



Ad-hoc Insights

Consumer Goods Domain

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Why?

Objectives

What?

Company's Detail and Market

How?

Data, Requests and Tools



Why?

Objectives

AtliQ Hardware, a leading computer hardware manufacturer in India with a growing global footprint, has recognized the need for deeper insights to drive timely, strategic, and data-driven decisions.

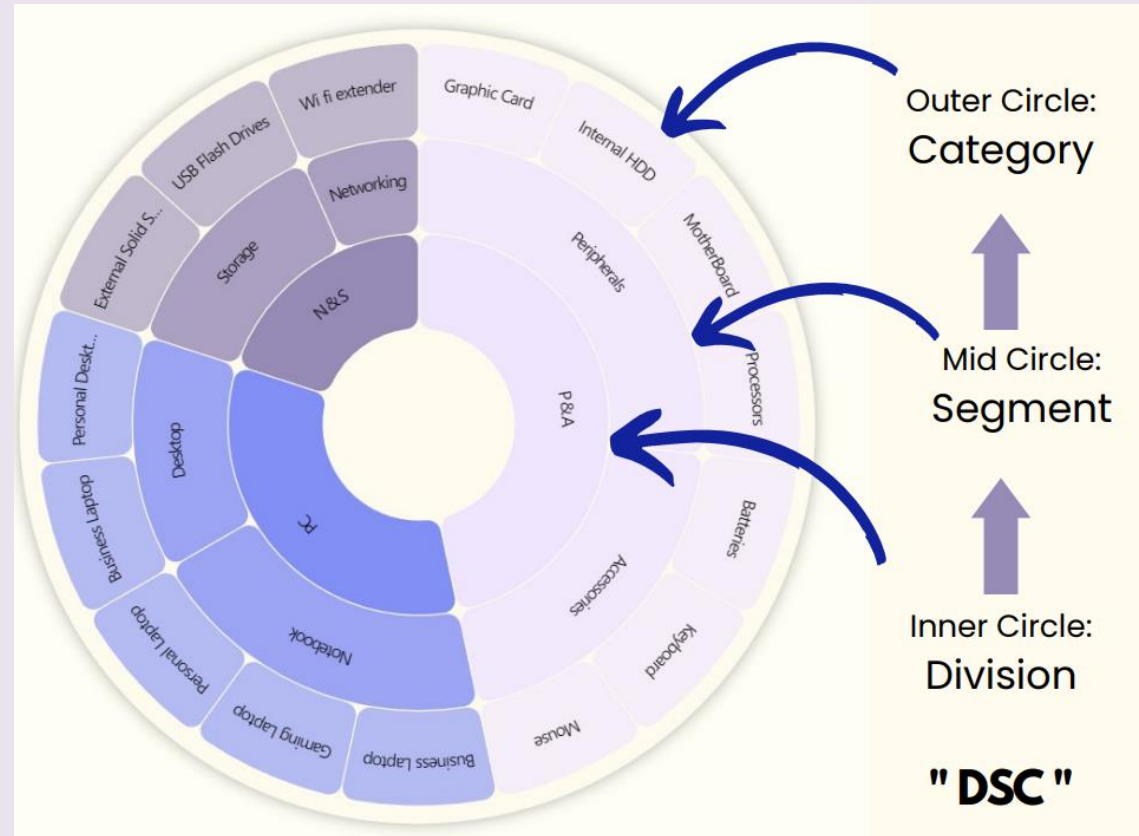
In response, the company plans to expand its data analytics team by hiring junior data analysts.

To assess potential candidates, Data Analytics Director **Tony Sharma** is organizing a SQL challenge that will evaluate both technical expertise and soft skills, as the team addresses 10 unique ad hoc data requests.



What?

