Consumer Goods Ad_Hoc Insights

by Sanak Mukherjee

- **Target**
  - Gain specific data-driven insights to understand the current state of buisness and expand it in the future.

- **Results**
  - The problem faced by the company based on the specific data they required is solved.

Outline

- Database information
- Queries and insights.
- Conclusion
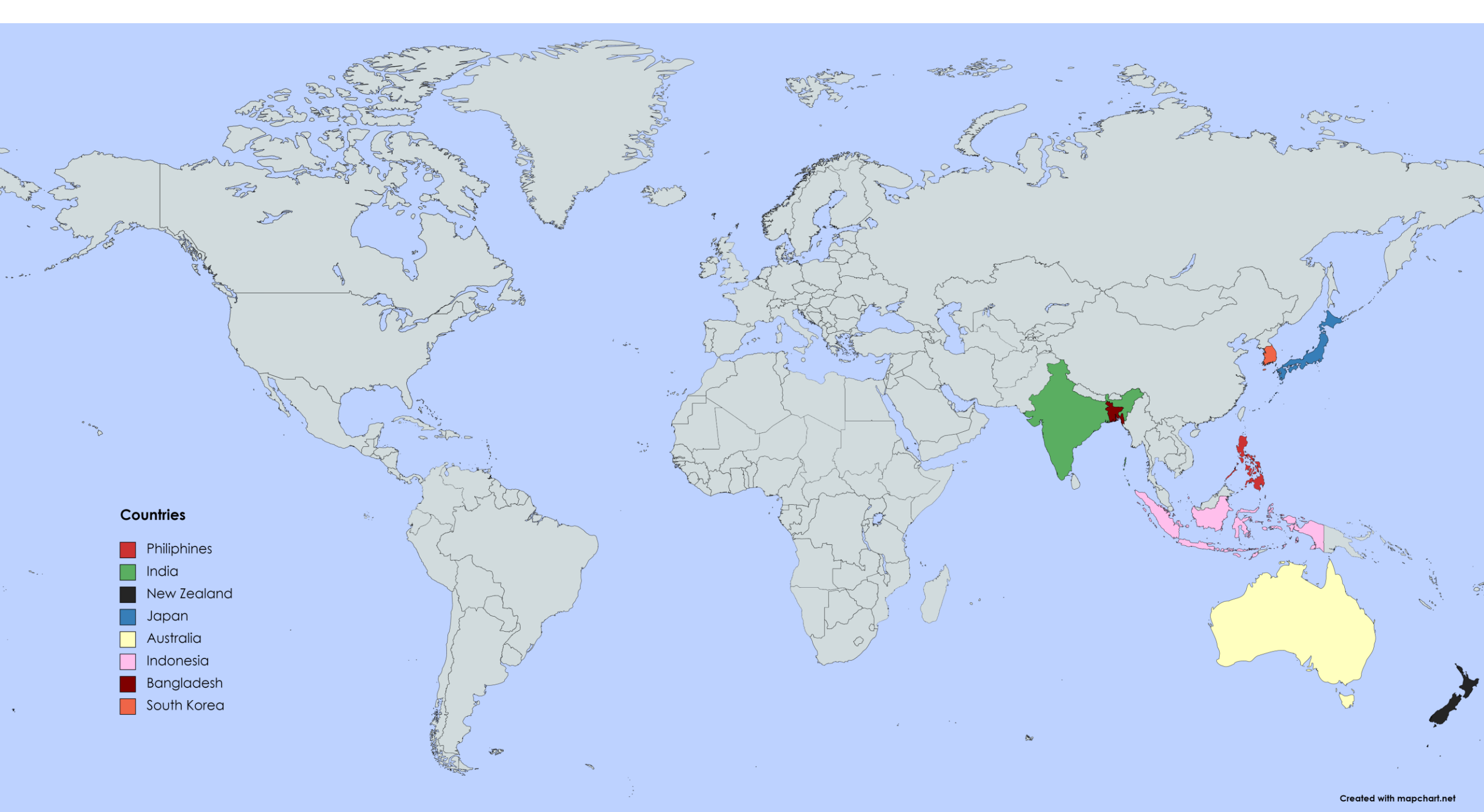- Acknowledgements

Atliq_hardware database

- **dim_customer**: contains customer-related data

- **dim_product**: contains product-related data

- **fact_gross_price**: contains gross price information for each product

- **fact_manufacturing_cost**: contains the cost incurred in the production of each product

- **fact_pre_invoice_deductions**: contains pre-invoice deductions information for each product

- **fact_sales_monthly**: contains monthly sales data for each product.

