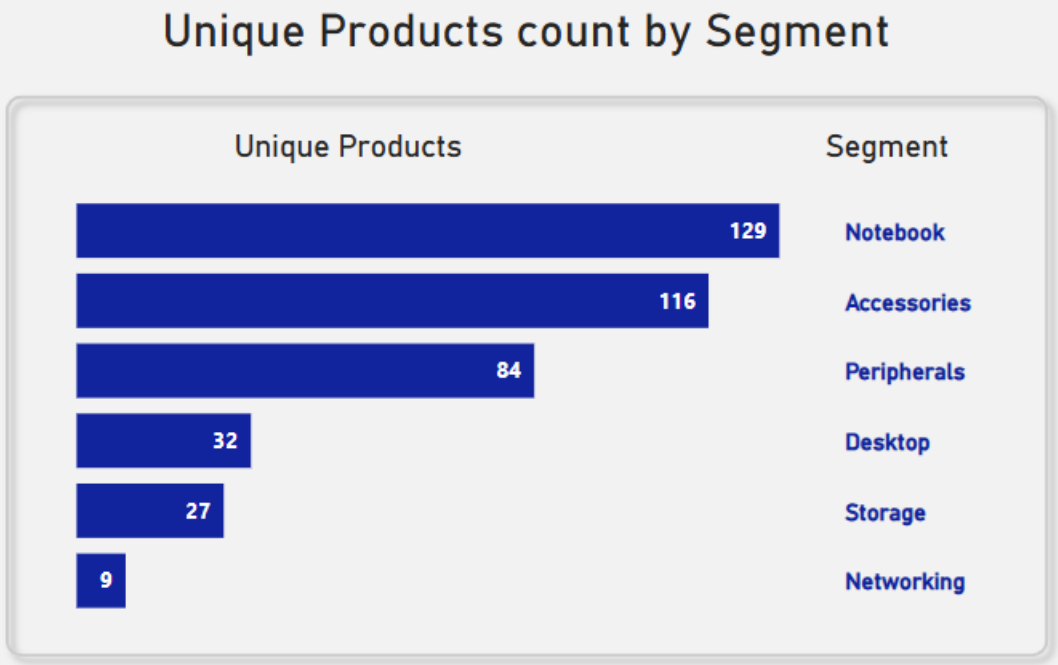


Insights :

- Both demand and production **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

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



Insights:

- Notebook, accessories, and peripherals are showing significant manufacturing growth as compared to desktop, storage and networking.

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

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

Unique Products count by Segment

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

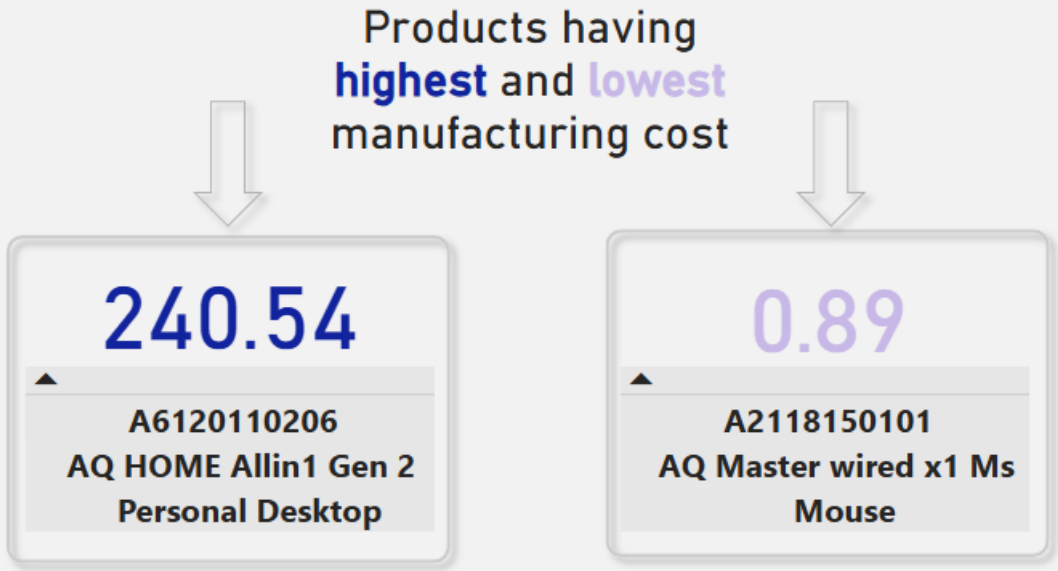
Insights:

- **Accessories** recorded the **highest** increase in production among all segments
- **Storage** and **Networking** exhibiting slower production growth compared to 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

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



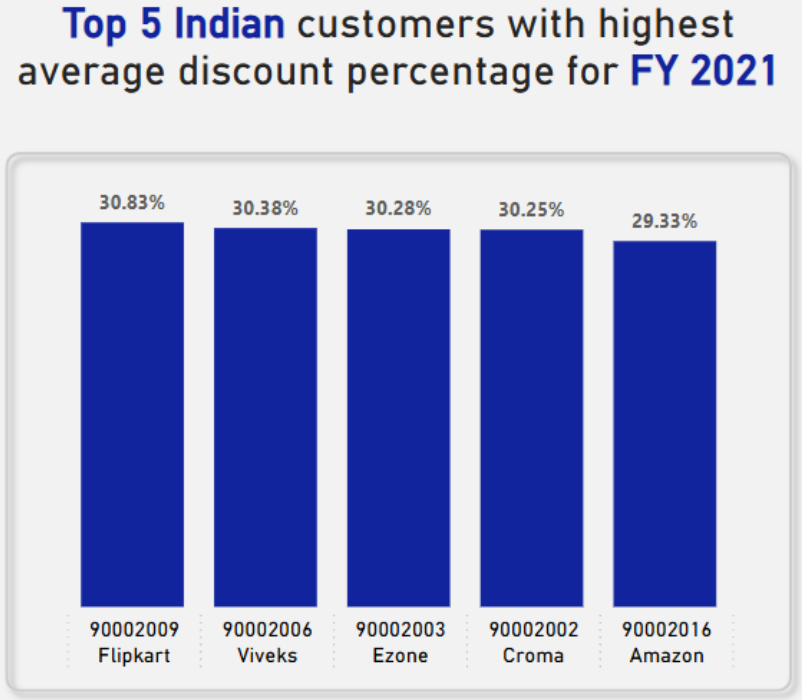
Insights:

- **Mouse:** AQ Master wired x1 Ms has the **lowest** manufacturing cost
- **Personal Desktop:** AQ Home Allin1 Gen 2 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

customer_code	customer	average_discount_pct
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 **smallest** 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