Company Details



FISCAL YEAR

SEPTEMBER 2019 - AUGUST

2020 FY 2020

SEPTEMBER 2020 - AUGUST

2021 FY 2021

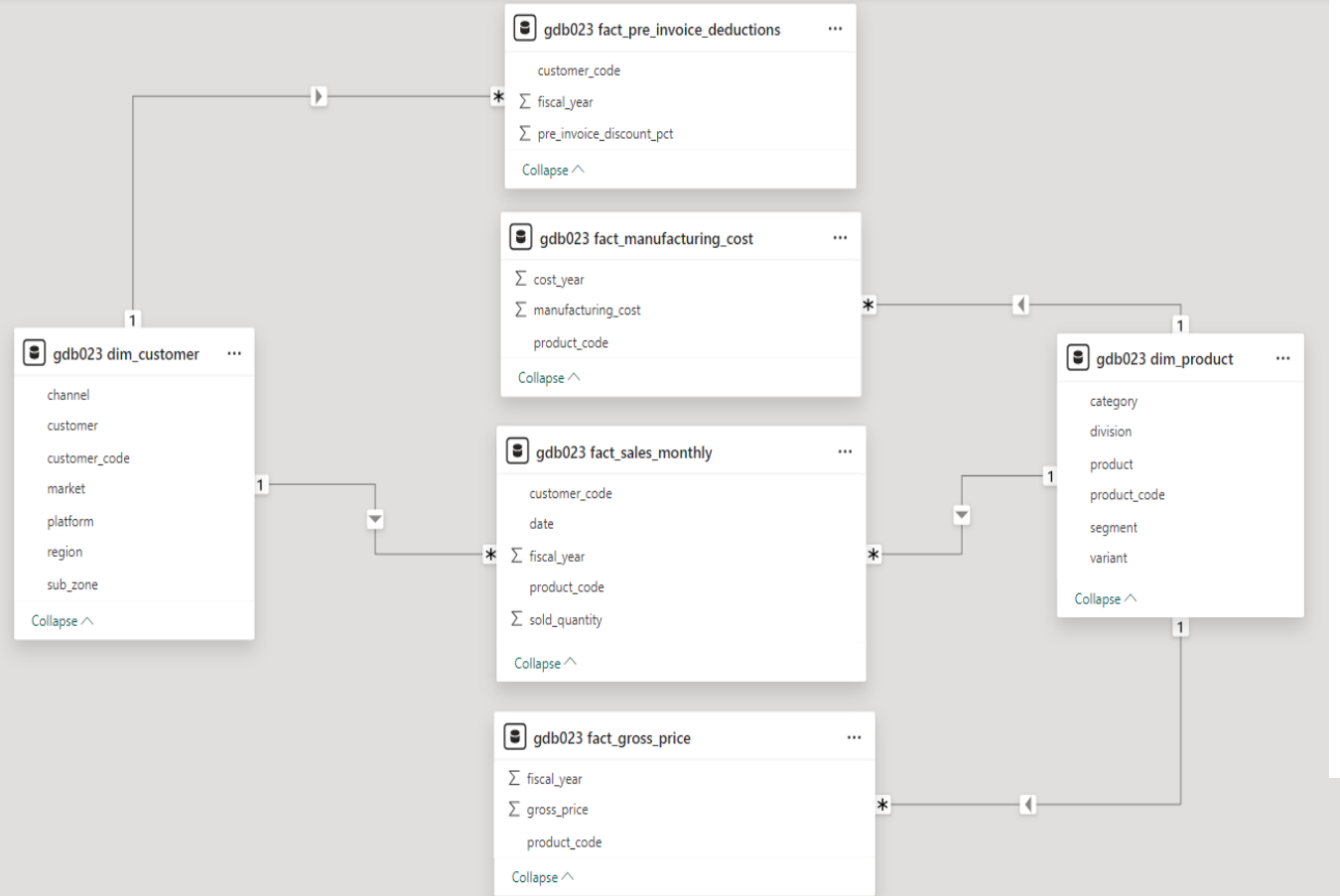
Company's Market



Atliq Hardware

How?

