Ad Hoc Insights

Consumer Goods

CREATED BY

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Objectives

- **AtliQ Hardware** (fictitious corporation) is one of the major computer hardware manufacturers in India, with a strong presence in other nations.
- Nevertheless, the management did note that they do not have sufficient insights to make prompt, wise, and data-informed judgments.
- Plan to expand the data analytics team by adding junior data analysts.
- To assess candidates, Data analytics director, **Tony Sharma** plans to conduct a SQL challenge to evaluate both tech and soft skills.
- The company seeks insights for 10 ad hoc requests.

Company Details

AtliQ Hardware is a computer hardware and accessory manufacturer.
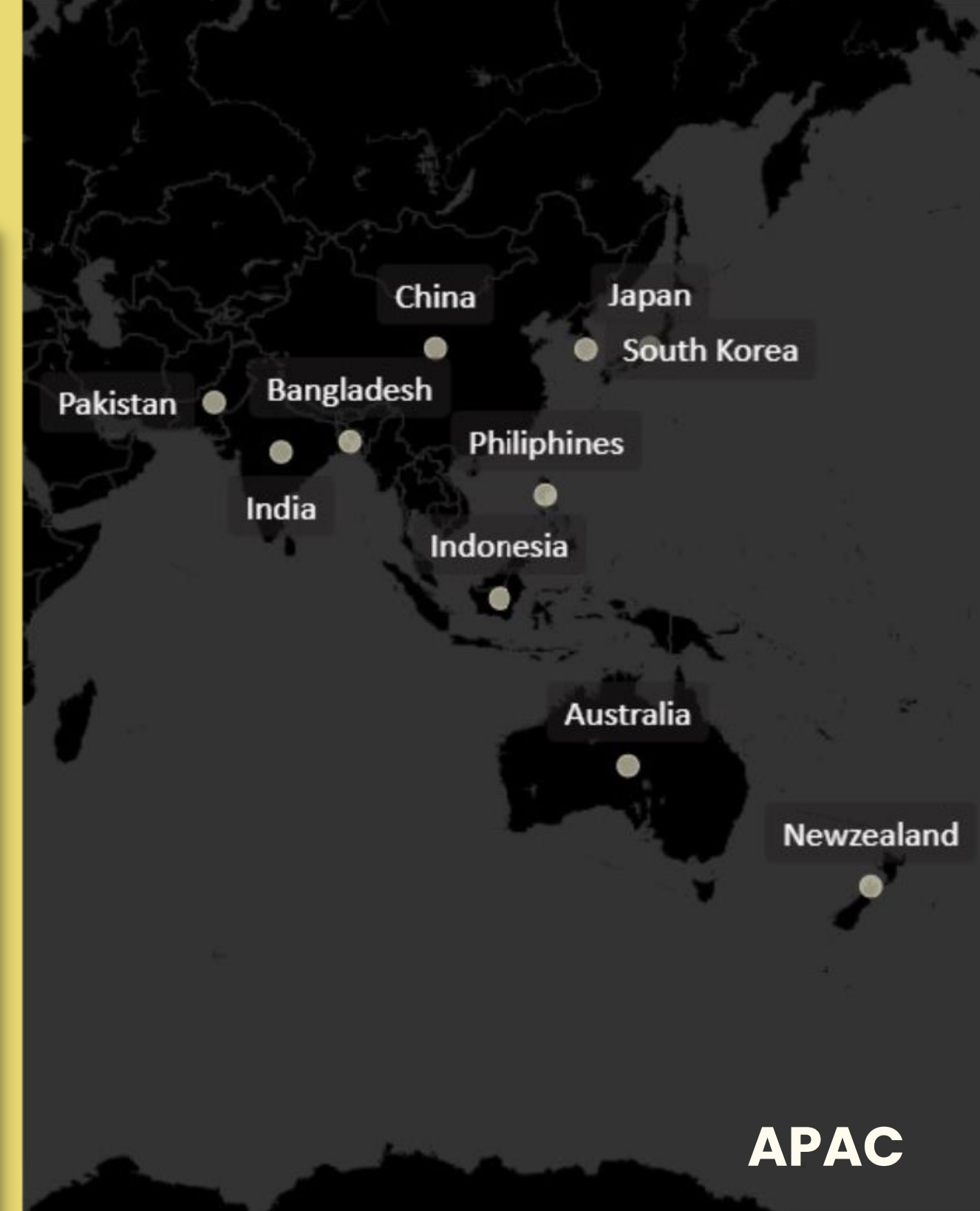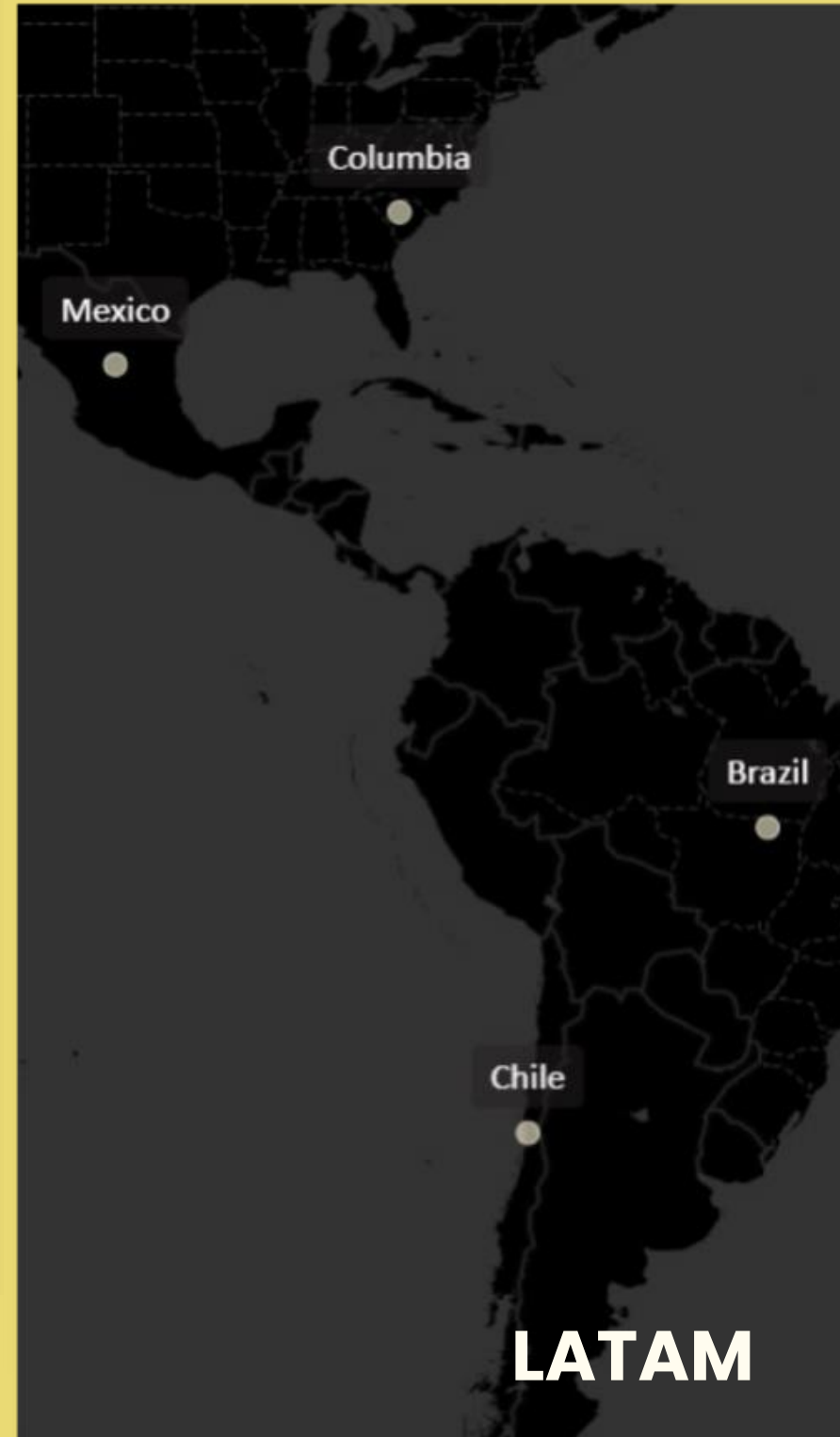
FISCAL YEAR

