



CONSUMER GOODS AD-HOC INSIGHTS

Presented by : Jyoti Sharma





CONTENT



Overview of
Company



Dataset and model



Problem statement



Ad hoc request with
Insights



COMPANY OVERVIEW

- ⑧ Atliq Hardware is one of the leading computer hardware producers in India as well as 26 other countries across the globe
- ⑧ Manufactures products under 3 major divisions i.e., Peripherals & Accessories, PC, Networking & Storage
- ⑧ We have a total of 74 Customers like Neptune, Sage, Leader, Vijay Sales etc. across all markets/countries



Products

Internal HDD-
Graphic Card-
Processors-
Motherboard-

Peripherals 1

Business Laptop-
Personal Desktop-

Desktop 3

Personal Laptop-
Business Laptop-
Gaming Laptop-

Notebook 5

Accessories 2

-Mouse
-Keyboard
-Batteries

Networking 4

-Wi fi extender

Storage 6

-External Solid State Drives
-USB Flash Drives

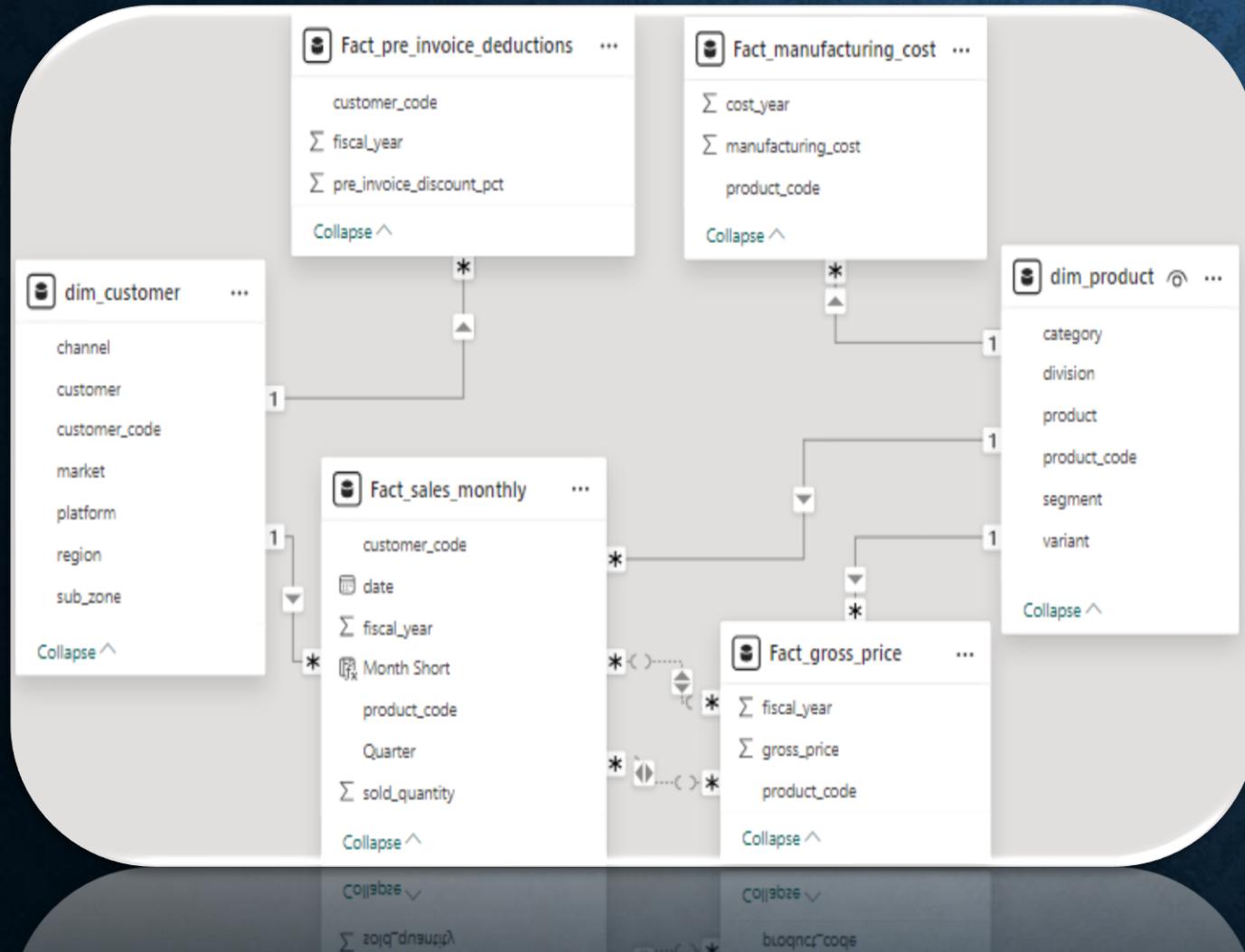


PROBLEM STATEMENT

- Management saw a lack of quick and smart data-based insights.
- They decided to grow the data analytics team by hiring junior analysts.
- Tony Sharma, the data analytics director, is looking for candidates with strong technical and communication skills.
- To test these skills, Tony planned a SQL challenge.