Data, Requests and Tools



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

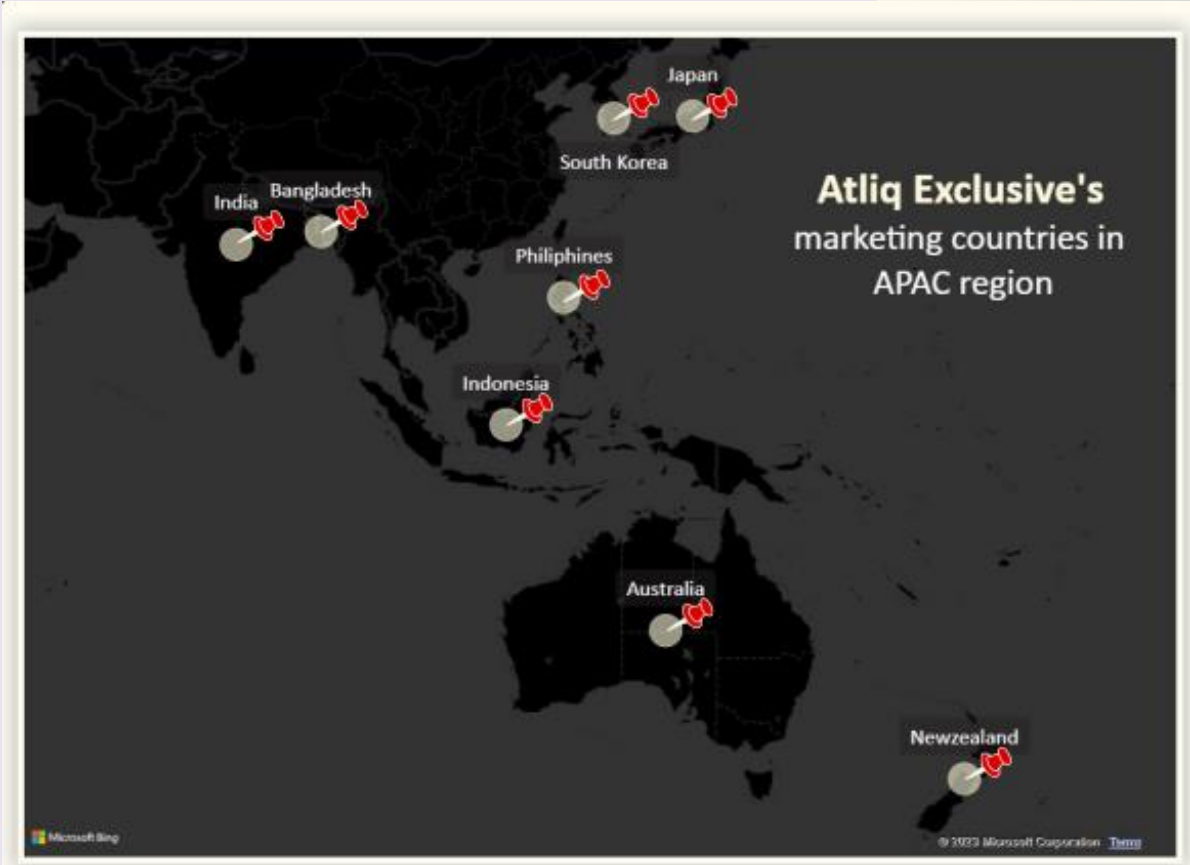
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Request 1:

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



Request 2:

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

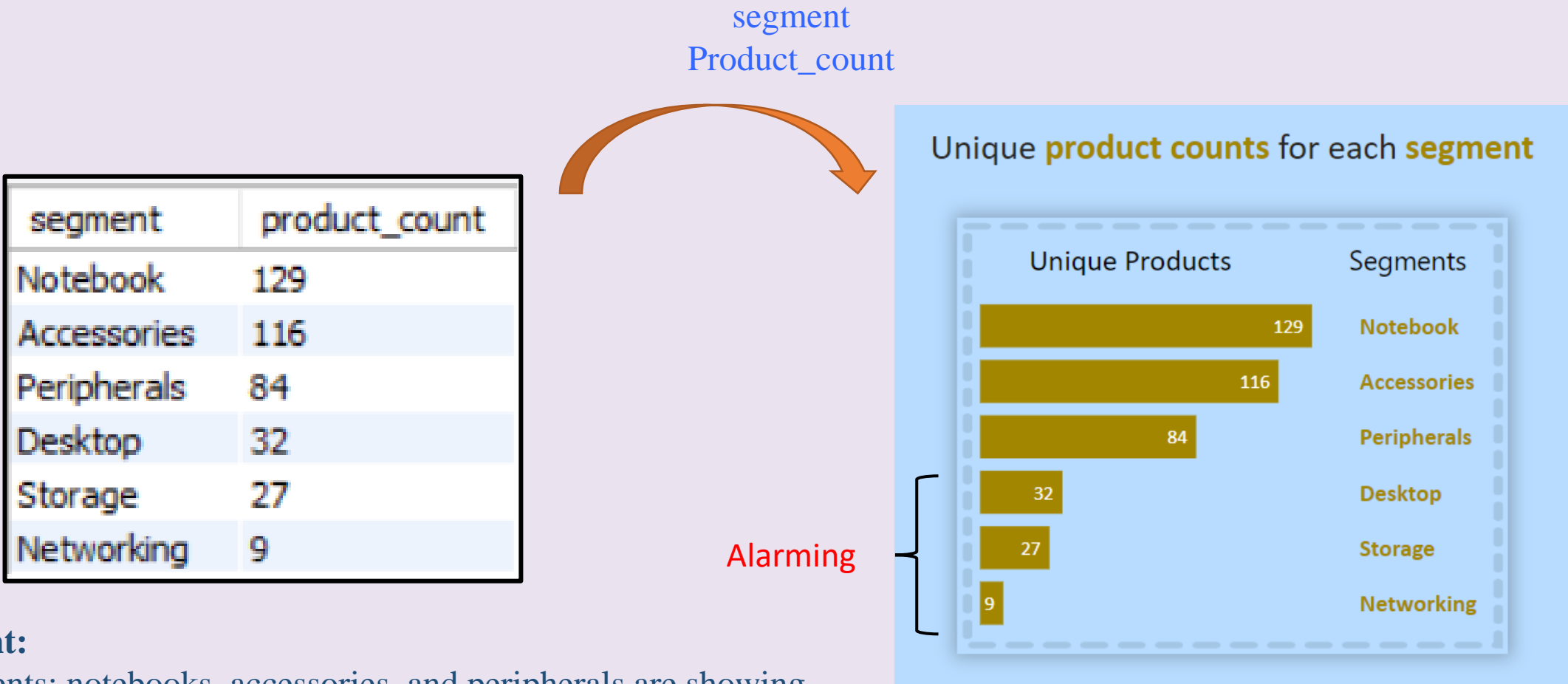


Insight:

- Demand and production both increased.

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,



- Insight:**
- 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.



- **Wi-fi extender**
- **USB Flash**
- **Drives External**
- **Solid State**
- **Drives Personal**
- **Desktop**
- **Business**
- **Laptop**

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

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

Suggestions :

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

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

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 ↑
Desktop	7	22	15 ↑
Networking	6	9	3 ↑
Notebook	92	108	16 ↑
Peripherals	59	75	16 ↑
Storage	12	17	5 ↑