SEPTEMBER 2019 – AUGUST 2020 **FY 2020**

SEPTEMBER 2020 – AUGUST 2021 **FY 2021**
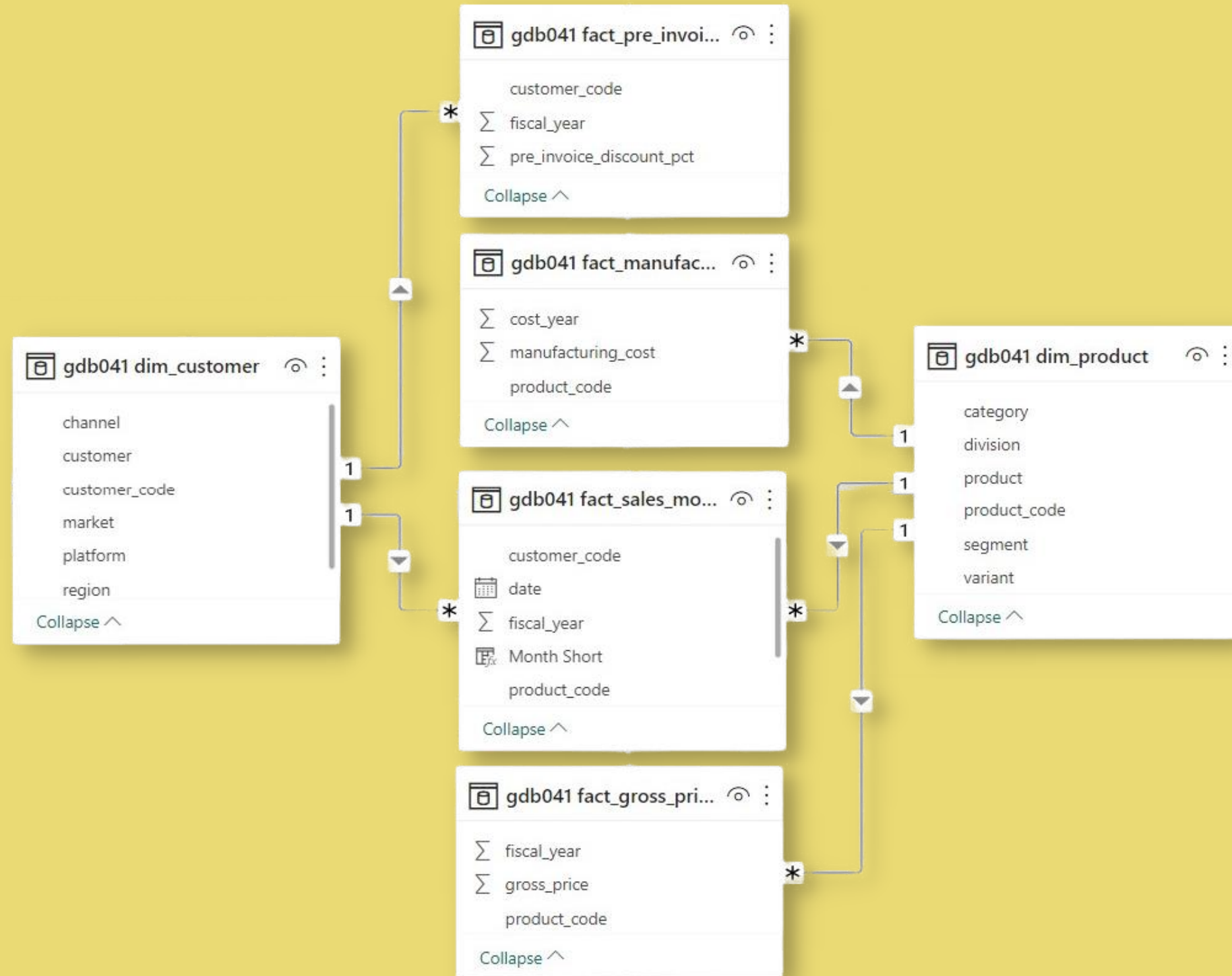
DIVISION -› SEGMENT -› CATEGORY

Category	Segment	Division
External Solid State Drives	Storage	N & S
USB Flash Drives	Storage	N & S
Wi fi extender	Networking	N & S
Batteries	Accessories	P & A
Graphic Card	Peripherals	P & A
Internal HDD	Peripherals	P & A
Keyboard	Accessories	P & A
MotherBoard	Peripherals	P & A
Mouse	Accessories	P & A
Processors	Peripherals	P & A
Business Laptop	Desktop	PC
Business Laptop	Notebook	PC
Gaming Laptop	Notebook	PC
Personal Desktop	Desktop	PC
Personal Laptop	Notebook	PC