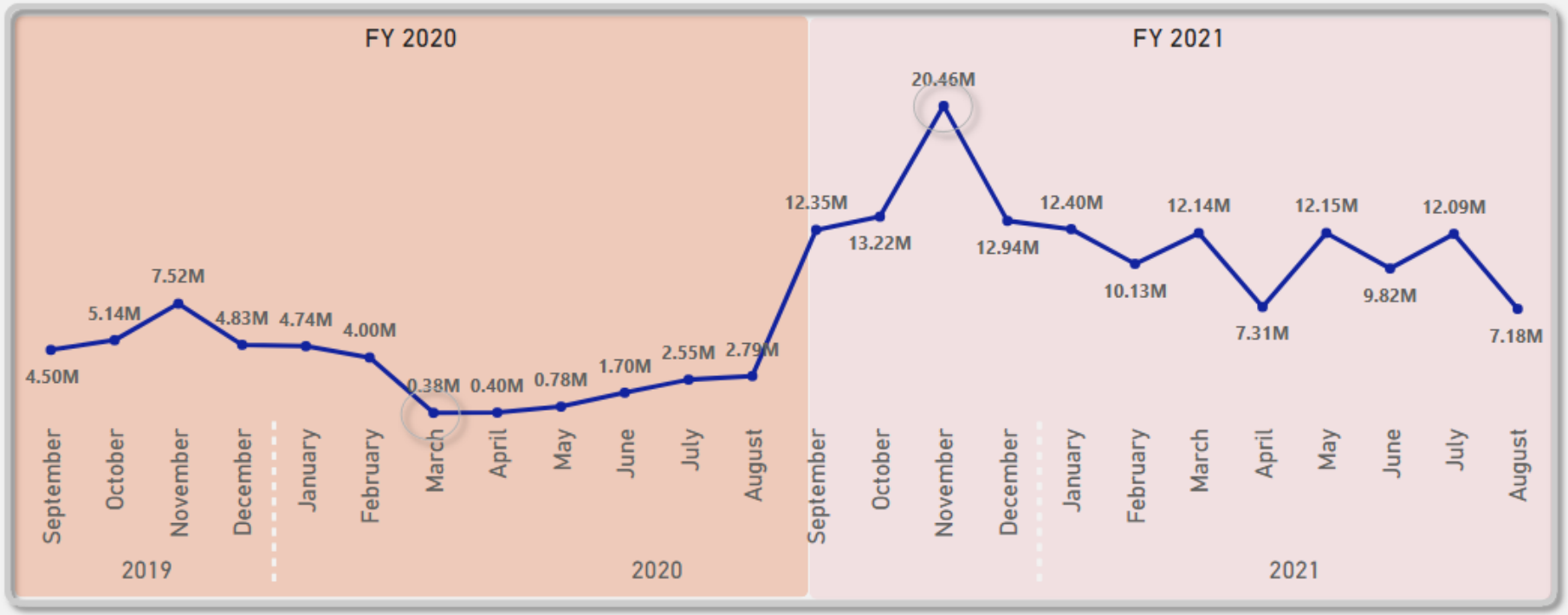
FY 2020
39.33 M

FY 2021
142.19 M

month	year	Gross_sales_amt
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:

- The **lowest** Gross sales total for both fiscal year is in **March 2020**
- The **highest** Gross sales total for both fiscal year is in **November 2020**
- **78.3%** of the total Gross sales is in **FY 2021**



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

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

Quarter	sold_quantity
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087

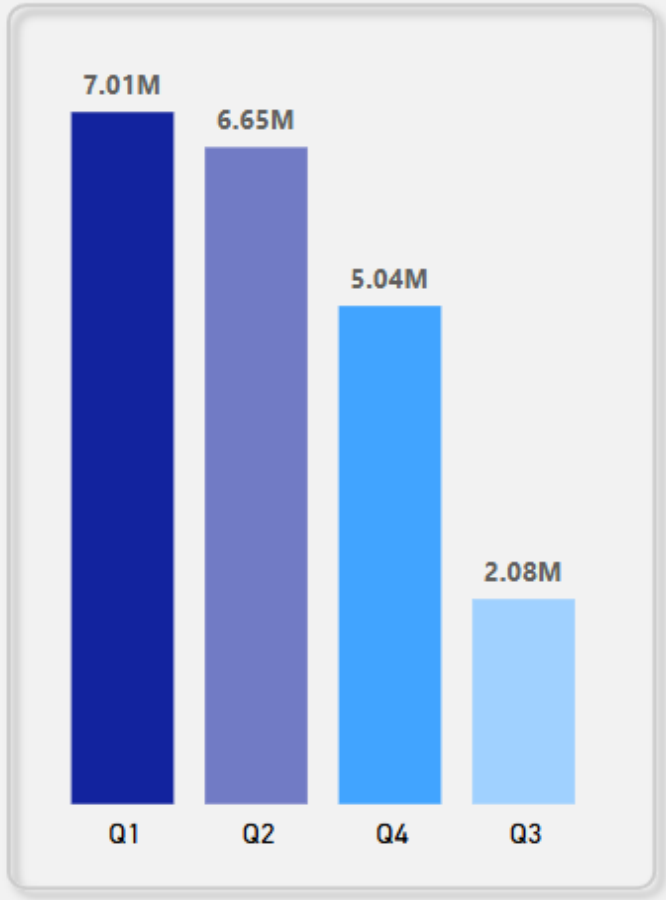
Quarter	sold_quantity
[1] November	3050825
[1] October	2190792
[1] September	1764002
[2] December	3184205
[2] February	1702785
[2] January	1762652
[3] April	819956
[3] March	238961
[3] May	1016170
[4] August	1790193
[4] July	1692575
[4] June	1559773

Insights:

- In FY 2020, Quarter 1 recorded the highest overall units sold, while Quarter 3 had the lowest.
- The peak and lowest sold quantities occurred in December and March, respectively.
- Quarter 1 contributed approximately 34% to the total sold quantity for FY 2020.