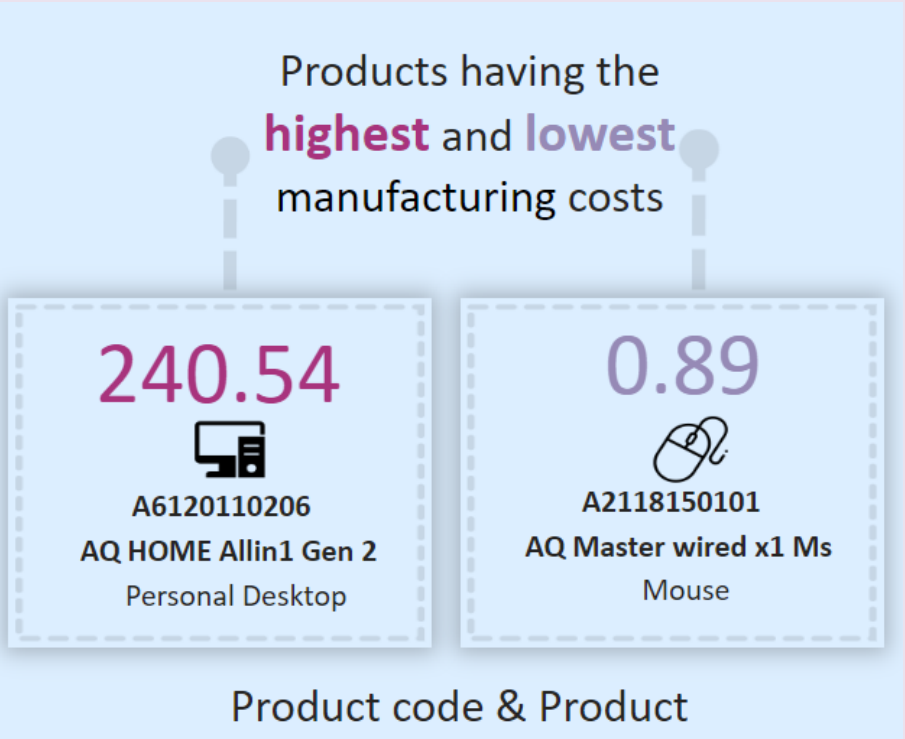
- Insight:**
- **Accessories** had the **largest** increase in production.
 - **Storage and networking** are experiencing slower production growth than other segments.

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`



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



Insight:

- Mouse: AQ Master wired x1 Ms (**Variant:Standard1**) has the lowest manufacturing cost.
- Personal Desktop: AQ Home Allin1 Gen2 (**Variant:Plus3**) has the highest manufacturing cost

Request 6:

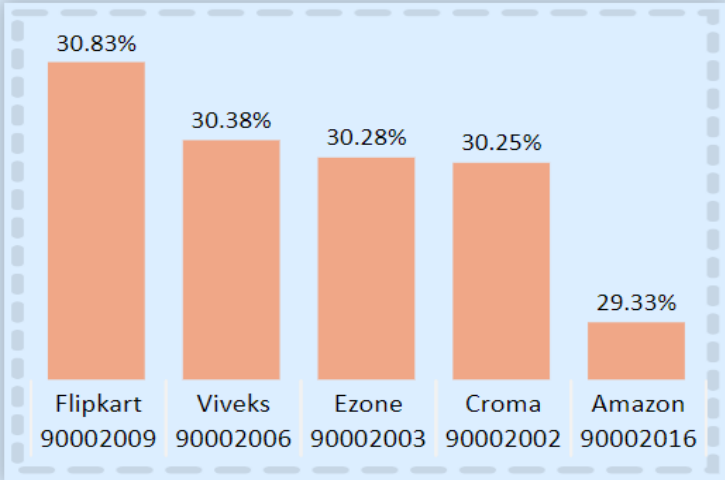
Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields,

customer_code
customer
average_discount_percentage

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



Customer & Customer code

Insight:

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

Request 7:

Get the complete report of the Gross sales amount forthe 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