Company's Market

NA

LATAM

EU

APAC

AtliQ Hardware

Canada

Columbia

Mexico

Brazil

USA

Chile

Sweden

Norway

Poland

United Kingdom

Germany

Netherlands

Austria

France

Italy

Portugal

Spain

China

Japan

South Korea

Pakistan

Bangladesh

Philipines

India

Indonesia

Australia

Newzealand

Data & 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.
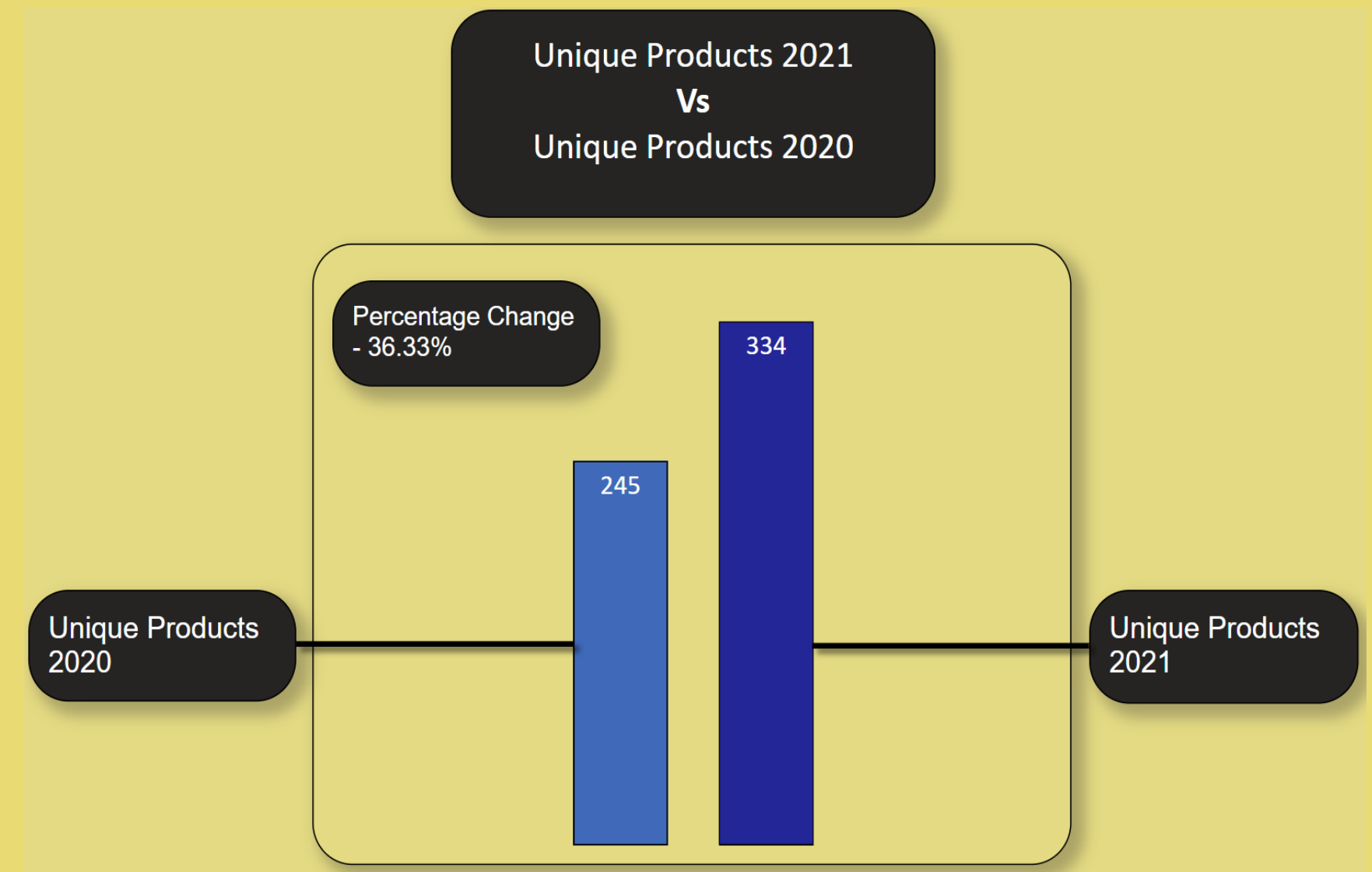

Insight:

- Out of 27 markets, customer named "AtliQ Exclusive" operates in 10 countries 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

