

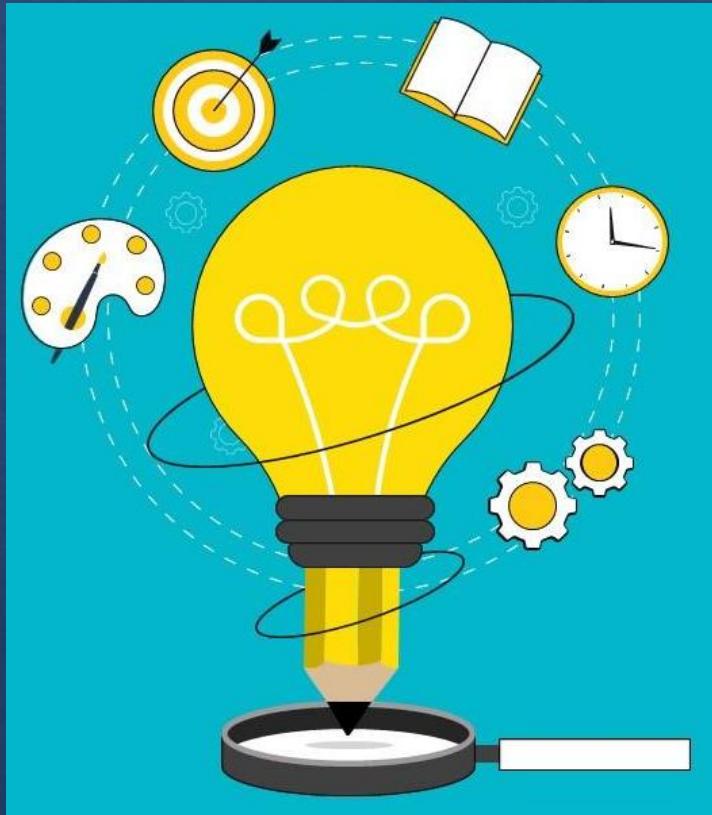


Ad-Hoc Insights

Consumer goods

Presented by : Puneeth H R

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Company Overview

AtliQ Hardwares (imaginary company) is one of the leading computer hardware producers in India and well expanded in other countries too.

Problem Statement

- Management recognized a gap in insights needed for fast, data-driven decision-making.
- To address this, they decided to expand the data analytics team by hiring several junior analysts.
- Tony Sharma, the data analytics director, is looking for candidates with a strong mix of technical and soft skills.
- To assess these abilities, Tony opted for an SQL challenge as part of the evaluation process.

