



Consumer Goods Ad_Hoc Insights

By Pranit Patil



Atliq Hardwares

About :

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

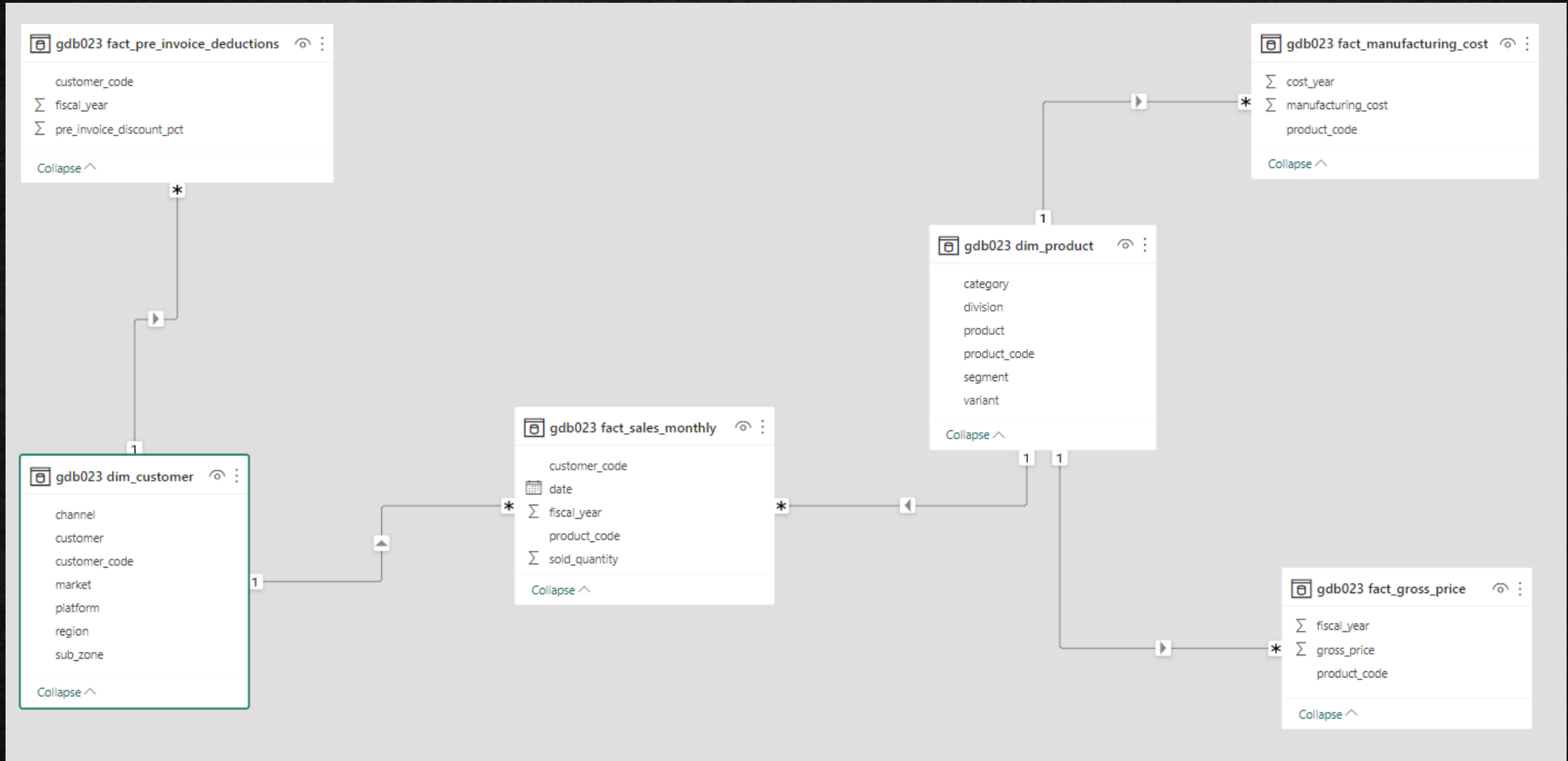
Problem Statement :

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.

Tasks :

1. There are 10 ad hoc requests for which the business needs insights.
2. SQL should be used to answer the requests.
3. Create a presentation for the top-level management which are your target audience.

Data Relationship



About Data

1. The data provided is for the fiscal year 2020 and 2021.
2. There are 6 data tables.
3. The process of normalisation has been applied to the given data to make it as simple as possible.

Dim_product table contains 26 variants of 73 products which are divided into 14 categories which are divided into 6 segments which are divided into 3 divisions.

Fact_sales_monthly contains data of quantity sold monthly for each fiscal year.

Dim_customer contains all the information about the customers like through which channel does the customer comes and about which market, region, sub-zone does the customer belong to.

Fact_manufacturing_cost contains information about the manufacturing costs of products.

Fact_gross_price contains information about the gross price of the product for each fiscal year.


Fact_pre_invoice_deductions contains information about pre invoice deduction percentage for every customer eligible.

List of markets for 'Atliq Exclusive' in APAC region.