Total sold quantity in FY 2020 by Quarter

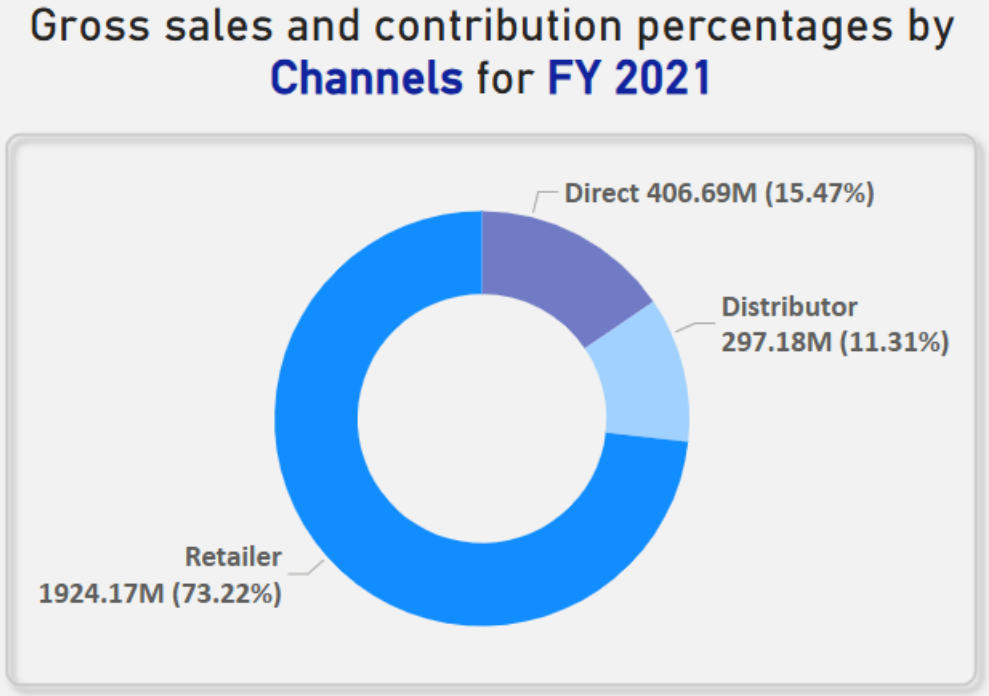
Month	Quarter	Total sold quantity
September	Q1	1.76M
October	Q1	2.19M
November	Q1	3.05M
January	Q2	1.76M
February	Q2	1.70M
December	Q2	3.18M
March	Q3	0.24M
April	Q3	0.82M
May	Q3	1.02M
June	Q4	1.56M
July	Q4	1.69M
August	Q4	1.79M



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	1219.08 M	73.23 %
Direct	257.53 M	15.47 %
Distributor	188.03 M	11.3 %



Insights:

- **Retailer** channel helped bring maximum sales to the company with **73.23%** as the contribution percentage.
- **Distributor** channel makes the least contribution at a percentage of **11.3%**

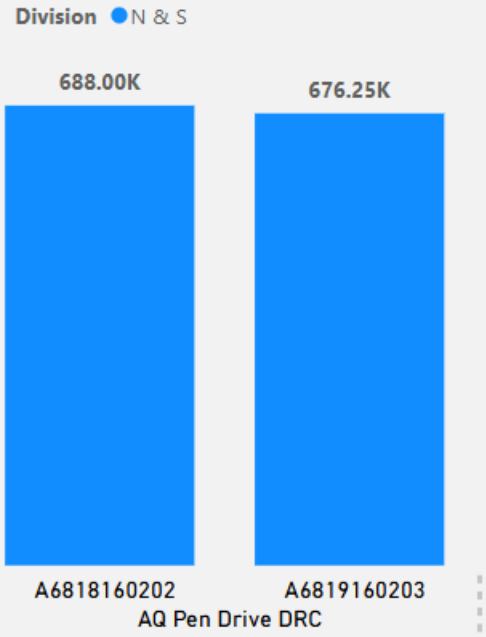
10. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal year 2021? The final output contains these fields,