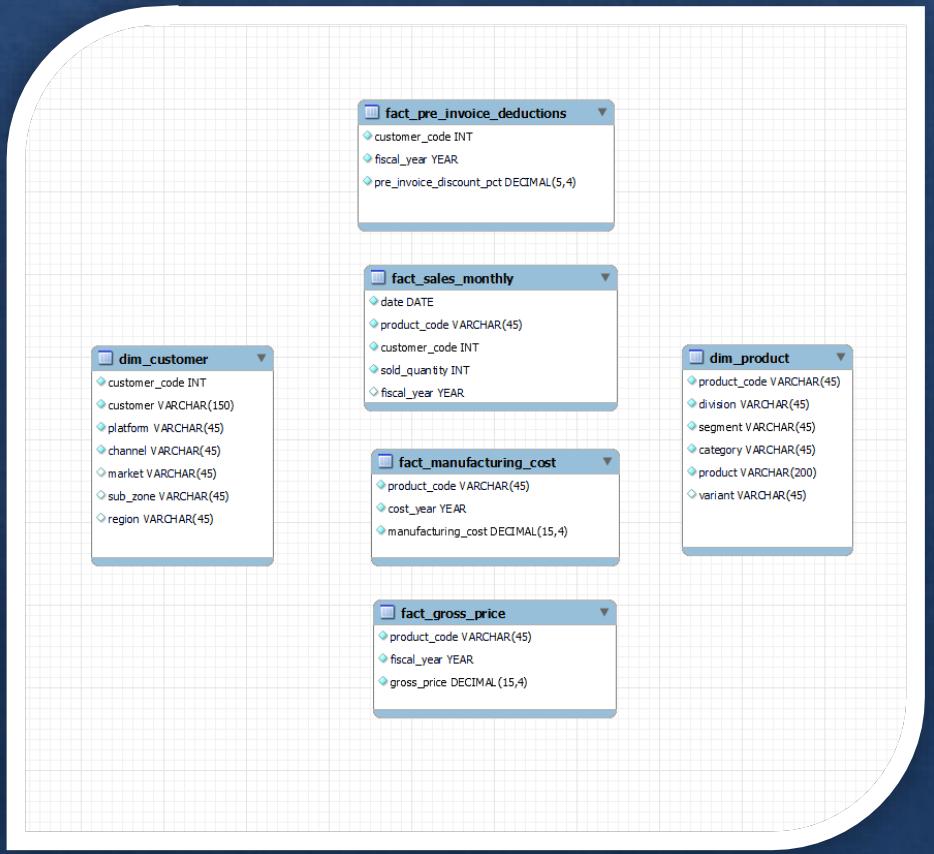


Markets





Dataset



Tools Used



Ad-hoc requests , output and insights

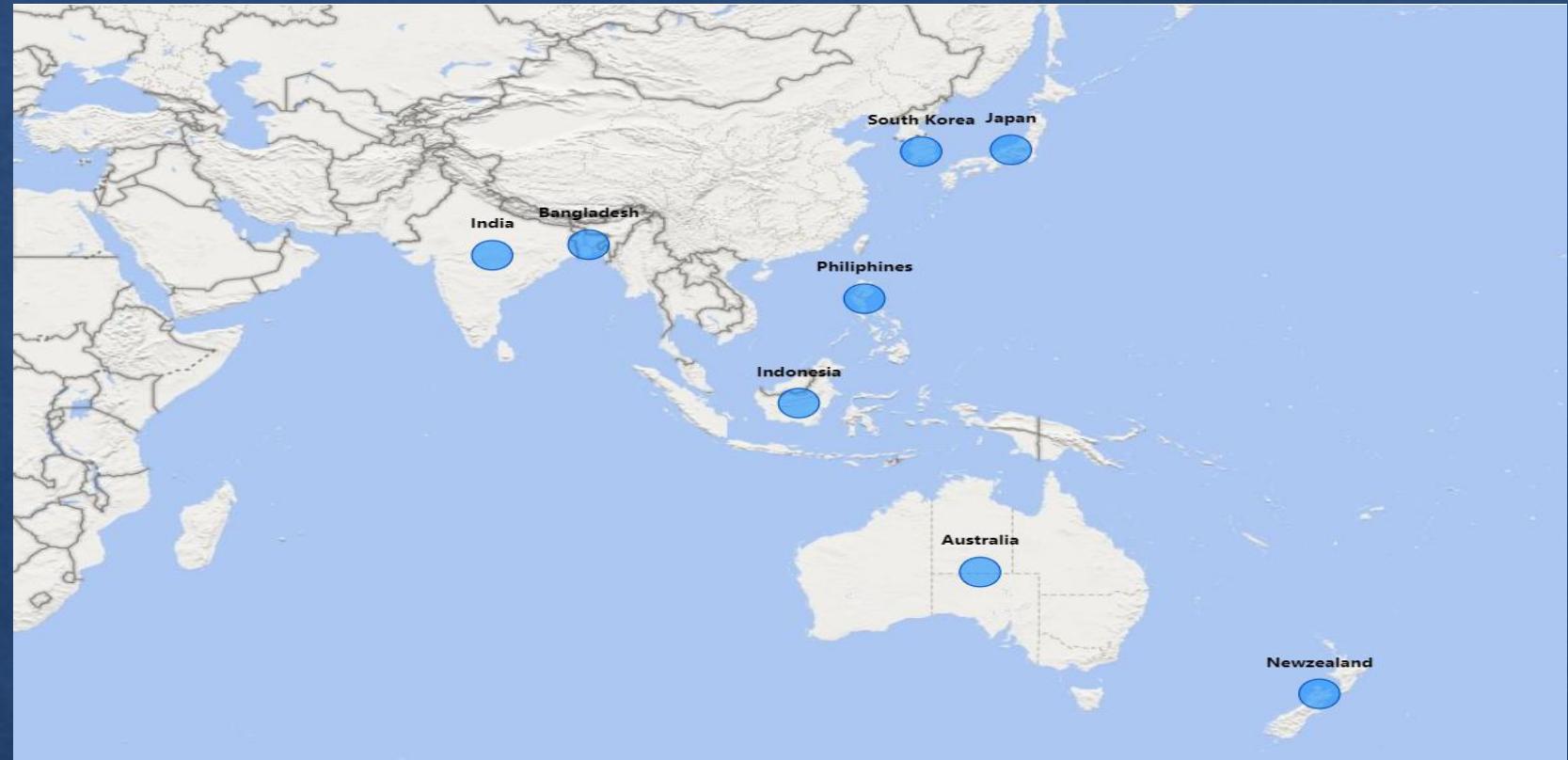
Request. 1. Provide the list of markets in which customer "AtliQ Exclusive" operates its business in the APAC region.