Dataset



Codebasics SQL Challenge

Requests:

- Provide the list of markets in which customer "Atiq Exclusive" operates its business in the APAC region.
- 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
- 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
- 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
- Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields,
product_code
product
manufacturing_cost
- 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
- Get the complete report of the Gross sales amount for the customer "Atiq 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
- 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
- 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_min
percentage
- 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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**LET'S SEE AD-HOC
REQUESTS, QUERY,
RESULTS AND INSIGHTS**

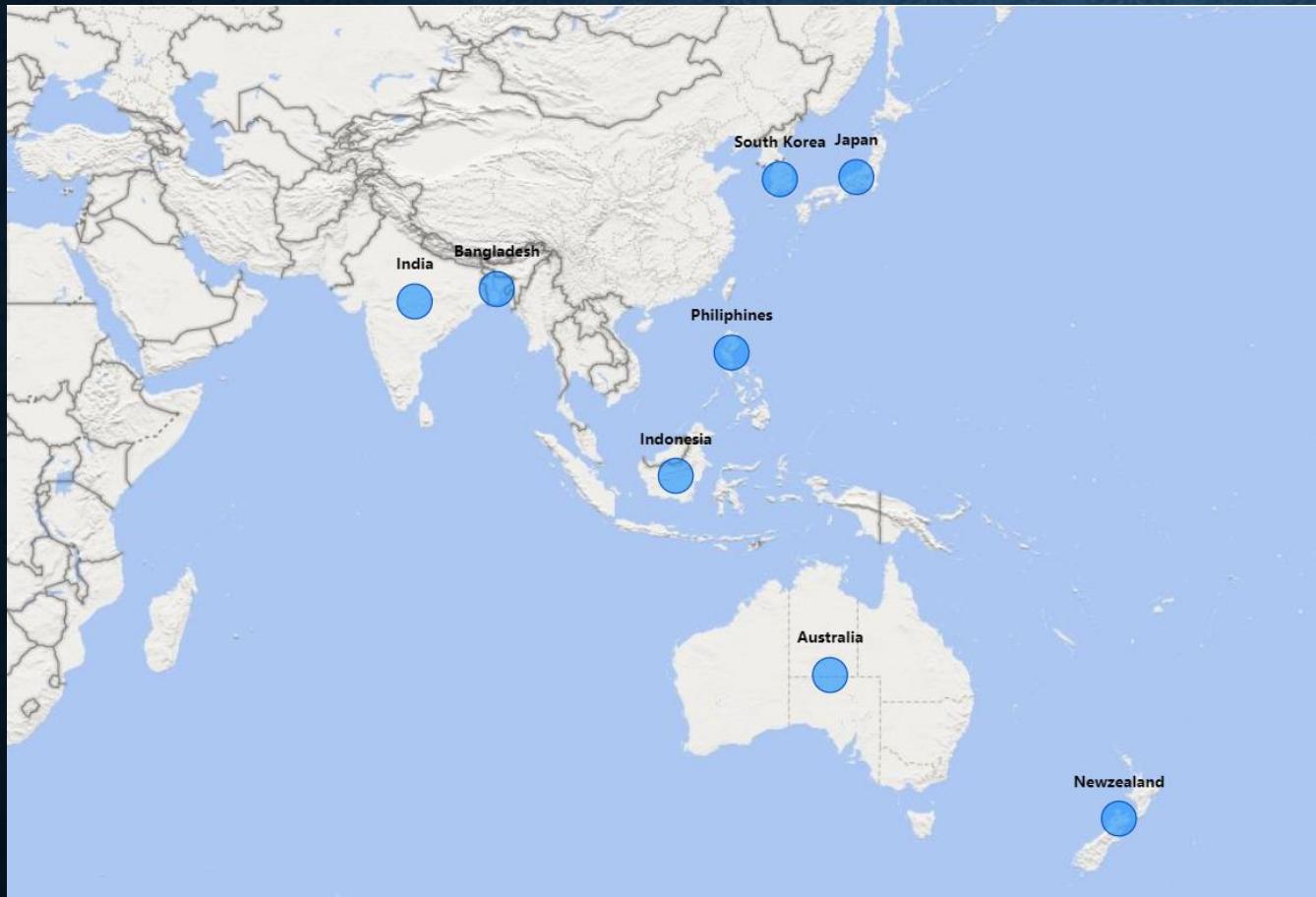
Requests 1.