Request 1:

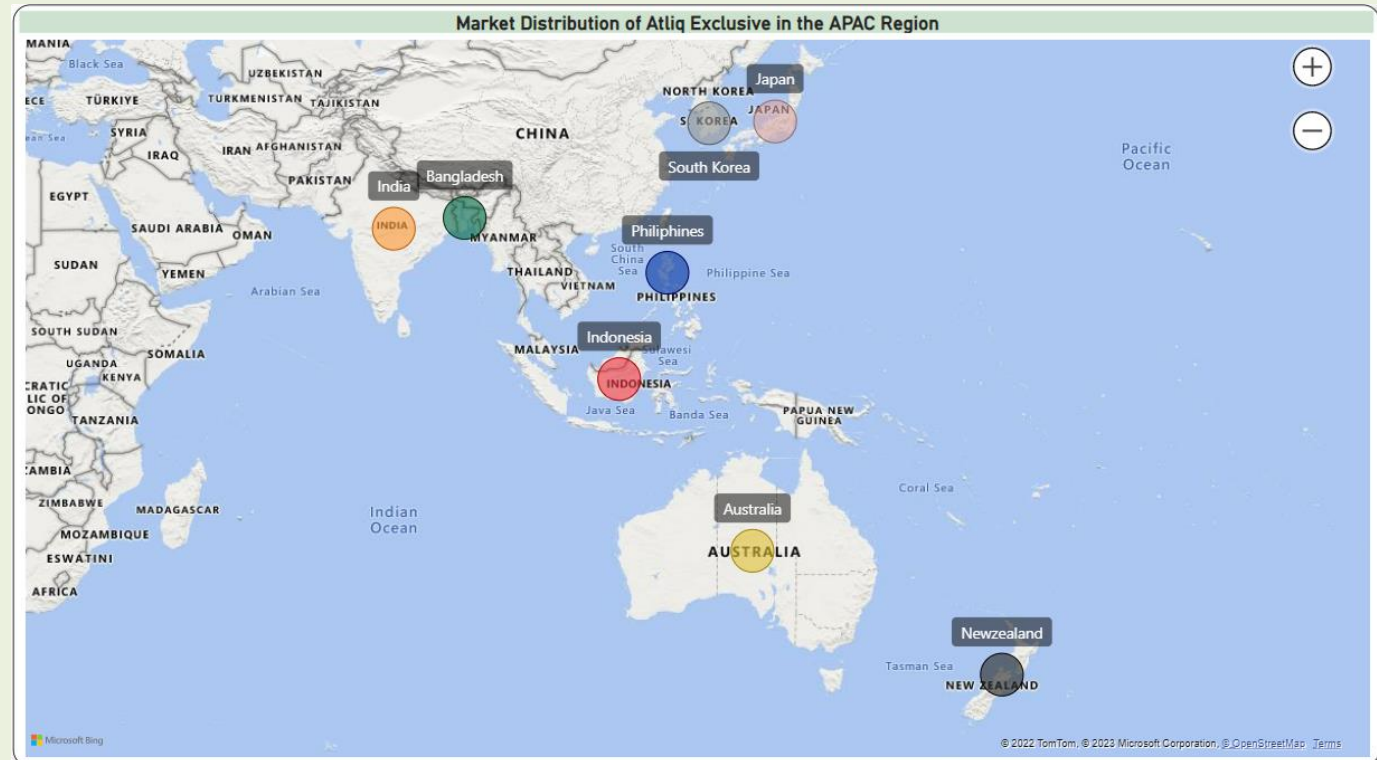
Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.

Output:

Result Grid		
	market	
▶	India	
	Indonesia	
	Japan	
	Philippines	
	South Korea	
	Australia	
	Newzealand	
	Bangladesh	

Visualising the output

Result Grid	
	market
▶	India
	Indonesia
	Japan
	Philippines
	South Korea
	Australia
	Newzealand
	Bangladesh



Insights:

- Atliq Exclusive is spread in almost all the major markets of APAC region with **India** having the biggest market share.



Percent increase of unique products 2021 vs 2020

Request 2:

What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields:

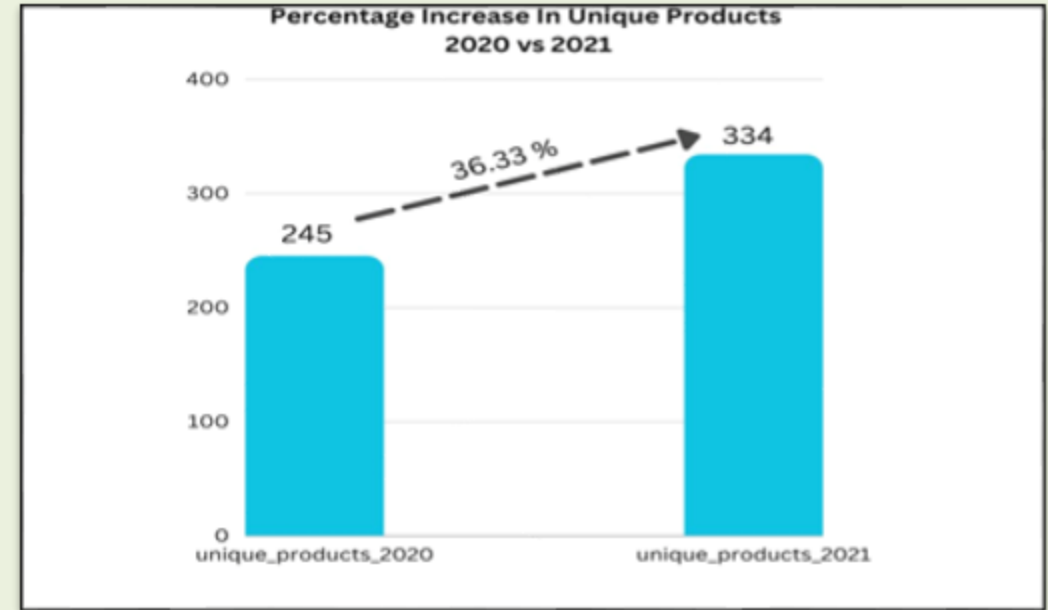
unique_products_2020,
unique_products_2021,
percentage_chng.