Input

```
select  
    distinct market  
from dim_customer  
where customer = "AtliQ exclusive"  
and  
region = "APAC"  
;
```

Output:

market
▶ India
Indonesia
Japan
Philippines
South Korea
Australia
Newzealand
Bangladesh



Insight: AtliQ Exclusive has established a strong market presence across the APAC region, operating in eight countries.

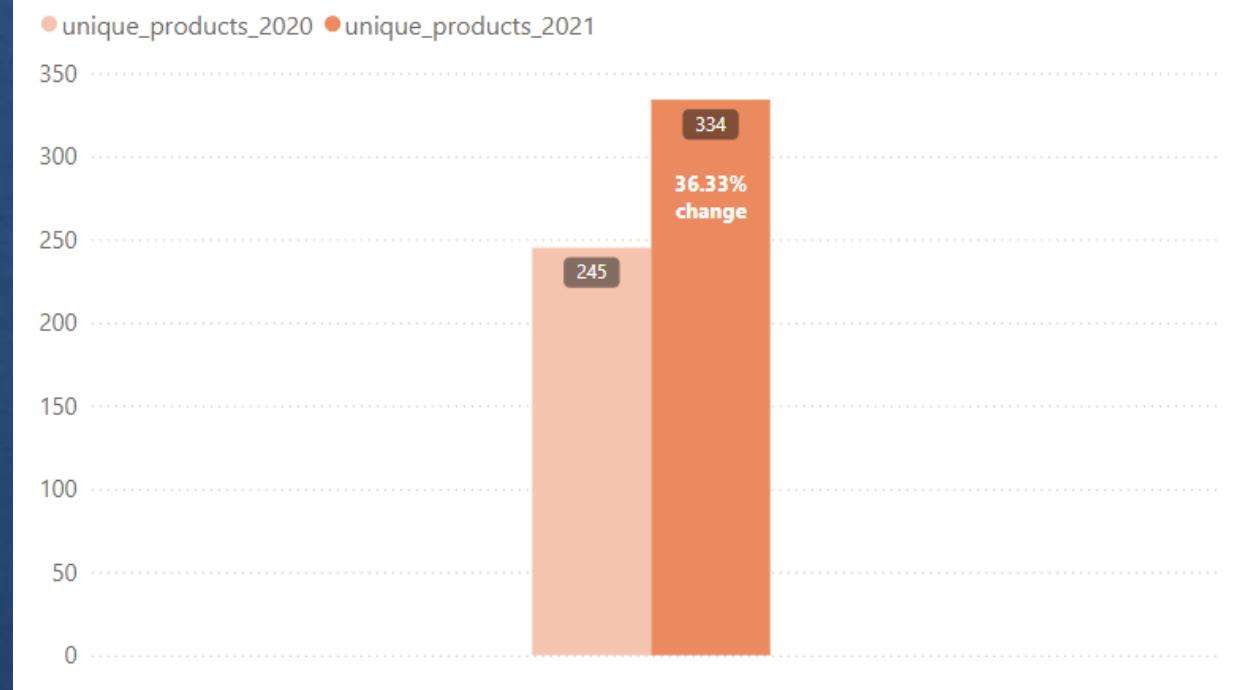
Request. 2. What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields, `unique_products_2020`, `unique_products_2021`, `percentage_chg`.