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

market	region	customer
India	APAC	Atliq Exclusive
Indonesia	APAC	Atliq Exclusive
Japan	APAC	Atliq Exclusive
Philiphines	APAC	Atliq Exclusive
South Korea	APAC	Atliq Exclusive
Australia	APAC	Atliq Exclusive
Newzealand	APAC	Atliq Exclusive
Bangladesh	APAC	Atliq Exclusive

Countries

- 🟥 Philiphines
- 🟩 India
- ⬛ New Zealand
- 🟦 Japan
- 🟨 Australia
- 🟪 Indonesia
- 🟥 Bangladesh
- 🟧 South Korea

Created with mapchart.net

- APAC means Asia PACific and signifies the countries in Asia and on Pacific Ocean but not in North or South America. So Oceania also is a part of APAC countries.

- There are 58 countries in APAC where our customer Atliq Exclusive is able to conduct buisness in 8 of them.

- The country providing largest buisness for the company is India and it falls under sub_region APAC which also provides the most buisness over other sub_regions.

Unique product count and increase by year
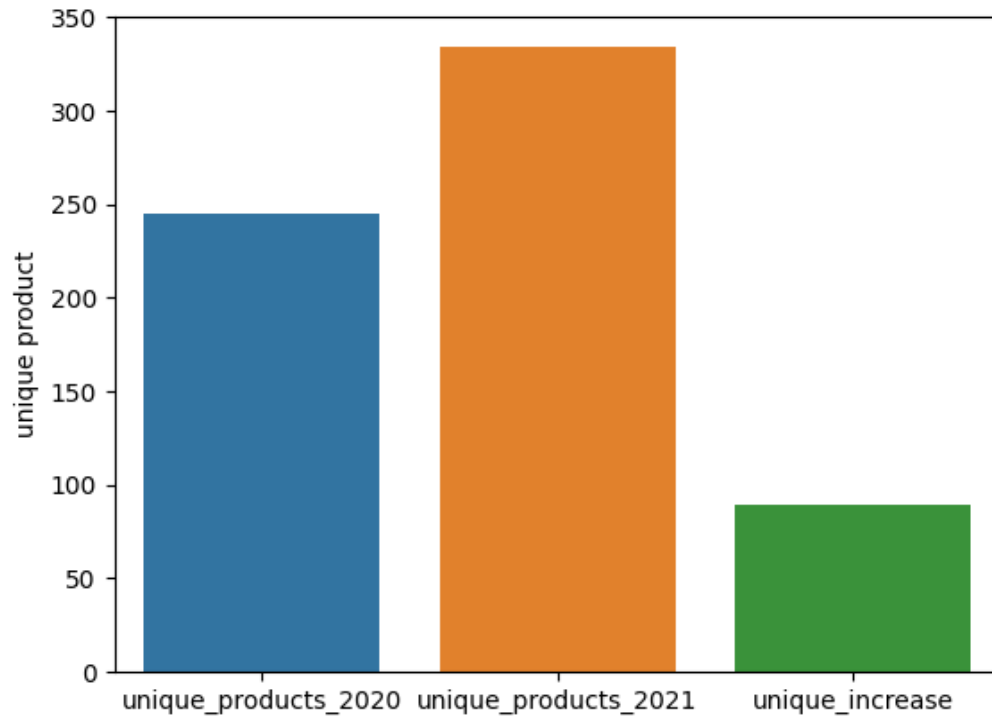
unique_products_2021	334.0000
unique_products_2020	245.0000
percentage_chg	36.3265

The total number of unique products increase while calculating by counting based on product code is 89 from 2020 to 2021. In the figure to the left this count is denoted as 'unique_increase' as the third column.
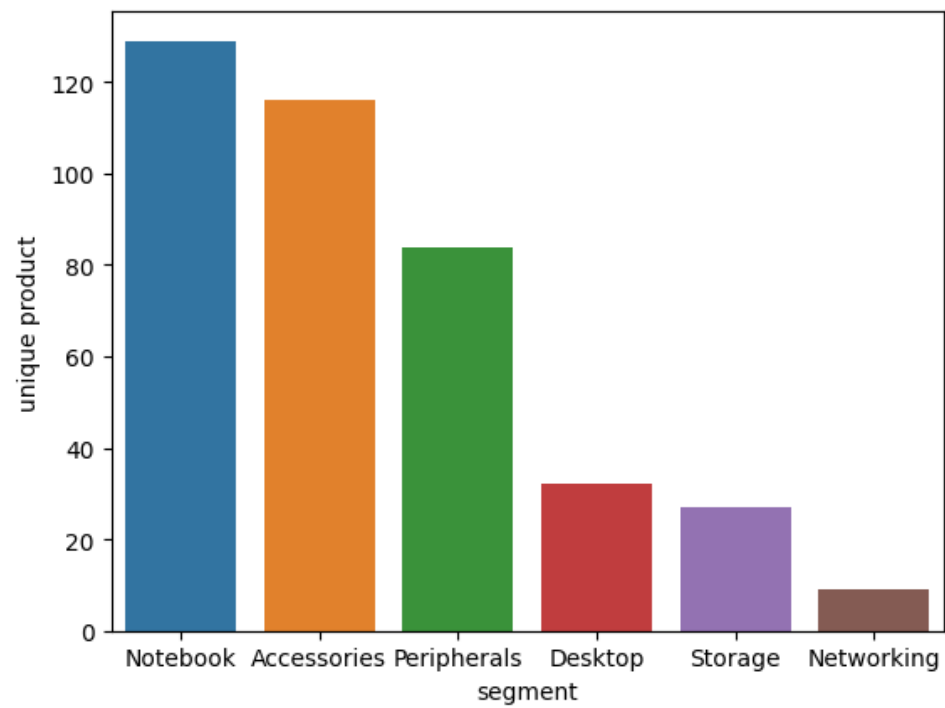
Segment : categorizes products within a division.