Output:

Result Grid  Filter Rows: <input type="text"/>				Export:  Wrap Cell	
	unique_products_2020	unique_products_2021	percentage_chng		
▶	245	334	36.3265		

Visualising the output

Result Grid	Filter Rows:	Export:	Wrap C
	unique_products_2020	unique_products_2021	percentage_chng
▶	245	334	36.3265



Insights:

- We can see the rise of **36.33%** in unique products from 2020 to 2021.
- Atliq Hardwares is **increasing the variety of unique products** to cater the needs of different types of customers, which will **increase it's market size and grow the business**.
- Surely these new products are introduced after doing market research which means Atliq Hardwares is **creating in-demand products and increasing it's product strength**.



Unique product count for each segment

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:

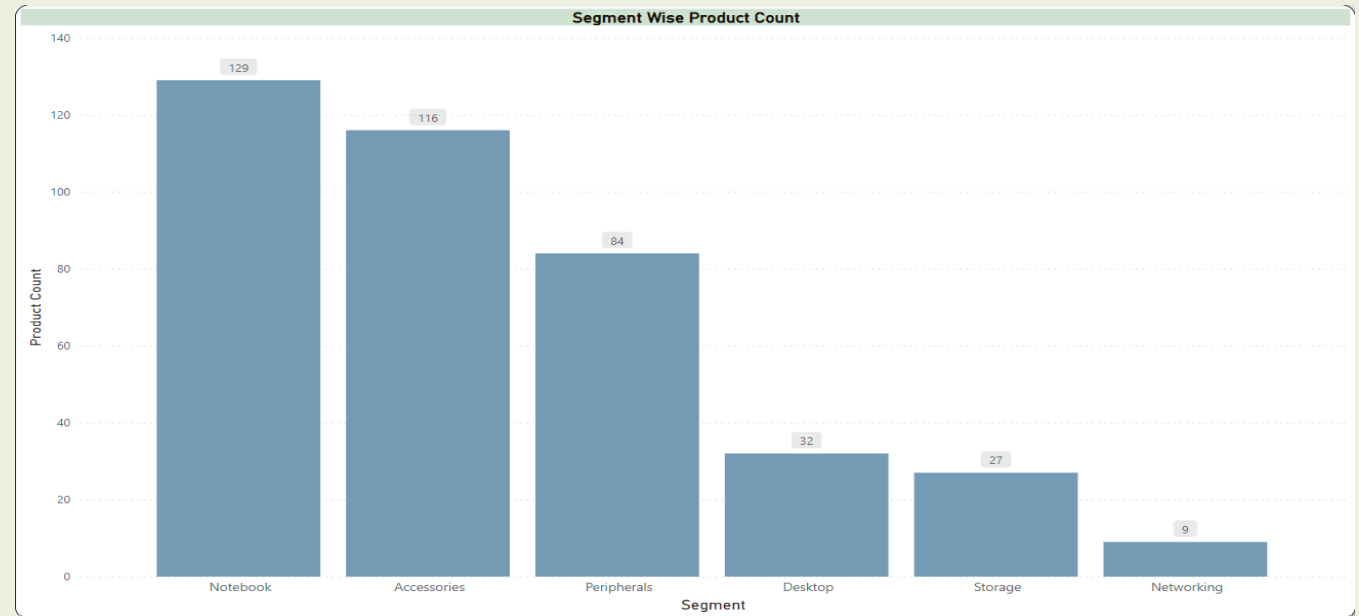
Segment,
product_count.

Output:

Result Grid   Filter Rows:		
	segment	product_count
▶	Notebook	129
	Accessories	116
	Peripherals	84
	Desktop	32
	Storage	27
	Networking	9

Visualising the output

Result Grid	Filter Rows:
segment	product_count
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9



Insights:

- Notebook which comes under the division PC (Personal Computer) has the highest number of unique products which includes categories like gaming laptop, business laptop, personal laptop etc. which indicates there is high demand of Atliq's personal computers.
- Networking of division N & S (Networking and Storage) has least number of unique products.