unique_product_2020	unique_products_2021	percentage_chg
245	334	36.33

Unique Products 2021
Vs
Unique Products 2020

Percentage Change - 36.33%

334

245

Unique Products 2020
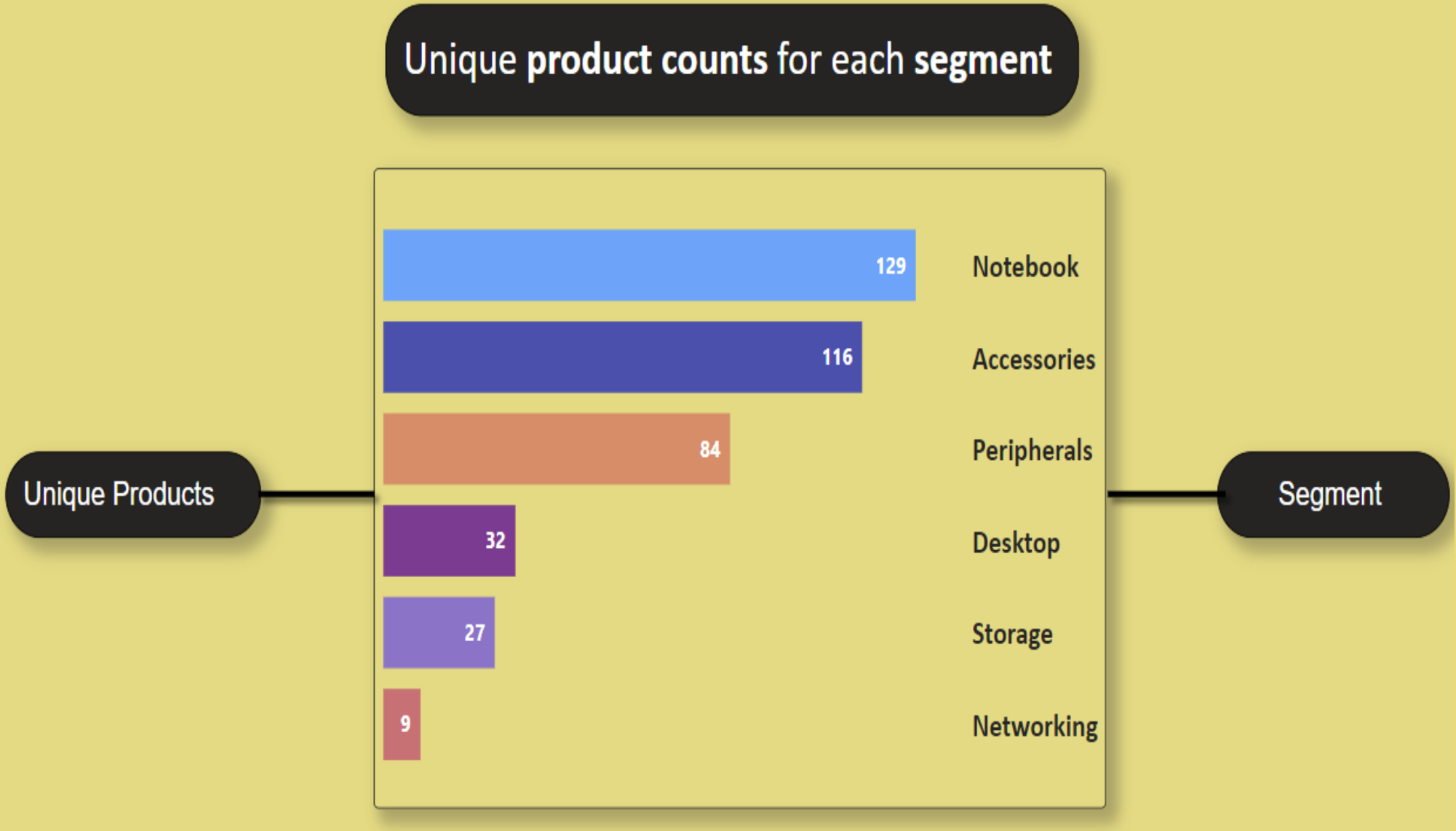
Unique Products 2021

Insight:

- Total product for year 2020 was 245 & 2021 was 334
- Unique product sales experienced a spike of 36.33% in 2021 as compared to previous year.

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

Unique **product counts** for each **segment**

Unique Products

Segment