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

Input

```
SELECT market  
FROM dim_customer  
WHERE customer = 'Atliq Exclusive' AND region = 'APAC'  
GROUP BY market  
ORDER BY market  
;
```

Output



market
India
Indonesia
Japan
Philippines
South Korea
Australia
Newzealand
Bangladesh

Insight

AtliQ Exclusive operates in eight countries across the APAC region, showcasing a strong presence in the regional market.

Requests
2.

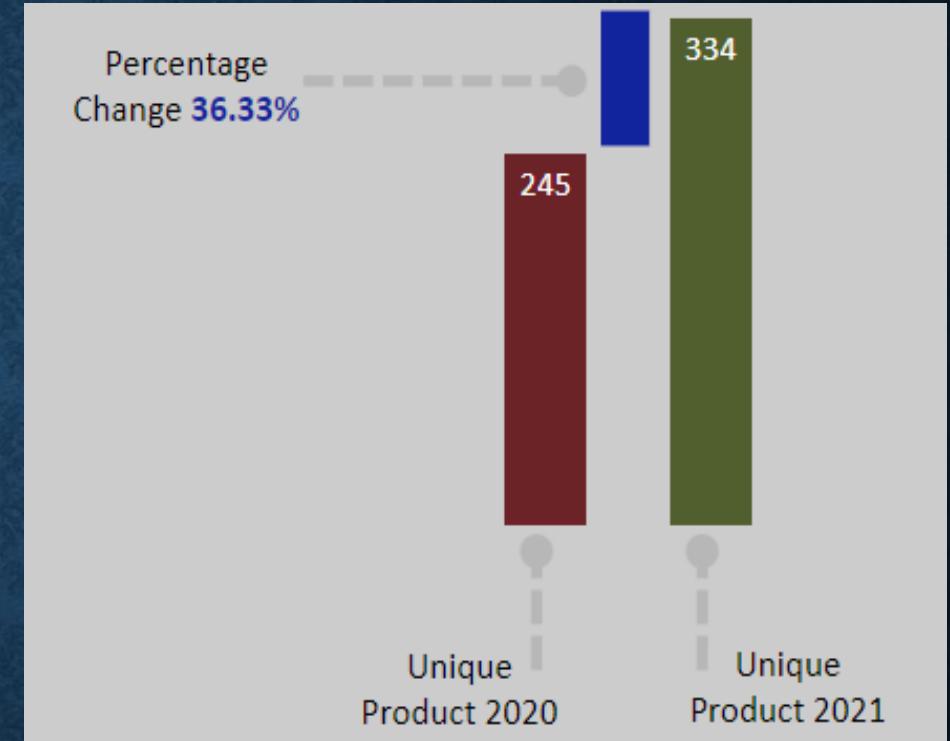
What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields, unique_products_2020, unique_products_2021, percentage_chg .

Input

```
SELECT X.A AS unique_product_2020,  
Y.B AS unique_products_2021,  
ROUND((B-A)*100/A, 2) AS percentage_chg  
FROM  (  
    (SELECT COUNT(DISTINCT(product_code)) AS A  
     FROM fact_sales_monthly  
     WHERE fiscal_year = 2020) X,  
    (SELECT COUNT(DISTINCT(product_code)) AS B  
     FROM fact_sales_monthly  
     WHERE fiscal_year = 2021) Y  
);  
;
```

Output

	unique_product_2020	unique_product_2021	pct_change
▶	245	334	36.3265



Insights

1. The numbers of unique products increased from 245 in 2020 to 334 in 2021, a 36.33% growth.
2. This growth shows company's focus on innovation and meeting customer needs.

Requests
3.