Increase in product count in segment 2020 vs 2021

Request 4:

Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields:

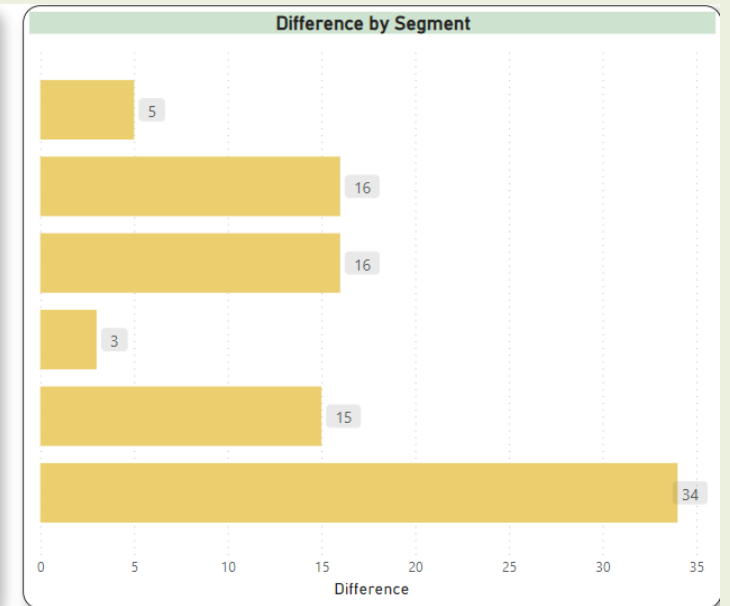
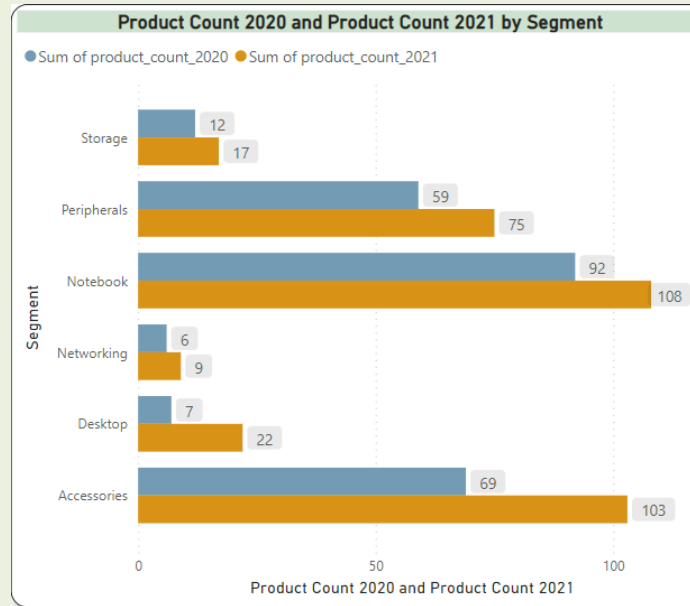
segment,
product_count_2020,
product_count_2021,
difference.

Output:

Result Grid	Filter Rows:	Export:	Wrap Cell Co
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

Visualising the output

Result Grid	Filter Rows:	Export:	Wrap Cell Co
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:

- As of now we know that Atliq Hardwares does its market research and because of which they have increased the number of unique products, also we know which segment has the most demand by counting the number of unique products for each segment, to understand it further we have to see which segment has seen the most growth for that we have this follow up request.
- As we can see Accessories segment of division P & A (Peripherals and Accessories) has seen the most growth with the increase of 34 products, which indicates the demand for Atliq's accessories is increasing.
- Whereas, the Networking segment has seen the least amount of growth of only 3 products.



Products with highest and lowest manufacturing cost

Request 5:

Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields:

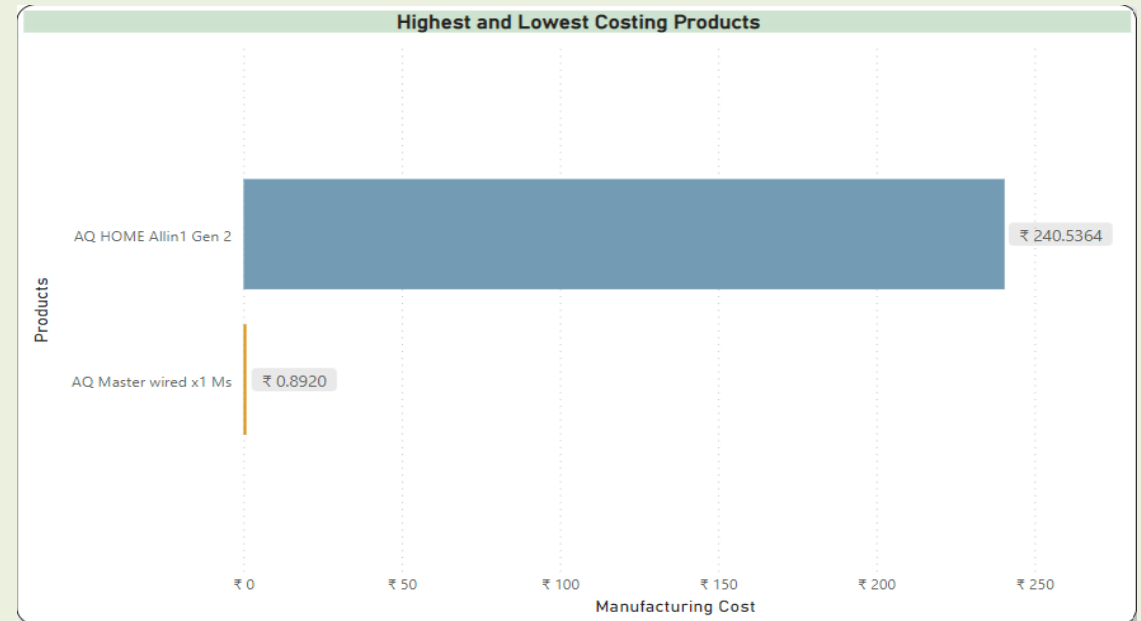
product_code,
Product,
manufacturing_cost