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

Insights:

- Segments: notebooks, accessories, and peripherals are showing significant manufacturing growth as compared to desktops, 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
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	Unique Products 2020	Unique Products 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

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,
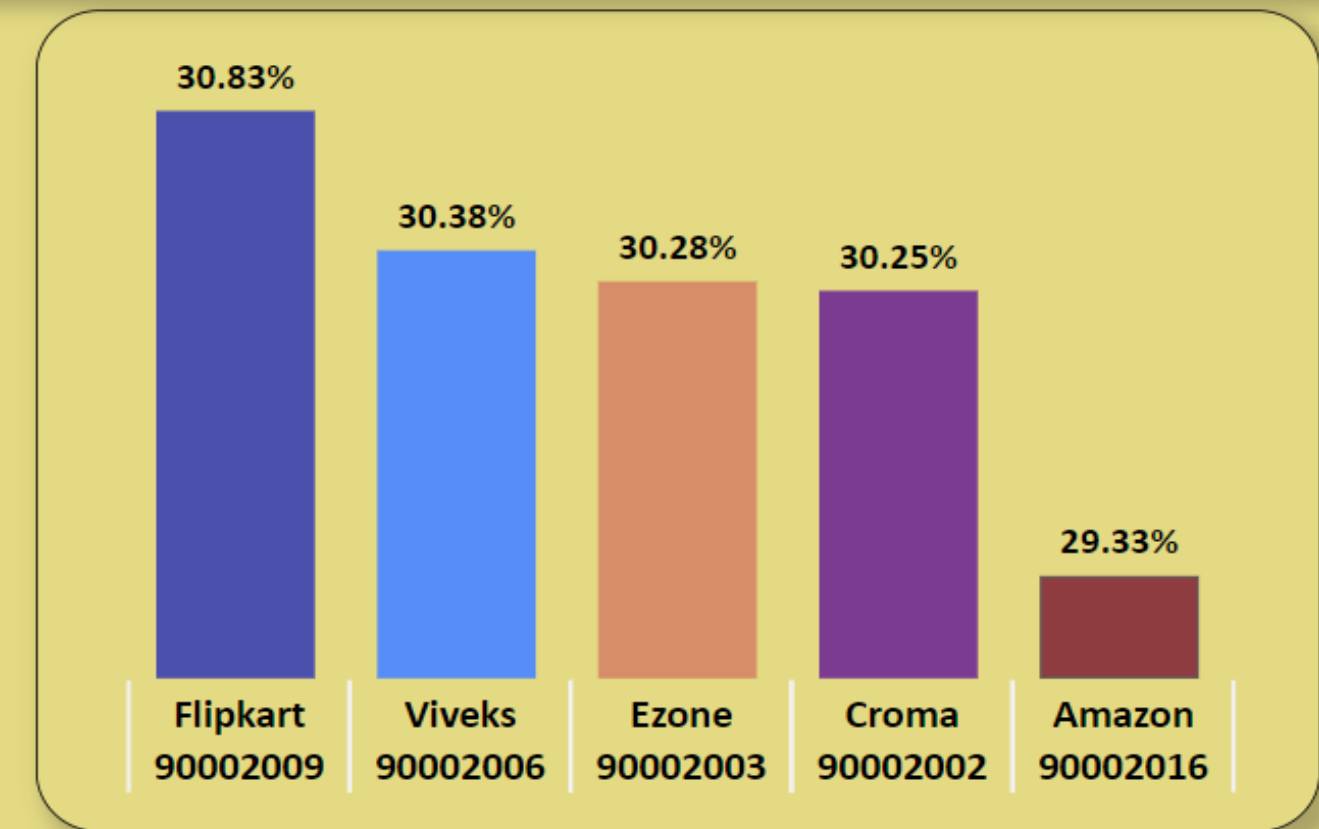product_code
 product
 manufacturing_cost
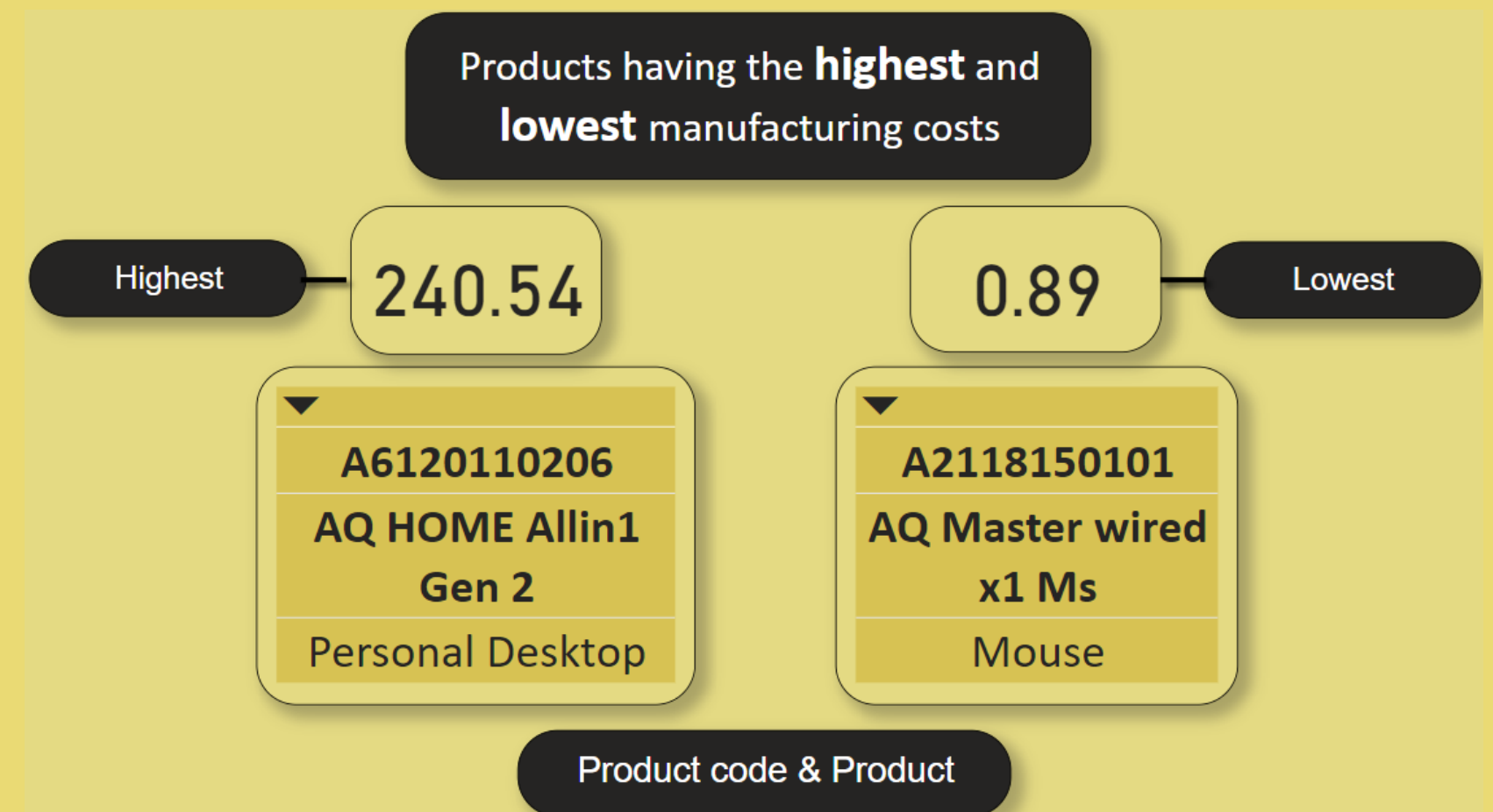
Insights:

- 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

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

Top 5 Indian customers with highest average discount percentage for **FY 2021**

30.83%				
	30.38%	30.28%	30.25%	
				29.33%
Flipkart	Viveks	Ezone	Croma	Amazon
90002009	90002006	90002003	90002002	90002016

Customer & Customer Code

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

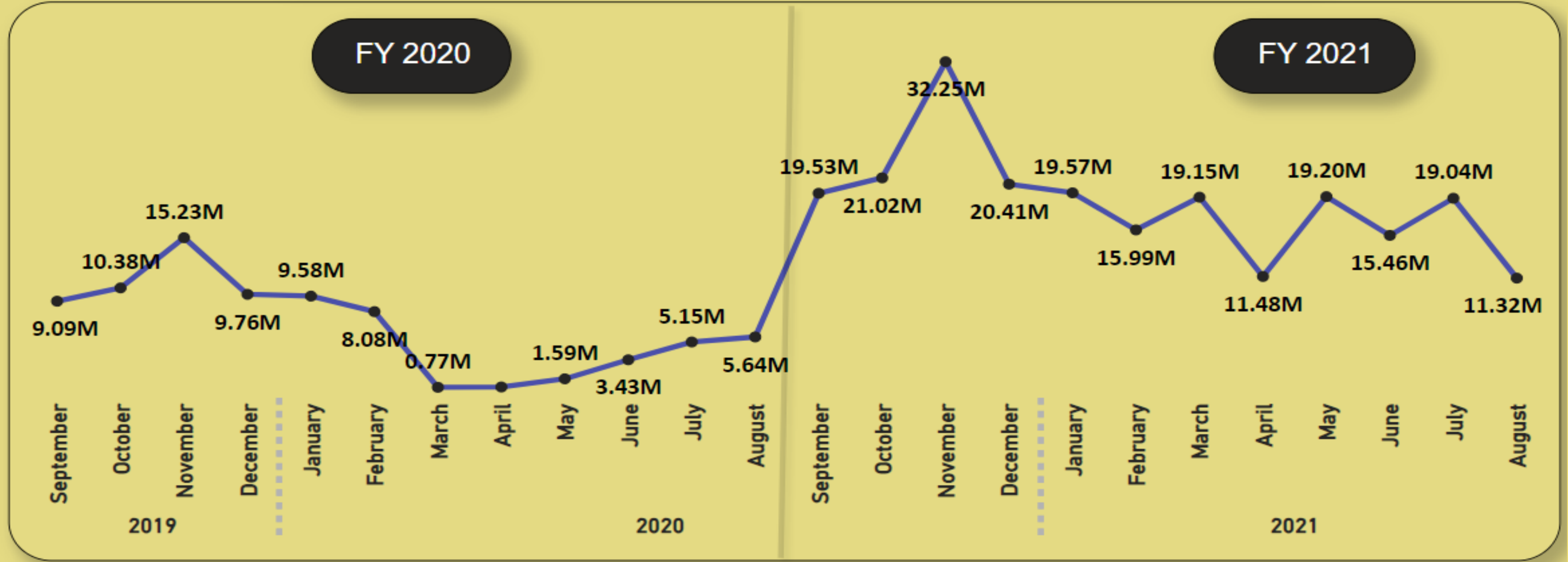## Insights:

- 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**.