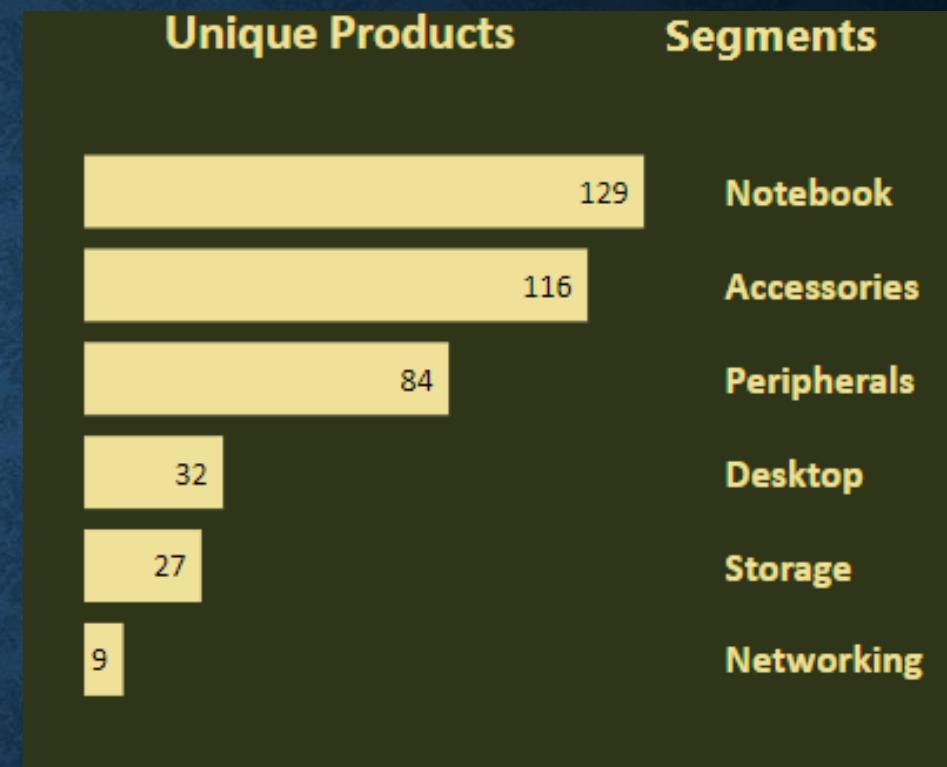
Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields, segment, product_count.

Input

```
SELECT segment,  
       COUNT(DISTINCT(product_code)) AS product_count  
  FROM dim_product  
 GROUP BY segment  
 ORDER BY product_count DESC  
 ;
```

Output

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



1. AtliQ excels in the Notebooks, Accessories, and Peripherals segment, making up 82.87% of their product range.
2. Desktops, Storage, and Networking represent a smaller portion at 17.13%.
3. In Desktops, Storage, and Networking segment AtliQ should focus on products that align with current customer trends and industry demands.

Insights

Requests

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.

Input

WITH CTE1 AS

```
(SELECT P.segment AS A, COUNT(DISTINCT(FS.product_code)) AS B  
  FROM dim_product P, fact_sales_monthly FS  
 WHERE P.product_code = FS.product_code  
 GROUP BY FS.fiscal_year, P.segment  
 HAVING FS.fiscal_year = "2020"),
```

CTE2 AS

```
(SELECT P.segment AS C, COUNT(DISTINCT(FS.product_code)) AS D  
  FROM dim_product P, fact_sales_monthly FS  
 WHERE P.product_code = FS.product_code  
 GROUP BY FS.fiscal_year, P.segment  
 HAVING FS.fiscal_year = "2021"  
)
```

```
SELECT CTE1.A AS segment, CTE1.B AS product_count_2020, CTE2.D AS  
product_count_2021,  
      (CTE2.D-CTE1.B) AS difference FROM CTE1, CTE2  
 WHERE CTE1.A = CTE2.C ;
```

Output

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

Segment	Product Count 2020	Product Count 2021	Difference	Change
Storage	12	17	5	▲
Peripherals	59	75	16	▲
Notebook	92	108	16	▲
Networking	6	9	3	▲
Desktop	7	22	15	▲
Accessories	69	103	34	▲

Insights

1. Accessories saw the biggest growth from 2020 to 2021, adding 34 new products.
2. Desktop product production surged by about 214% during the same period.
3. Storage and Networking segments are producing the least new products from 2020 to 2021.

Requests
5.

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

Input

```
SELECT F.product_code, P.product, F.manufacturing_cost
FROM fact_manufacturing_cost F
JOIN dim_product P
ON F.product_code = P.product_code
WHERE manufacturing_cost
IN (
    SELECT MAX(manufacturing_cost)
    FROM fact_manufacturing_cost
    UNION
    SELECT MIN(manufacturing_cost)
    FROM fact_manufacturing_cost
)
ORDER BY manufacturing_cost DESC ;
```

Output

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

Products having the
highest and **lowest**
manufacturing costs

240.54



A6120110206

AQ HOME Allin1 Gen 2

Personal Desktop

0.89



A2118150101

AQ Master wired x1 Ms

Mouse

Requests

6.