Output:

Result Grid 				Filter Rows: <input type="text"/>		Export: 
	product_code	product	manufacturing_cost			
▶	A2118150101	AQ Master wired x1 Ms	0.8920			
	A6120110206	AQ HOME Allin1 Gen 2	240.5364			

Visualising the output

Result Grid	Filter Rows:	Export:
product_code	product	manufacturing_cost
A2118150101	AQ Master wired x1 Ms	0.8920
A6120110206	AQ HOME Allin1 Gen 2	240.5364



Insights:

- AQ Master wired x 1 Ms which the lowest costing product is a Mouse which is counted as an accessory, since we know that the demand for accessories is increasing because of which there can be mass production and that cuts costs.
- On the other hand, AQ home Alin 1 Gen 2 which is the highest costing product is a Desktop which comes under desktop segment, in our third request we observed that the demand for desktop doesn't seem to be that high which leads to limited production which increases costs.
- Note: The above insights are based on the acquired result for the 4th request we don't know the profits from these products, which might change our point of view.

Top 5 customers in Indian market with avg. high pre invoice discount for 2021

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:

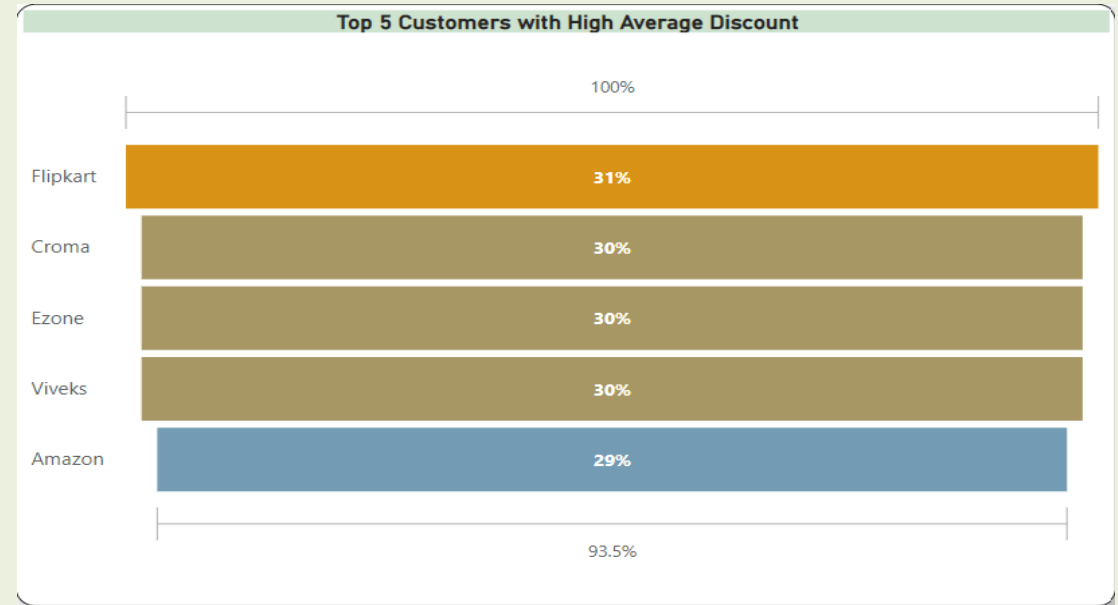
customer_code, customer, average_discount_percentage.

Output:

Result Grid				Filter Rows:	Export:	W
	customer_code	customer	average_discount_percentage			
▶	90002009	Flipkart	31%			
	90002006	Viveks	30%			
	90002002	Croma	30%			
	90002003	Ezone	30%			
	90002016	Amazon	29%			

Visualising the output

Result Grid			
Filter Rows:			
Export:			
	customer_code	customer	average_discount_percentage
▶	90002009	Flipkart	31%
	90002006	Viveks	30%
	90002002	Croma	30%
	90002003	Ezone	30%
	90002016	Amazon	29%



Insights:



- The top 5 customers with average high discount are Flipkart, Croma, Ezone, Viveks, Amazon which indicates these are **Atliq Hardwares most valued customers**.
- The discount percentages are almost same with 2% difference in the 1st and 5th customer.
- This data is for **Indian market for the fiscal year 2021**.