Peripherals:
- keyboard
- Mouse
- Monitor ,etc.

Accessories:
- Cases
- Cooling solutions
- Power supplies

Notebook:
- Laptops

Desktop:
- desktops
- all-in-one PCs, etc

Storage:
- Hard disks
- SSDs
- External storage

Networking:
- Routers,
- Switches
- Modems, etc

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Unique product counts for each segment

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

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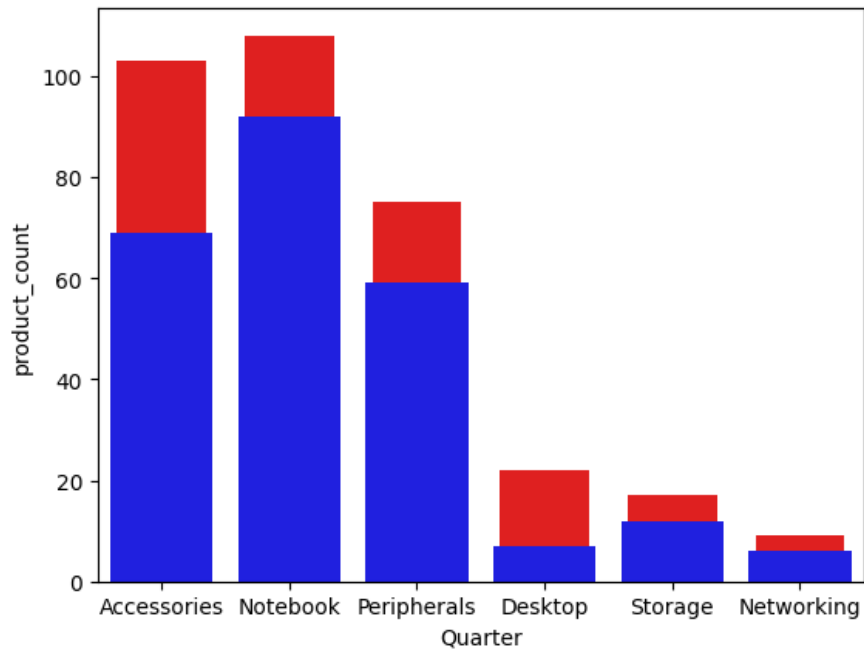
segment	product_count_2021	product_count_2020	difference
Accessories	103	69	34
Notebook	108	92	16
Peripherals	75	59	16
Desktop	22	7	15
Storage	17	12	5
Networking	9	6	3