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

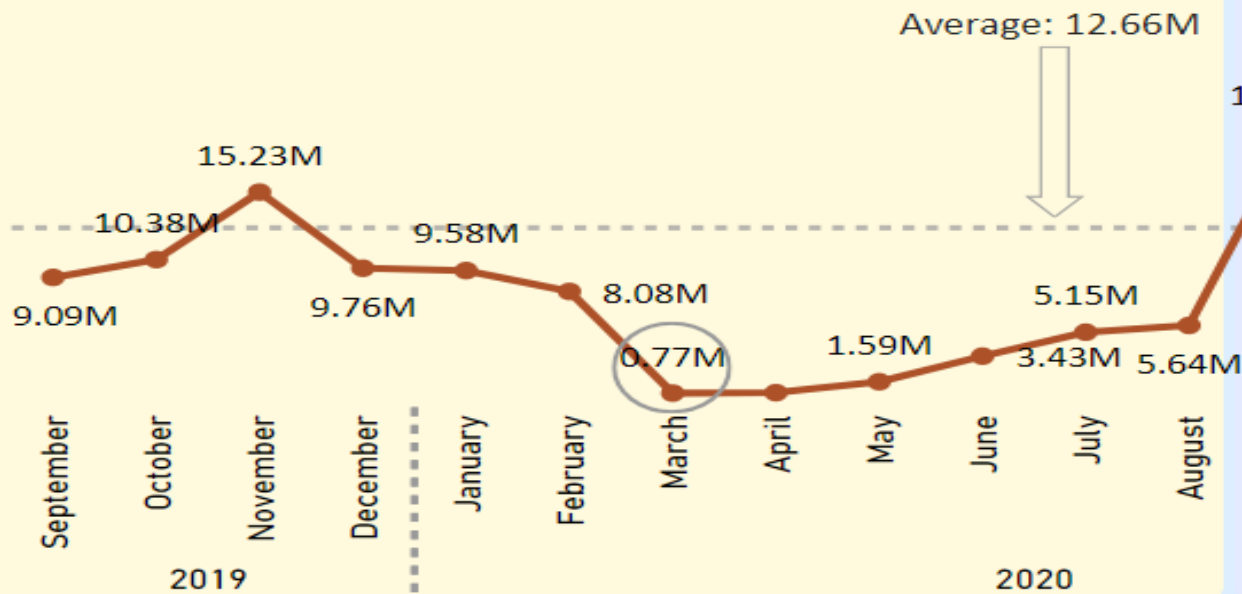
FY 2020
79.5 M

FY 2021
224.4 M

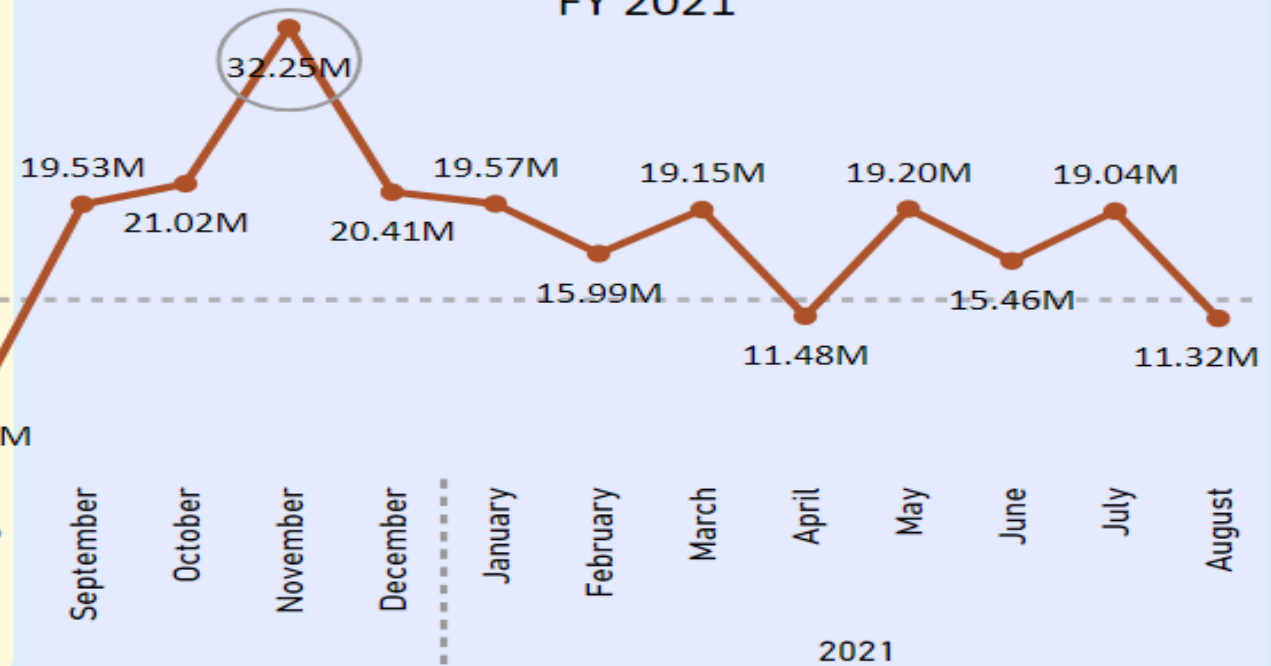
Insights:

- 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**.

FY 2020



FY 2021



Reasons:

- COVID-19
- Global Chip
- shortage

when did the silicon chip shortage start ?

Between 2020 and 2023, there was a worldwide chip shortage affecting more than 169 industries, which led to major price increases, long queues, and reselling among consumers and manufacturers for automobiles, graphics cards, video game consoles, computers, household appliances, and other consumer electronics that ...



Wikipedia

[https://en.wikipedia.org/wiki/2020-2023_global_ch...](https://en.wikipedia.org/wiki/2020-2023_global_chip_shortage)

2020-2023 global chip shortage - Wikipedia

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

Quarters	total_sold_quantity
1	7005619
2	6649642
4	5042541
3	2075087

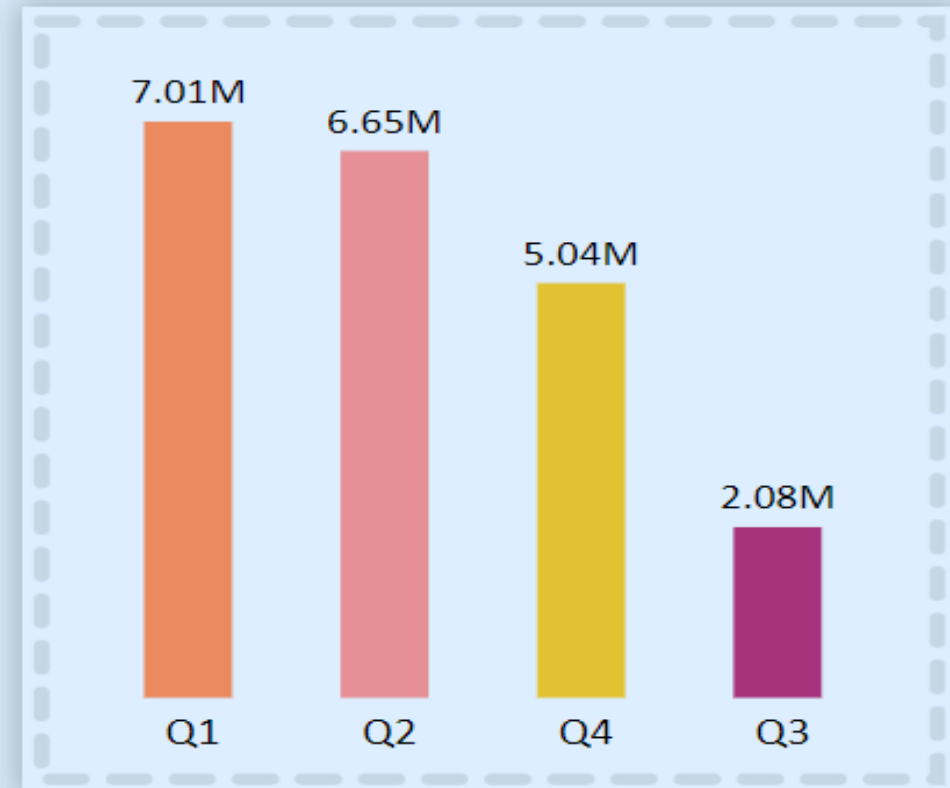
Quarters	total_sold_quantity
[1] September	1764002
[1] October	2190792
[1] November	3050825
[2] December	3184205
[2] January	1762652
[2] February	1702785
[3] March	238961
[3] April	819956
[3] May	1016170
[4] June	1559773
[4] July	1692575
[4] August	1790193