Monthly Gross Sales for 'Atliq Exclusive'

Request 7:

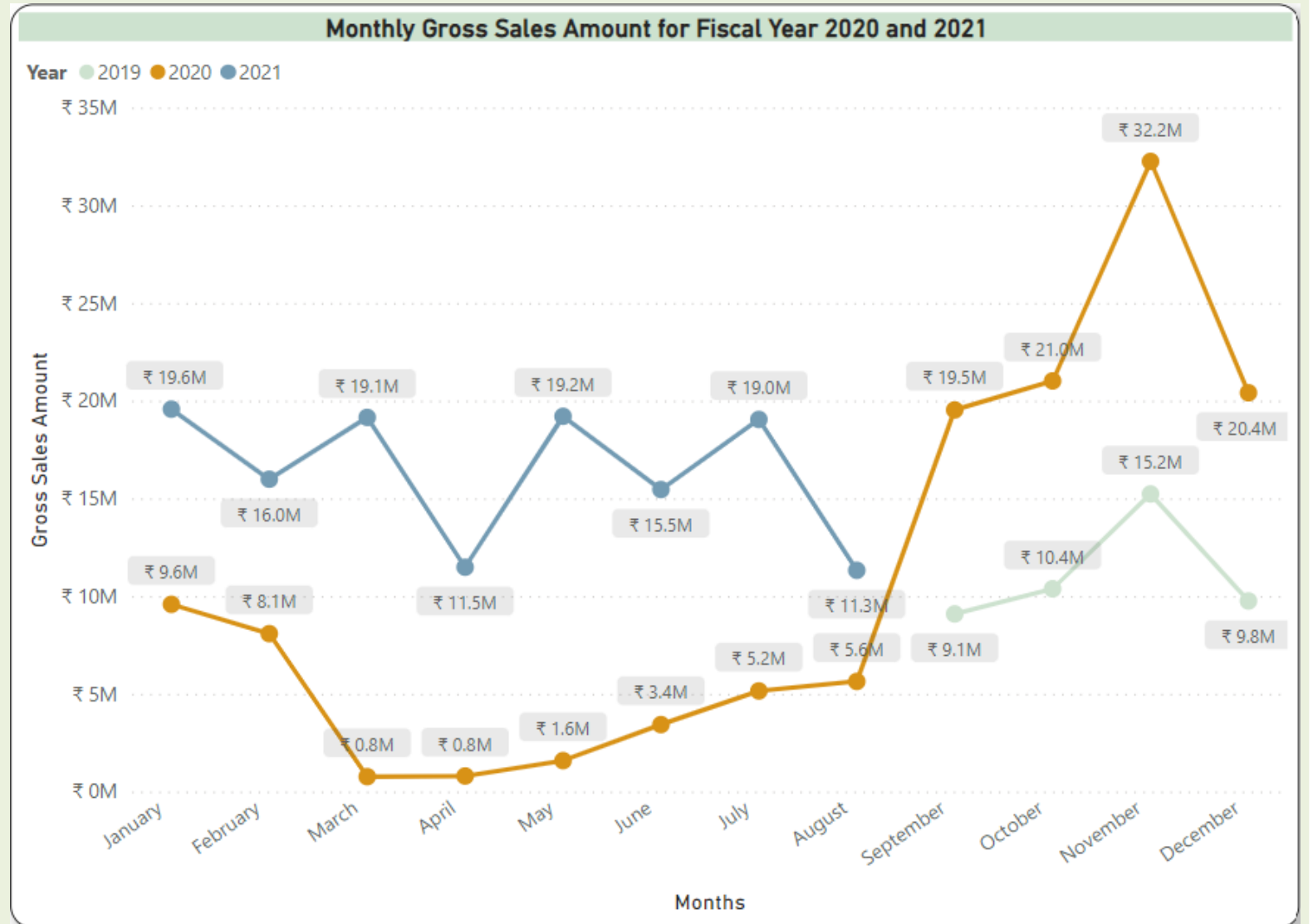
Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month. This analysis helps to get an idea of low and high-performing months and take strategic decisions. The final report contains these columns: Month, Year, Gross sales Amount.

Output:

Result Grid   Filter Rows: <input type="text"/>			
	Month	Year	Gross_sales_Amount
▶	9	2019	9092670.85
	10	2019	10378637.79
	11	2019	15231895.21
	12	2019	9755795.21
	1	2020	9584951.90
	2	2020	8083995.87
	3	2020	766976.28
	4	2020	800072.08
	5	2020	1586963.98
	6	2020	3429736.75
	7	2020	5151815.71
	8	2020	5638281.79
	9	2020	19530271.90
	10	2020	21016218.96
	11	2020	32247290.68
	12	2020	20409063.68
	1	2021	19570702.79
	2	2021	15986605.01
	3	2021	19149625.28
	4	2021	11483530.74
	5	2021	19204310.02
	6	2021	15457580.57
	7	2021	19044969.71
	8	2021	11324548.87

Visualising the output

Result Grid				Filter Rows:
	Month	Year	Gross_sales_Amount	
9		2019	9092670.85	
10		2019	10378637.79	
11		2019	15231895.21	
12		2019	9755795.21	
1		2020	9584951.90	
2		2020	8083995.87	
3		2020	766976.28	
4		2020	800072.08	
5		2020	1586963.98	
6		2020	3429736.75	
7		2020	5151815.71	
8		2020	5638281.79	
9		2020	19530271.90	
10		2020	21016218.96	
11		2020	32247290.68	
12		2020	20409063.68	
1		2021	19570702.79	
2		2021	15986605.01	
3		2021	19149625.28	
4		2021	11483530.74	
5		2021	19204310.02	
6		2021	15457580.57	
7		2021	19044969.71	
8		2021	11324548.87	



Insights:

- By comparing the monthly gross sales we found out the Atliq Hardwares have grown their business substantially, which shows that the market research which we discussed earlier is working.
- We can observe that the months September, October, November have the most number of sales in years 2019 and 2021 this is also the first quarter of Atliq Hardwares, since the fiscal year for Atliq starts from September month.
- Months March, April, May, June, July have the highest growth compared to other months.
- The peak sales happened in the month of November for both the years.