Segment had the most increase in unique products from 2020 to 2021
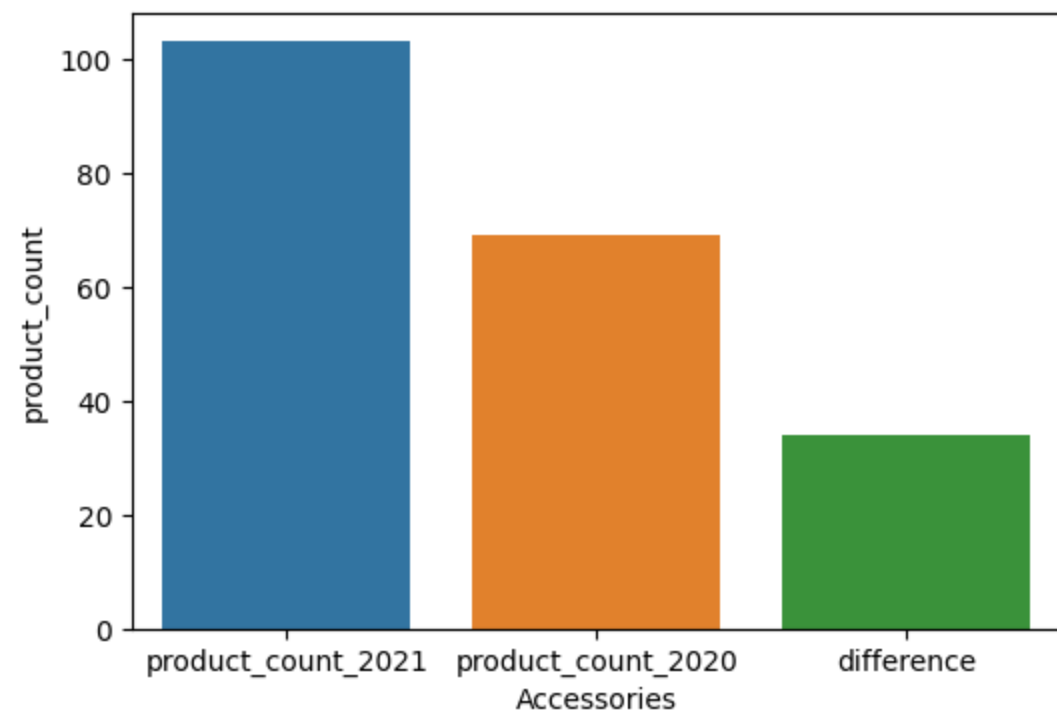
| segment	Accessories
product_count_2021	103
product_count_2020	69
difference	34

Insights

- The count of unique products in bottom three segment of storage, networking and desktop is insignificant compared to the other segment which is understandable when observing items sold in those segment.
- The greatest increase in unique products was in Accessories segment from year 2020 to 2021 .
- The highest unique products sold was in notebook segment for years 2020 and 2021 combined.

# Cheapest and the most expensive product based on manufacturing cost.
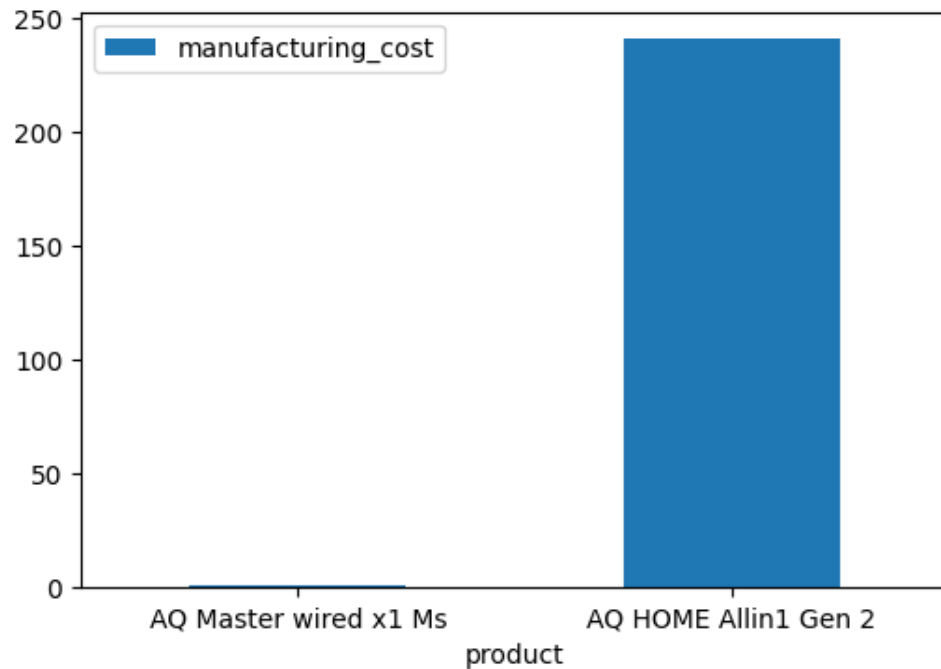
manufacturing_cost	product_code	product
0.8920	A2118150101	AQ Master wired x1 Ms
240.5364	A6120110206	AQ HOME Allin1 Gen 2

- The cost is denoted in dollars.
- The cheapest product is a mouse.
- The costliest product is a desktop.