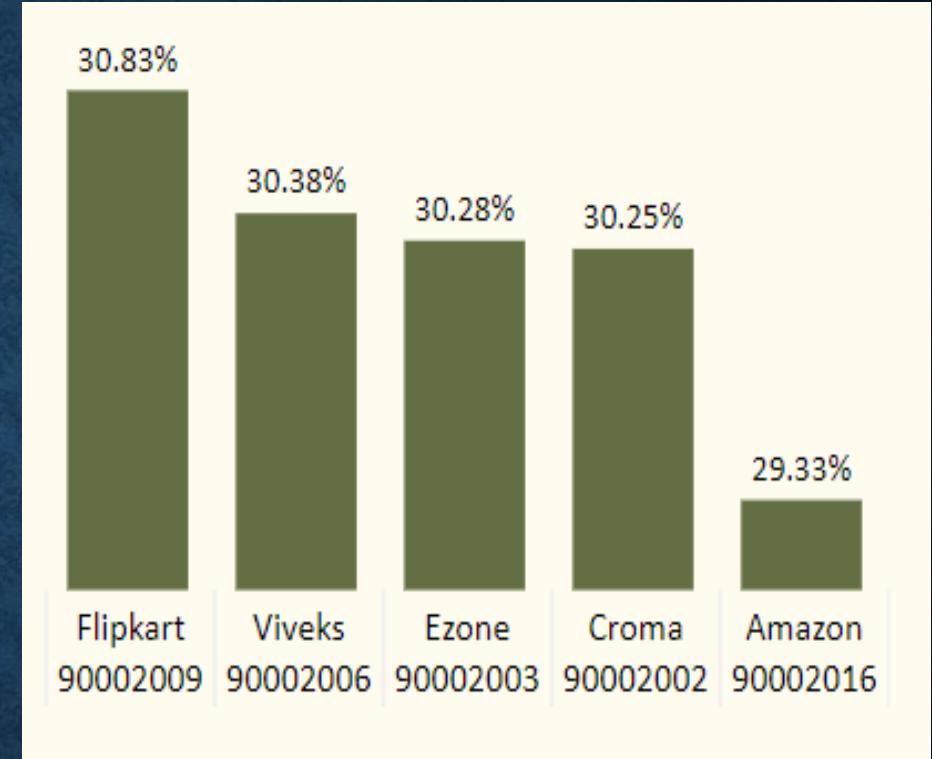
Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields, customer_code, customer, average_discount_percentage .

Input

```
SELECT c.customer_code, c.customer,
ROUND(AVG(pre_invoice_discount_pct),2) AS average_discount_percentage
FROM fact_pre_invoice_deductions d
JOIN dim_customer c
ON d.customer_code = c.customer_code
WHERE c.market = "India" AND fiscal_year = "2021"
GROUP BY customer_code,c.customer
ORDER BY average_discount_percentage DESC
LIMIT 5;
```

Output

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



Insights

1. Flipkart offers the highest average discount at 30.83%.
2. AtliQ provides similar discounts to its top 5 customers, ranging from 29.33% to 30.83%.

Requests

7.