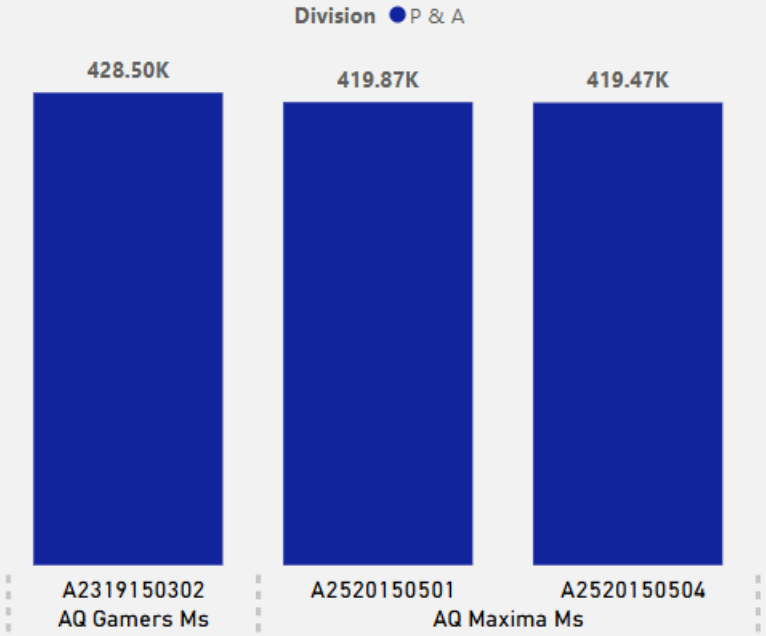
division
product_code
product
total_sold_quantity
rank_order

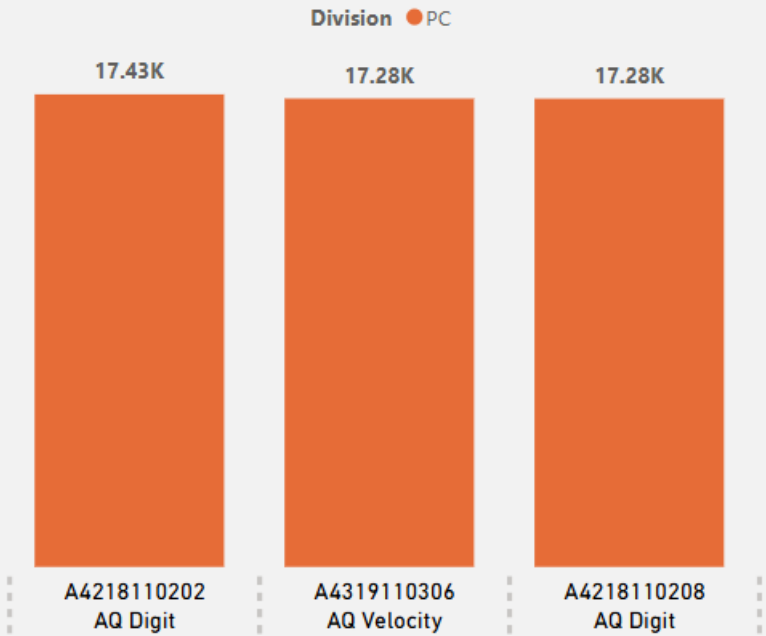
division	product_code	product	total_sold_quantity	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1	701373	1
N & S	A6818160202	AQ Pen Drive DRC	688003	2
N & S	A6819160203	AQ Pen Drive DRC	676245	3
P & A	A2319150302	AQ Gamers Ms	428498	1
P & A	A2520150501	AQ Maxima Ms	419865	2
P & A	A2520150504	AQ Maxima Ms	419471	3
PC	A4218110202	AQ Digit	17434	1
PC	A4319110306	AQ Velocity	17280	2
PC	A4218110208	AQ Digit	17275	3

Insights:

- Each division has a product with different variants that appears twice in its top three products list.


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


Division P & A
428.50K
419.87K
419.47K
A2319150302
AQ Gamers Ms
A2520150501
A2520150504
AQ Maxima Ms


Division PC
17.43K
17.28K
17.28K
A4218110202
AQ Digit
A4319110306
AQ Velocity
A4218110208
AQ Digit

THANK YOU