Top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market
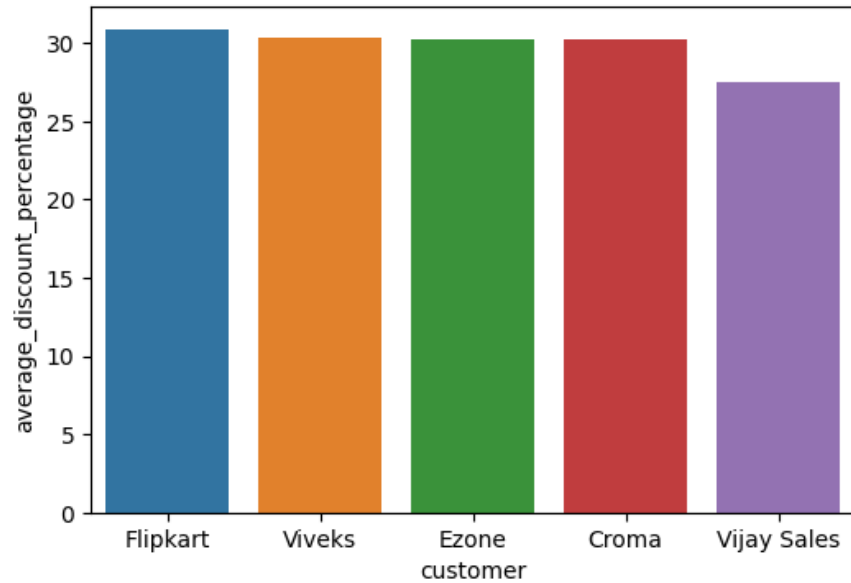
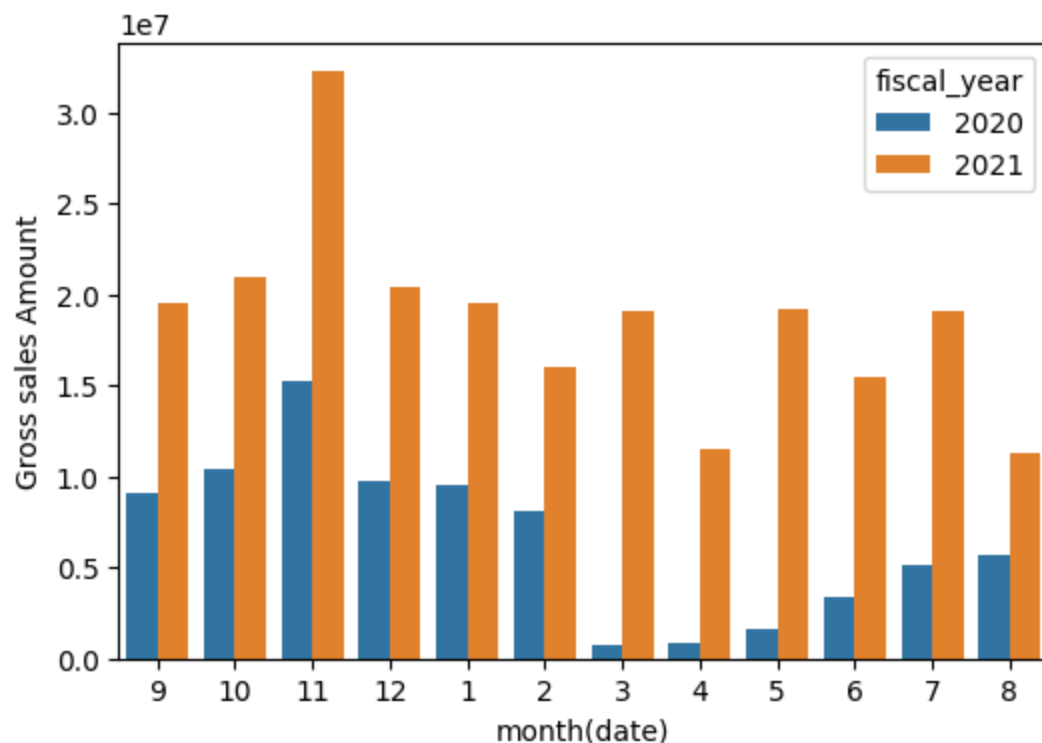| customer	customer_code	average_discount_percentage
Flipkart	90002009	30.83
Viveks	90002006	30.38
Ezone	90002003	30.28
Croma	90002002	30.25
Vijay Sales	90002004	27.53

Insights

- The average_discount_percentage is calculated by averaging over pre_invoice_discount_pct .
- The "pre_invoice_discount_pct" means the percentage of pre-invoice deductions for each product. Pre-invoice deductions are discounts that are applied to the gross price of a product before the invoice is generated, and typically applied to large orders or long-term contracts.
- The "customer_code" is the unique alphanumeric code by which the customer is identified.
- Flipkart received the average highest pre_invoice_discount_pct for the fiscal_year 2021 and in the Indian market.

Report of the Gross sales amount for the customer "Atliq Exclusive" for each month

1e7 means 10^7. e+0n means multiplied by 10^n.[n=integer from 0 to 9.]