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

FY 2020
79.5 M

FY2021
224.4 M

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

FY 2020

FY 2021

15.23M

32.25M

19.53M

19.57M

19.15M

19.20M

19.04M

10.38M

21.02M

9.58M

20.41M

9.09M

9.76M

15.99M

15.46M

8.08M

5.15M

11.48M

11.32M

0.77M

1.59M

5.64M

3.43M

September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August

2019

2020

2021
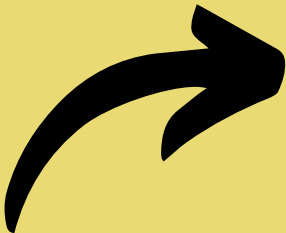
Lowest Gross sales **0.77M**

Highest Gross sales **32.25M**
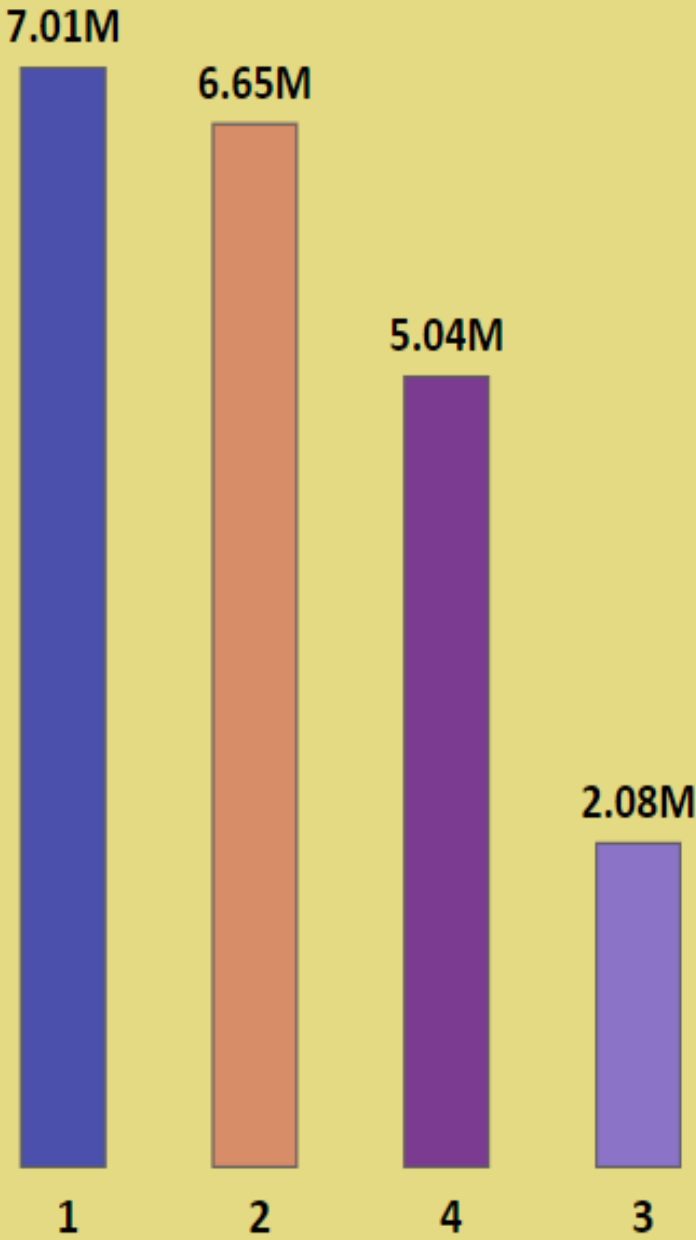
Reasons:

- **COVID-19**
- Global Chip shortage

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

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**.

Total sold quantity in FY 2020 by Quarter

Month	Quarter	Total Sold Quantity
September	1	1.76M
October	1	2.19M
November	1	3.05M
January	2	1.76M
February	2	1.70M
December	2	3.18M
March	3	0.24M
April	3	0.82M
May	3	1.02M
June	4	1.56M
July	4	1.69M
August	4	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,
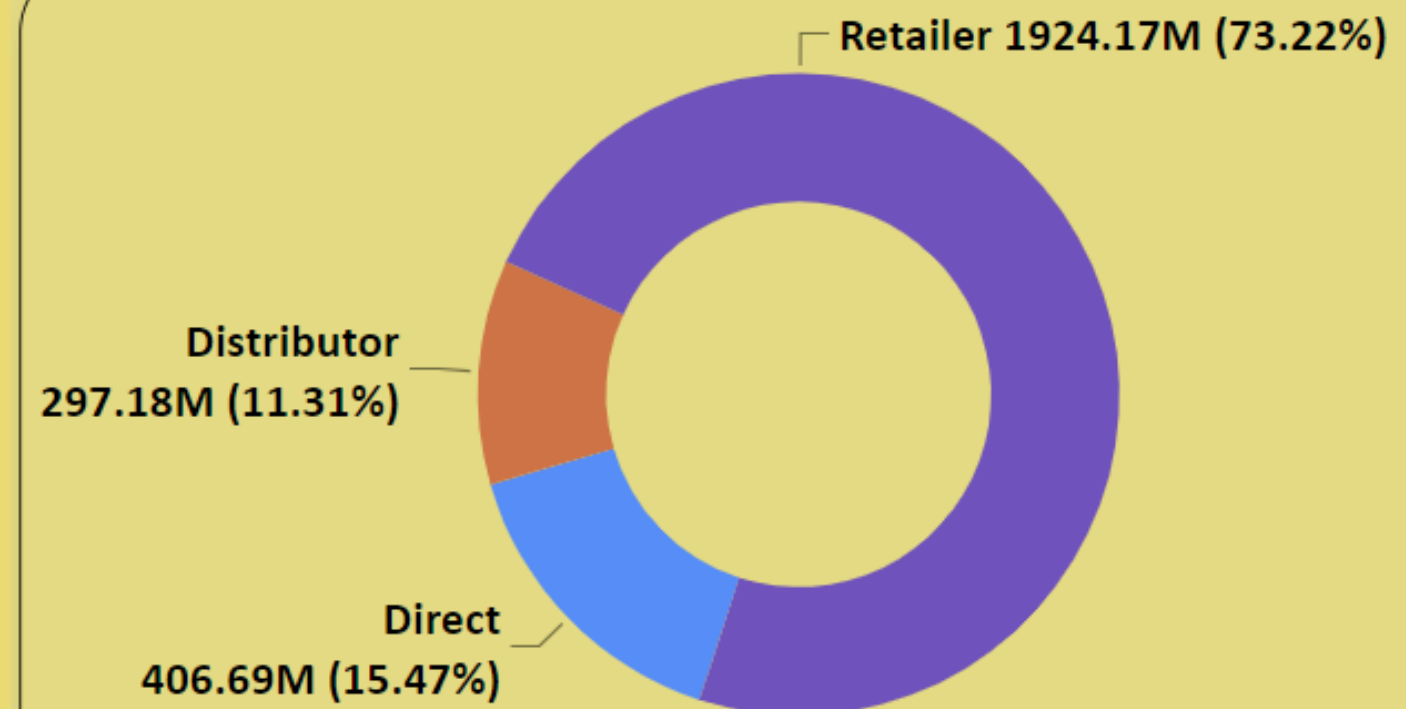 channel
 gross_sales_mln
 percentage