Quarter with highest quantity sold in 2020

Request 8:

In which quarter of 2020, got the maximum total_sold_quantity? The final output contains these fields sorted by the total_sold_quantity:

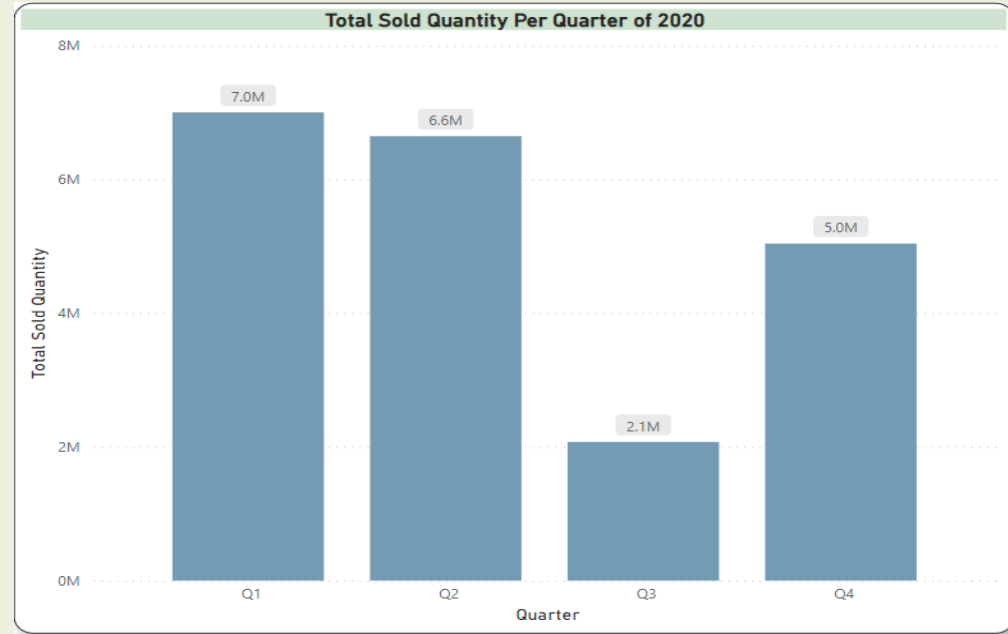
Quarter,
total_sold_quantity.

Output:

Result Grid			Filter Rows:
	Quarter	total_sold_quantity	
►	Q1	7005619	
	Q2	6649642	
	Q4	5042541	
	Q3	2075087	

Visualising the output

Result Grid			Filter Rows:
	Quarter	total_sold_quantity	
▶	Q1	7005619	
	Q2	6649642	
	Q4	5042541	
	Q3	2075087	



Insights:

- The Quarter with maximum sold quantity is Q1 i.e. First quarter.
- We observed in the previous request that the 1st quarter of Atliq Hardware had the most sales for both years 2020 and 2021 which explains the result of this request, this can also be because most companies try to have a better 1st quarter than the rest of the year.

Channel with more Gross Sales in 2021

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:

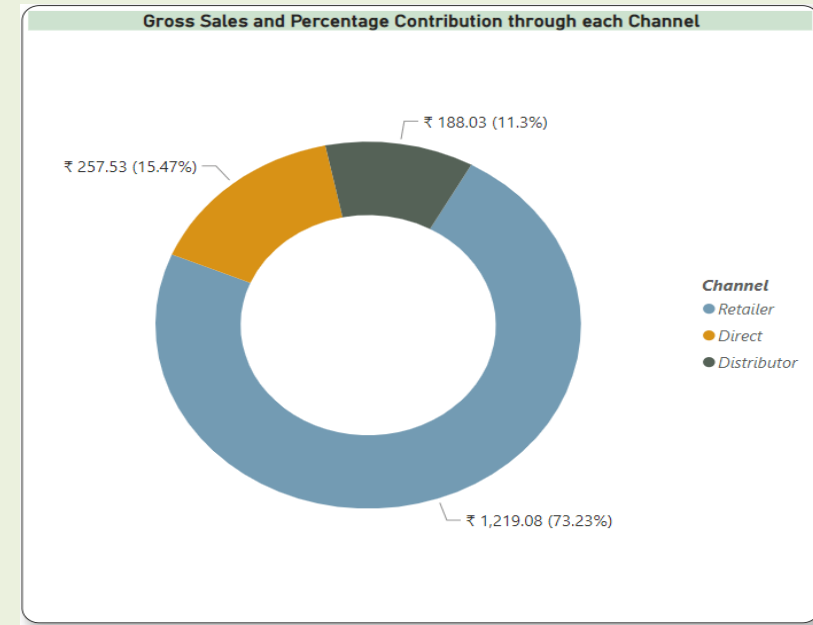
channel, gross_sales_mln, percentage.