Year	Month	Gross sales Amount	Year	Month	Gross sales Amount
2021	9	1.953027e+07	2020	9	9.092670e+06
2021	10	2.101622e+07	2020	10	1.037864e+07
2021	11	3.224729e+07	2020	11	1.523189e+07
2021	12	2.040906e+07	2020	12	9.755795e+06
2021	1	1.957070e+07	2020	1	9.584952e+06
2021	2	1.598660e+07	2020	2	8.083996e+06
2021	3	1.914962e+07	2020	3	7.669765e+05
2021	4	1.148353e+07	2020	4	8.000720e+05
2021	5	1.920431e+07	2020	5	1.586964e+06
2021	6	1.545758e+07	2020	6	3.429737e+06
2021	7	1.904497e+07	2020	7	5.151815e+06
2021	8	1.132455e+07	2020	8	5.638282e+06

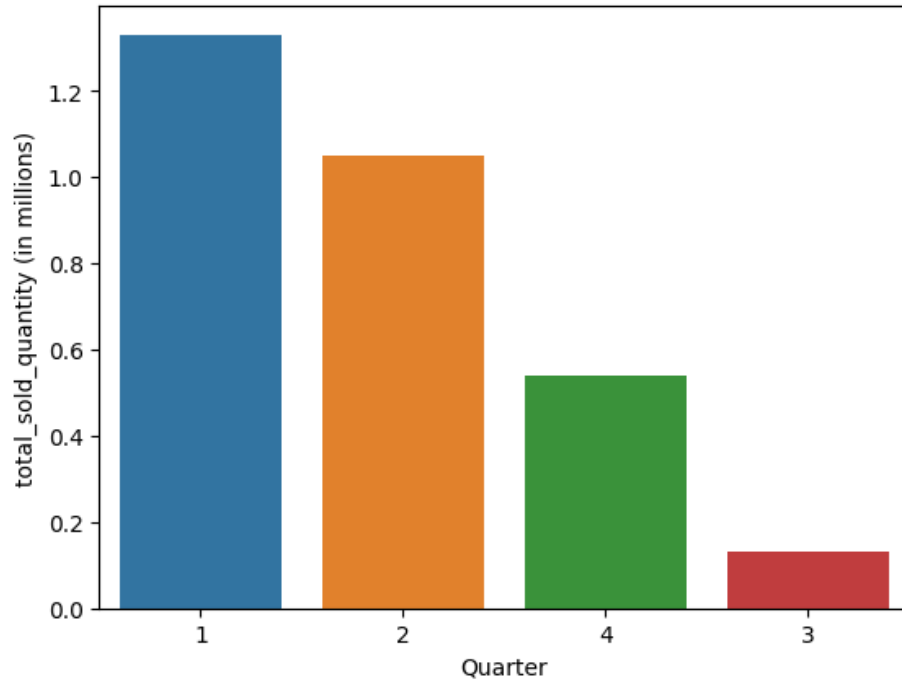# Insights

- The fiscal_year 2020 starts in September 2019 and ends in August 2020 and similarly for 2021.
- Gross sales Amount denotes sum of (gross_price * sold_quantity) for the specified attribute.
- Performance in fiscal_year 2021 is significantly better .
- Best performance was achieved for November 2020.

In which quarter of 2020, got the maximum total_sold_quantity?

Quarter	total_sold_quantity
1	1326435
2	1050792
4	538792
3	130509

Insights

- The fiscal_year 2020 starts in September 2019 and ends in August 2020 and similarly for 2021.
- Quarter 1 includes September, October and November and the following quarters groups the corresponding months accordingly.
- Quarter 1 also had tha maximum total_sold_quantity of all quarters followed 2,4 and 3.

Channel : distribution methods used to sell a product

|		
Retailers : refer to physical or online stores that sell products to consumers.	Direct : sales refer to sales made directly to consumers through a company's website or other direct means.	Distributors : refer to intermediaries or middlemen between the manufacturer and retailer or end consumers.