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

Gross sales and contribution percentages by Channels for FY 2021

Retailer 1924.17M (73.22%)
Distributor 297.18M (11.31%)
Direct 406.69M (15.47%)

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,
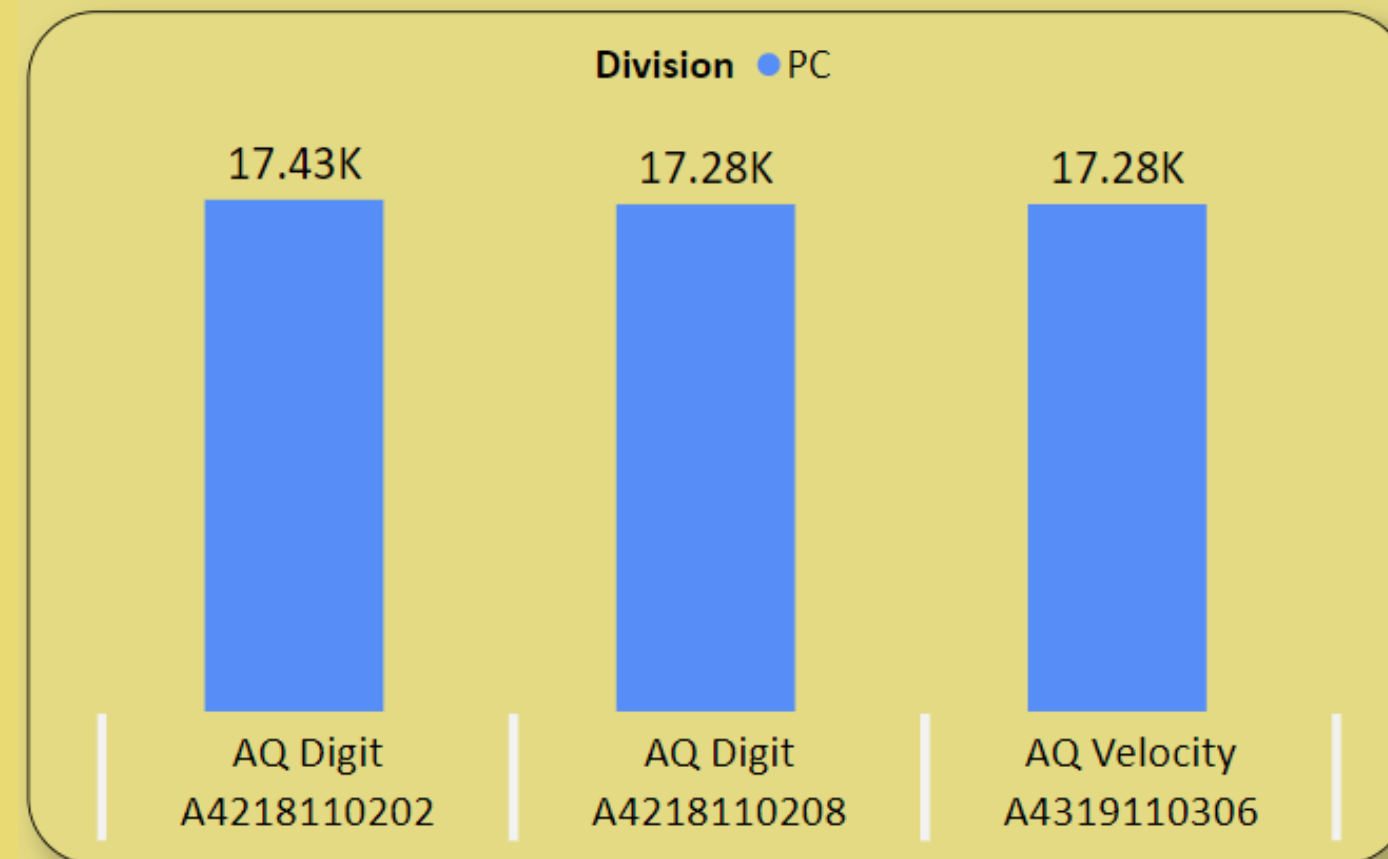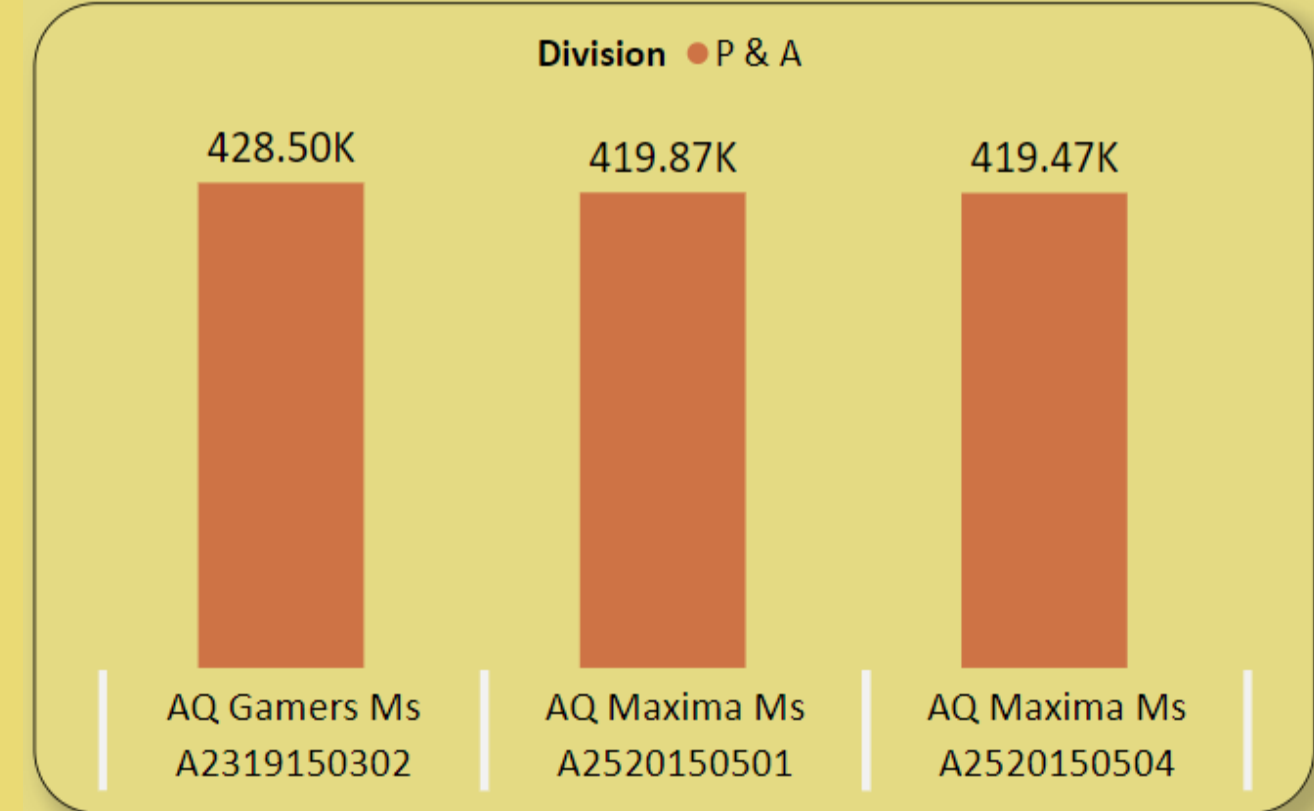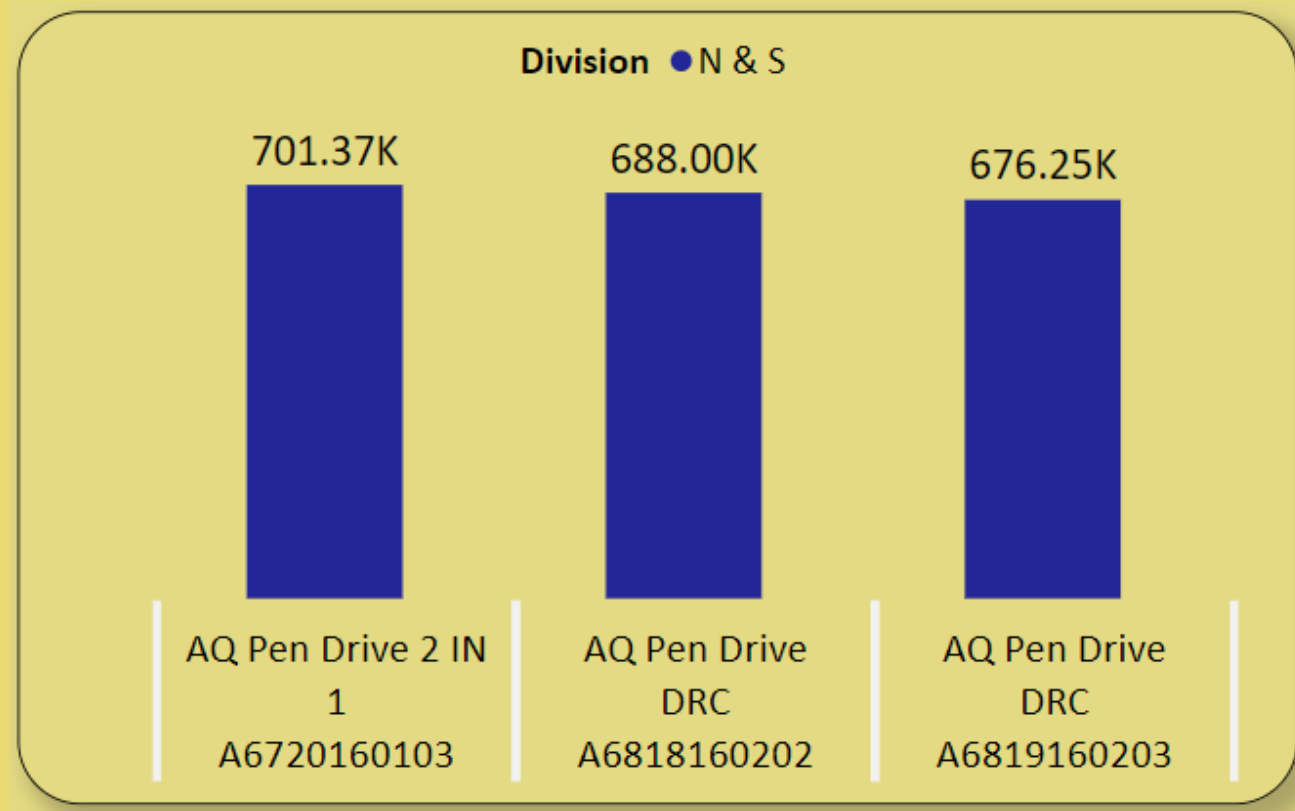division
product_code
product
total_sold_quantity
rank_order

division	product_code	product	Total_sold_quantity	Rank_Order
N & S	A6720160103	AQ Pen Drive 2 IN 1 [Premium]	701373	1
N & S	A6818160202	AQ Pen Drive DRC [Plus]	688003	2
N & S	A6819160203	AQ Pen Drive DRC [Premium]	676245	3
P & A	A2319150302	AQ Gamers Ms [Standard 2]	428498	1
P & A	A2520150501	AQ Maxima Ms [Standard 1]	419865	2
P & A	A2520150504	AQ Maxima Ms [Plus 2]	419471	3
PC	A4218110202	AQ Digit [Standard Blue]	17434	1
PC	A4319110306	AQ Velocity [Plus Red]	17280	2
PC	A4218110208	AQ Digit [Premium Misty Green]	17275	3

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

Top 3 highest-selling products by **Division** for **FY 2021**

Thank you!