Output:

Result Grid		Filter Rows:	
	channel	gross_sales_mln	percentage
►	Retailer	1219.08	73.233852
	Direct	257.53	15.470612
	Distributor	188.03	11.295535

Visualising the output

Result Grid		Filter Rows:	
	channel	gross_sales_mln	percentage
▶	Retailer	1219.08	73.233852
	Direct	257.53	15.470612
	Distributor	188.03	11.295535



Insights:

- Most number of sales for Atliq Hardware comes from **Retail channel** i.e. around **73%**
- The reason behind this can be that **Atliq has it's biggest market in India** and in India people believe in buying these kind of products **offline** instead from market places like Amazon, Flipkart or Atliq's own website.
- **Direct** channel is at **2nd position** followed by **Distributor**.

Top 3 products division wise with high quantity sold in 2021

Request 10:

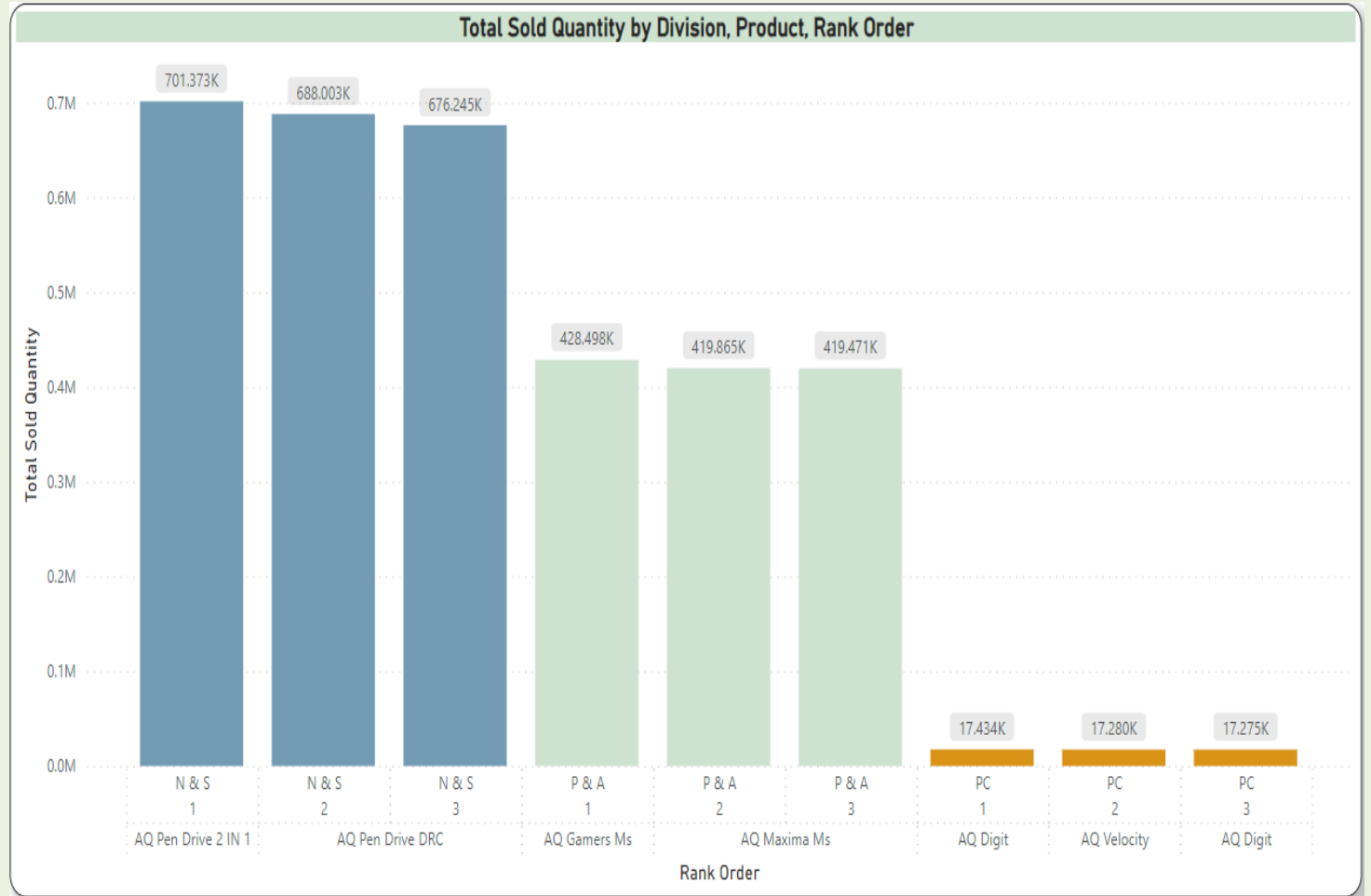
Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021? The final output contains these fields: division, product_code.

Output:

Result Grid		Filter Rows:		Export:	Wrap Cell Content:
	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

Visualising the output

Result Grid	Filter Rows:	Export:	Wrap Cell Contents:		
	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



THANK YOU!