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Channel and their gross_sales gross sales in the fiscal year 2021 and the percentage of contribution.
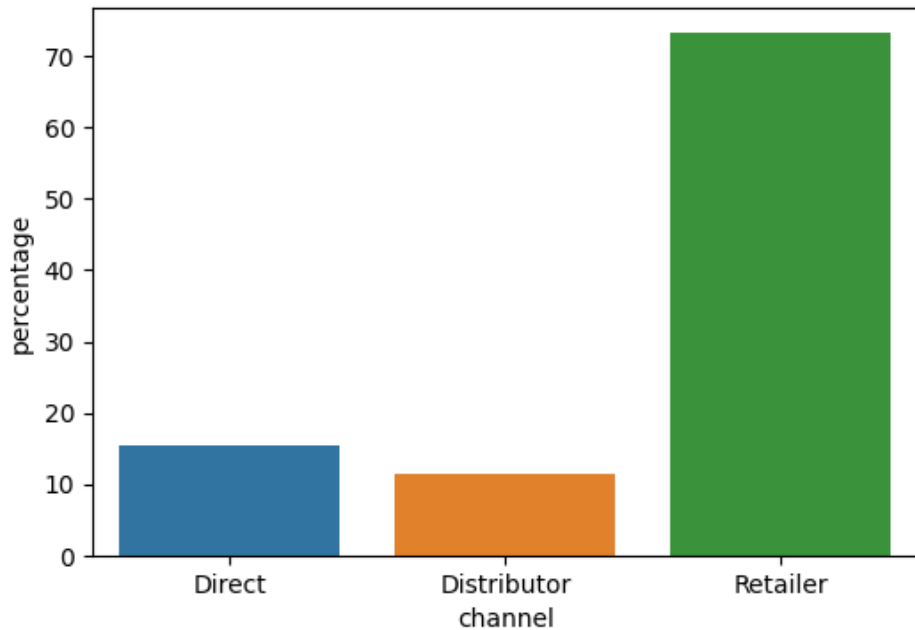
channel	gross_sales_mln	percentage
Direct	4.066869e+08	15.474952
Distributor	2.971759e+08	11.307920
Retailer	1.924170e+09	73.217128

- 'gross_sales_mln' denotes sum of (gross_price * sold_quantity) for the specified channel.

e+0n means multiplied by 10^n.[n=integer from 0 to 9.]

Division: The 'division' column categorizes products into groups

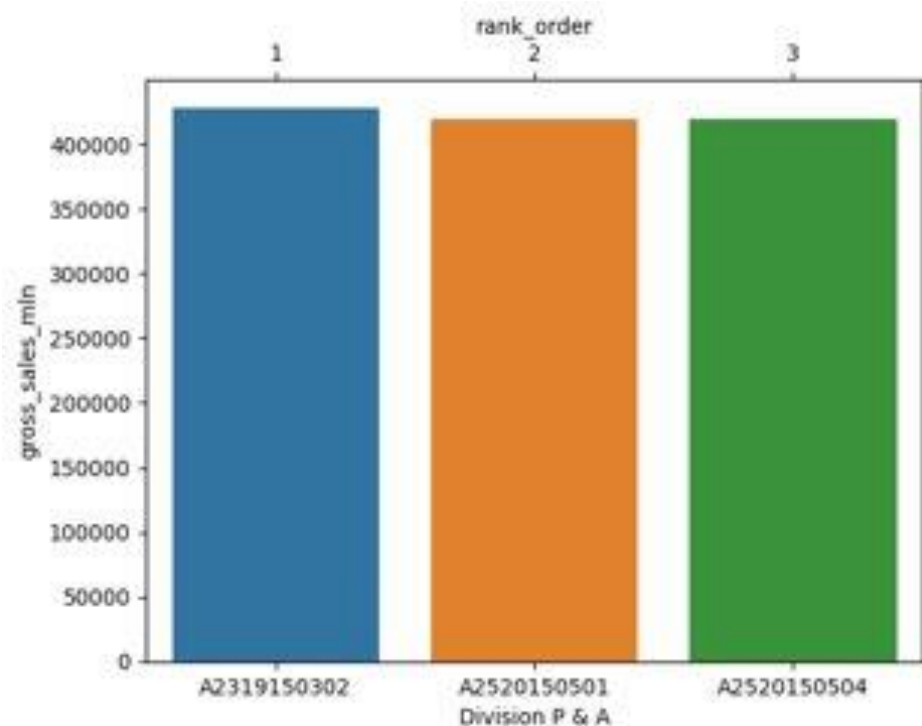|		
P & A:Peripherals and Accessories	N & S:Network and Storage	PC : Personal Computer

Top 3 products in division `P & A`

division	product_code	product	total_sold_quantity	rank_order
P & A	A2319150302	AQ Gamers Ms	428498.0	1
P & A	A2520150501	AQ Maxima Ms	419865.0	2
P & A	A2520150504	AQ Maxima Ms	419471.0	3