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**.
- Quarter1 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	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

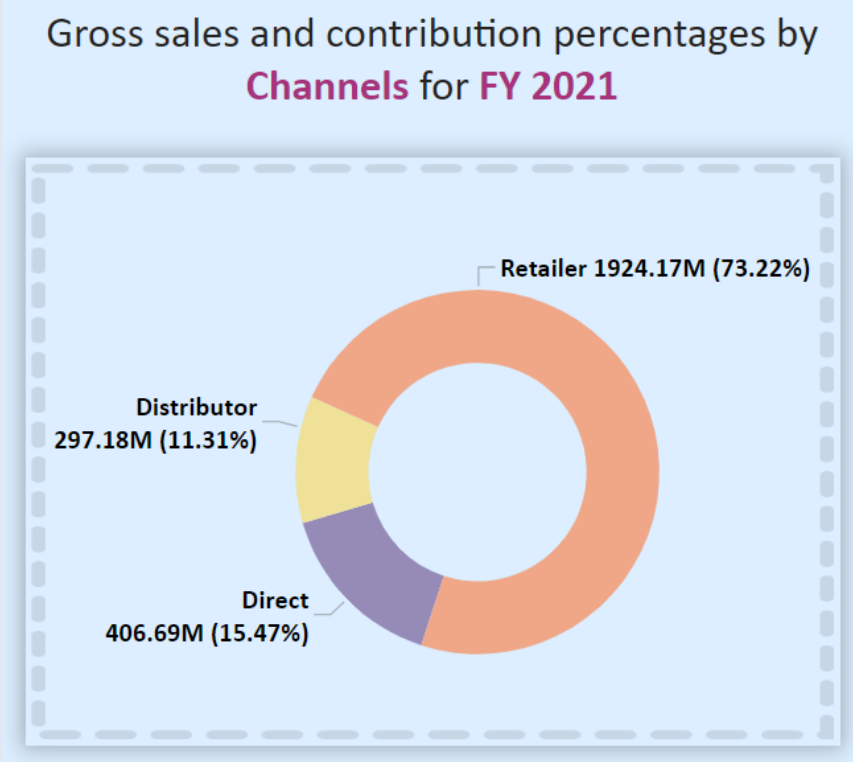


Request 9:

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

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%**.

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
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:

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

Division ● N & S

701.37K

1

A6720160103

AQ Pen Drive 2 IN 1

688.00K

2

A6818160202

AQ Pen Drive DRC

676.25K

3

A6819160203

Division ● P & A

428.50K

1

A2319150302

AQ Gamers Ms

419.87K

2

A2520150501

AQ Maxima Ms

419.47K

3

A2520150504

Division ● PC

17.43K

1

A4218110202

AQ Digit

17.28K

2

A4319110306

AQ Velocity

17.28K

3

A4218110208

AQ Digit

Codebasics



Hemanand Vadivel
aka **Tony Sharma**



Dhaval Patel
aka **Peter Pandey**

Atliqo



Bhavin Patel
aka **Bruce Haryali**

Thank you!



x