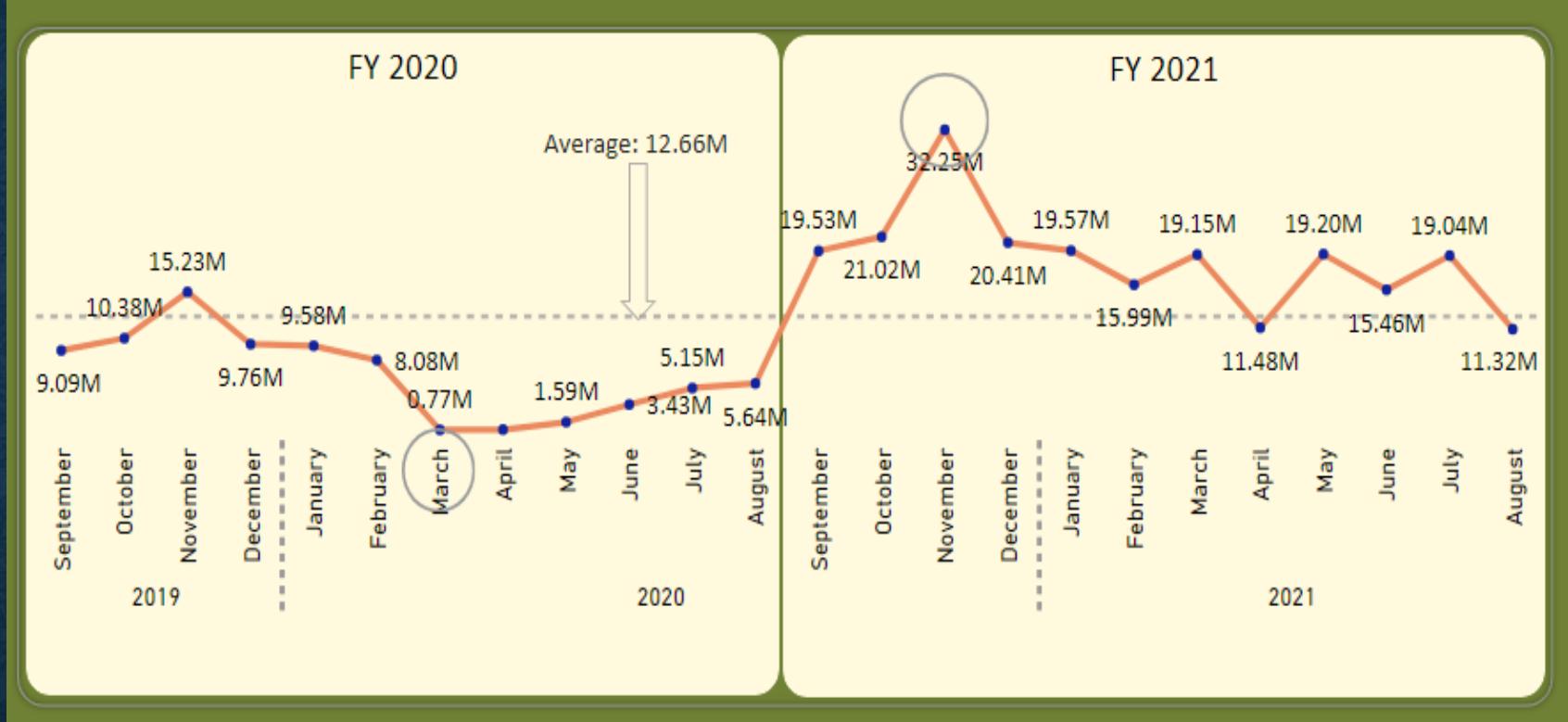
Get the complete report of the Gross sales amount for the customer “AtliQ Exclusive” for each month. This analysis helps to get an idea of low and high-performing months and take strategic decisions. The final report contains these columns: Month, Year, Gross sales Amount.

Input

```
SELECT CONCAT(MONTHNAME(FS.date), ' (' ,YEAR(FS.date), ')') AS 'Month',
FS.fiscal_year,
ROUND(SUM(G.gross_price*FS.sold_quantity), 2) AS Gross_sales_Amount
FROM fact_sales_monthly FS
JOIN dim_customer C
ON FS.customer_code = C.customer_code
JOIN fact_gross_price G
ON FS.product_code = G.product_code
WHERE C.customer = 'Atliq Exclusive'
GROUP BY Month, FS.fiscal_year
ORDER BY FS.fiscal_year
;
```

Output

Month	Year	Gross_sales
September	2020	9092670.3392
October	2020	10378637.5961
November	2020	15231894.9669
December	2020	9755795.0577
January	2020	9584951.9393
February	2020	8083995.5479
March	2020	766976.4531
April	2020	800071.9543
May	2020	1586964.4768
June	2020	3429736.5712
July	2020	5151815.4020
August	2020	5638281.8287
September	2021	19530271.3028
October	2021	21016218.2095
November	2021	32247289.7946
December	2021	20409063.1769
January	2021	19570701.7102
February	2021	15986603.8883
March	2021	19149624.9239
April	2021	11483530.3032
May	2021	19204309.4095
June	2021	15457579.6626
July	2021	19044968.8164
August	2021	11324548.3409



Insights

1. Sales were lowest in March, April, and May 2020 due to COVID-19 but started recovering after June.
2. November 2020 saw the highest sales at 15.23 million.
3. Sales grew significantly in 2021 compared to 2020.
4. In 2021, August had the lowest sales at 11.32 million, while November hit a peak of 32.25 million.

Requests
8.