Top 3 products in division `PC`
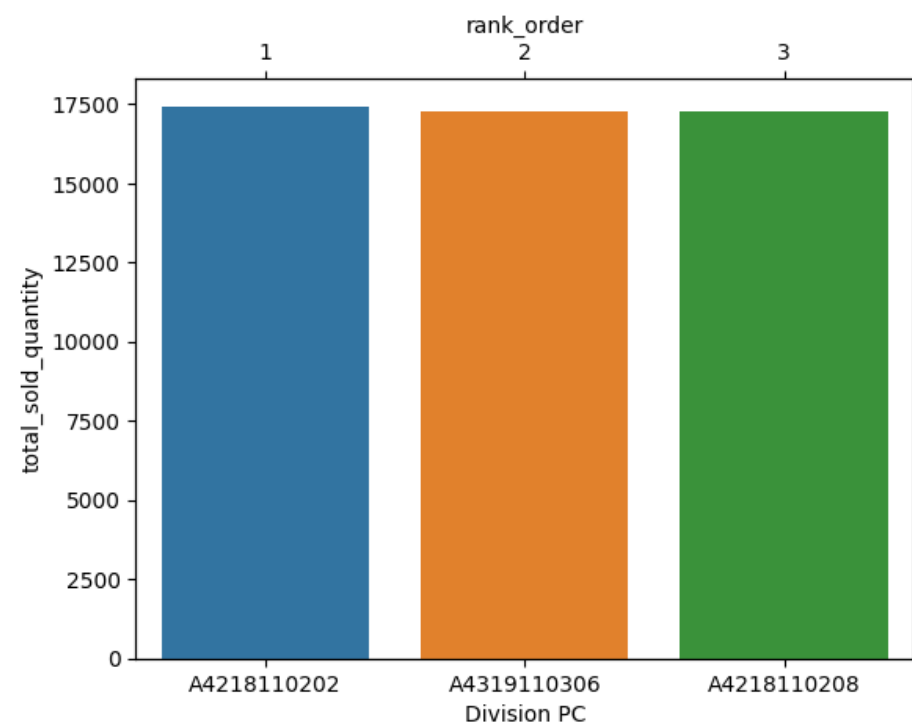
division	product_code	product	total_sold_quantity	rank_order
PC	A4218110202	AQ Digit	17434.0	1
PC	A4319110306	AQ Velocity	17280.0	2
PC	A4218110208	AQ Digit	17275.0	3

Top 3 products in division `N & S`
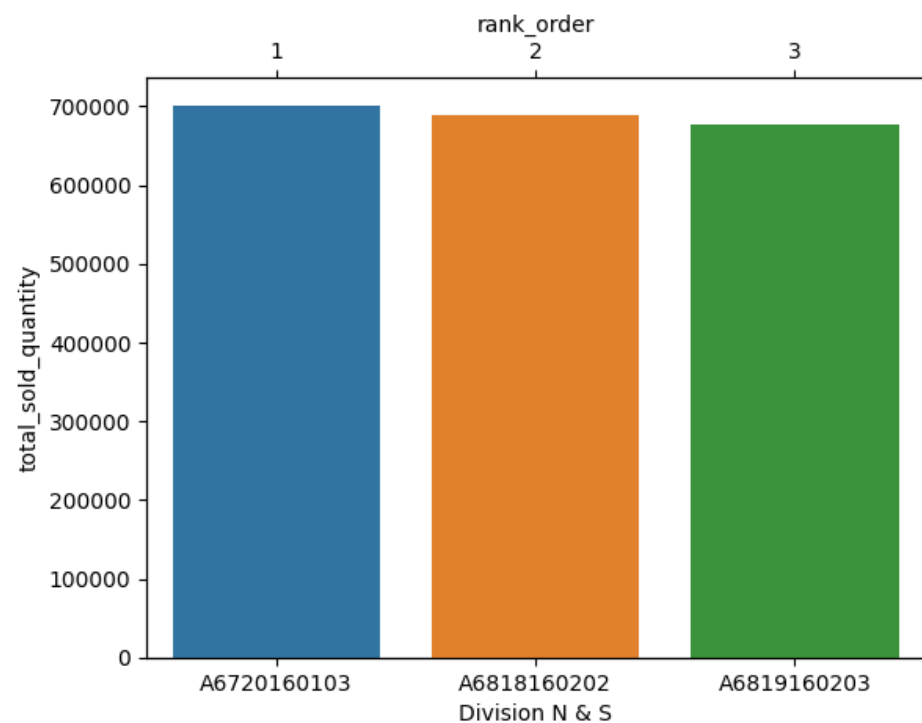
division	product_code	product	total_sold_quantity	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1	701373.0	1
N & S	A6818160202	AQ Pen Drive DRC	688003.0	2
N & S	A6819160203	AQ Pen Drive DRC	676245.0	3

Insights

- Maximum sales in fiscal_year 2021 was through retailer channel.

- The most sold product for each division is noted.

Conclusion

- The solution of all the necessary queries are extracted .

- Any further queries can be easily solved by the information provided from the database.

- The databases are well maintained as there were no missing or incomplete values present in them.

Acknowledgements

- I would like to be grateful for the opportunity that was provided to me to work on a non-trivial dataset.