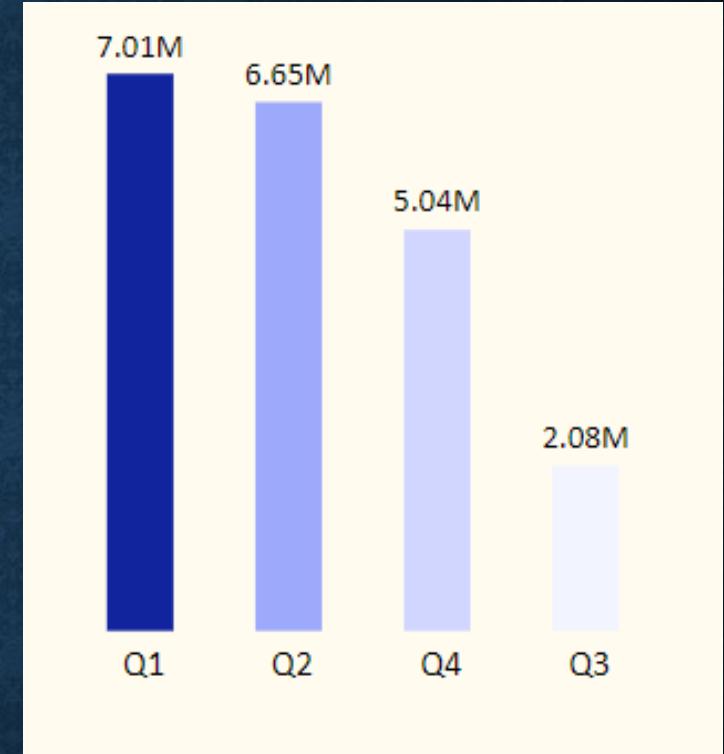
In which quarter of 2020, got the maximum total_sold_quantity? The final output contains these fields sorted by the total_sold_quantity, Quarter, total_sold_quantity.

Input

```
SELECT
    CASE
        WHEN MONTH(date) IN (9,10,11) THEN 'Q1'
        WHEN MONTH(date) IN (12,1,2) THEN 'Q2'
        WHEN MONTH(date) IN (3,4,5) THEN 'Q3'
        ELSE 'Q4'
    END AS quarters,
    SUM(sold_quantity) AS total_sold_quantity
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY Quarters
ORDER BY total_sold_quantity DESC;
```

Output

Quarter	total_sold_qty
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087



Insights

1. Q1 2020 had the highest sales volume at 7 million units, showing a strong start to the year.
2. Sales dropped sharply in Q3 (March-May) 2020, likely due to the COVID-19 pandemic.

Requests
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.

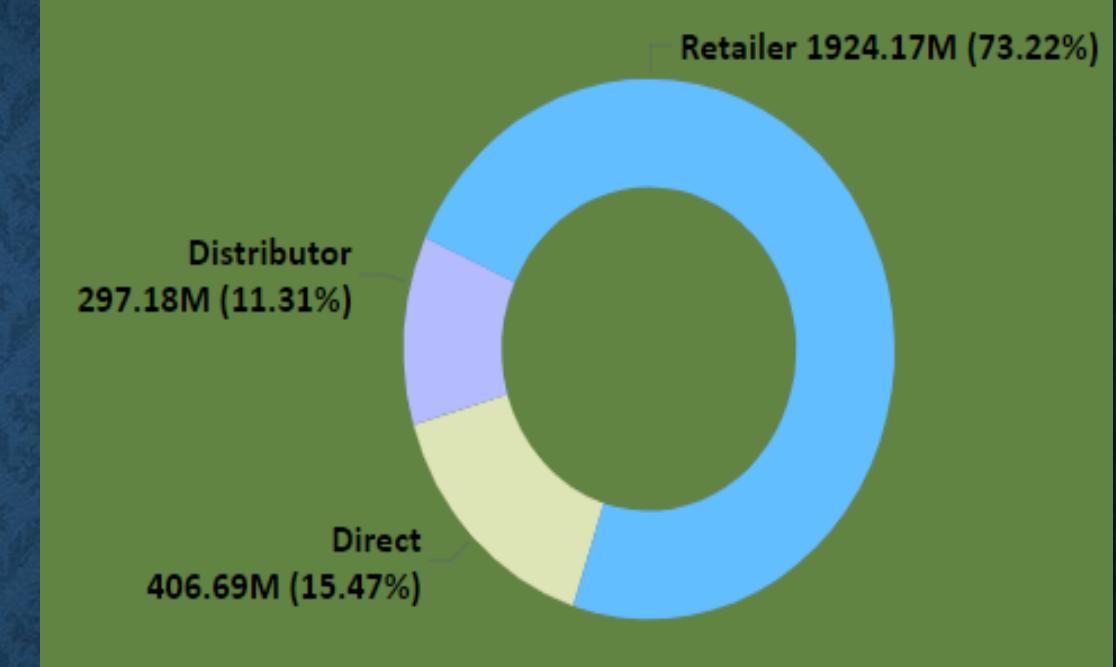
Input

```
WITH temp_table AS (
    SELECT c.channel,
           SUM(s.sold_quantity * g.gross_price) AS total_sales
      FROM fact_sales_monthly s
           JOIN fact_gross_price g ON s.product_code = g.product_code
           JOIN dim_customer c ON s.customer_code = c.customer_code
     WHERE s.fiscal_year = 2021
       GROUP BY c.channel
       ORDER BY total_sales DESC)

SELECT channel,
       ROUND(total_sales/1000000,2) AS gross_sales_in_millions,
       ROUND(total_sales/(SUM(total_sales) OVER())*100,2) AS percentage
  FROM temp_table ;
```

Output

channel	gross_sales_mln	pct_contribution
Retailer	1924.17	73.22 %
Direct	406.69	15.48 %
Distributor	297.18	11.31 %



Insights

1. Retailers drive most of AtliQ's sales, making up 73.22% of total gross sales.
2. Direct and distributor channels contribute 26.79%.

Requests
10.

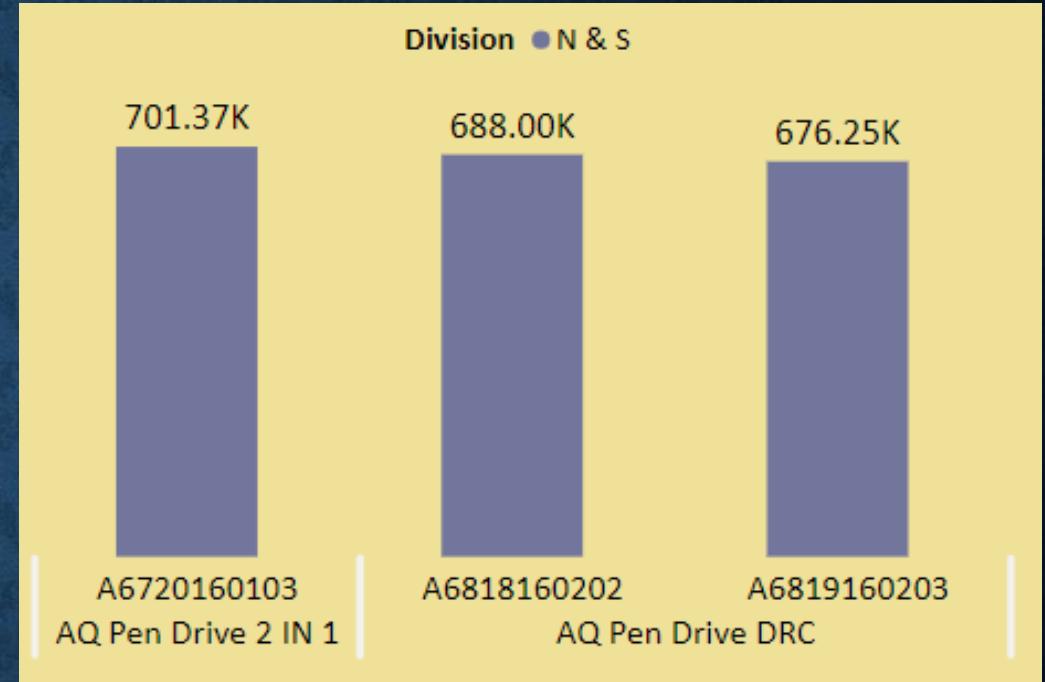
Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021? The final output contains these fields, division product_code product total_sold_quantity rank_order.

Input

```
WITH temp_table AS (
    SELECT division,
        s.product_code,
        CONCAT(p.product, " ", "(" ,p.variant, ")" ) AS product ,
        SUM(sold_quantity) AS total_sold_quantity,
        RANK() OVER (PARTITION BY division ORDER BY sum(sold_quantity) DESC) AS rank_order
    FROM fact_sales_monthly s
    JOIN dim_product p ON s.product_code = p.product_code
    WHERE fiscal_year = 2021
    GROUP BY division, s.product_code, p.product, p.variant
)
SELECT * FROM temp_table
WHERE rank_order IN (1,2,3);
```

Output

division	product_code	product	total_sold_qty	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



Insights

1. In the N&S division, pen drives dominate the top three spots.
2. The P&A division's top three products are all mice.
3. The PC division's bestsellers are **personal laptops**.



RECOMMENDATIONS

1. Prioritize growth in the Desktops, Storage, and Networking segment to expand market share.
2. Leverage multi-channel marketing for broader reach and engagement.
3. Combine competitive pricing with compelling promotions to attract and retain customers.
4. Actively incorporate customer feedback to drive continuous improvement.
5. Invest in sales team training to enhance performance and achieve business goals.



**THANK YOU
FOR WATCHING !**