Input:

```
SELECT  
    COUNT(DISTINCT CASE  
        WHEN fiscal_year = 2020 THEN PRODUCT_CODE  
        END) AS unique_products_20,  
    COUNT(DISTINCT CASE  
        WHEN fiscal_year = 2021 THEN PRODUCT_CODE  
        END) AS unique_products_21,  
    (COUNT(DISTINCT CASE WHEN fiscal_year = 2021 THEN PRODUCT_CODE  
        END)-  
    COUNT(DISTINCT CASE WHEN fiscal_year = 2020 THEN PRODUCT_CODE  
        END))*100/nullif (COUNT(DISTINCT CASE WHEN fiscal_year = 2020 THEN  
        PRODUCT_CODE END),0) as pct_chg  
from  
fact_sales_monthly;
```

Output

unique_product_2020	unique_product_2021	pct_change
245	334	36.3265



Insight:

- 1.The variety of unique products expanded from 245 in 2020 to 334 in 2021, reflecting a 36.33% growth.
- 2.This substantial growth underscores the company's dedication to innovation and catering to diverse customer demands.

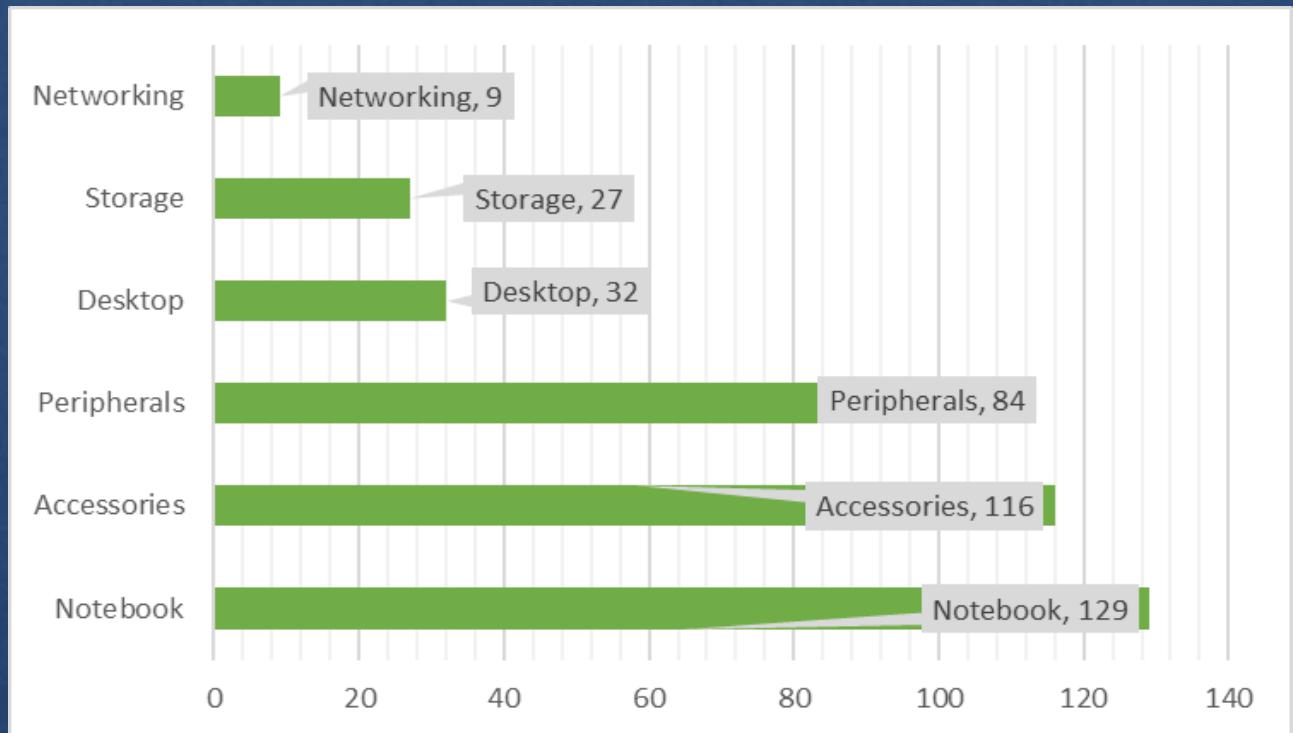
Request. 3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields, segment, product_count.

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



Insights:

1. AtliQ excels in the Notebooks, Accessories, and Peripherals segment, making up an impressive 82.87% of its product variety.
2. Desktops, Storage, and Networking represent a smaller portion of AtliQ's portfolio, accounting for 17.13%.
3. To strengthen its presence in Desktops, Storage, and Networking, AtliQ should prioritize products that align with evolving customer trends and industry demands.

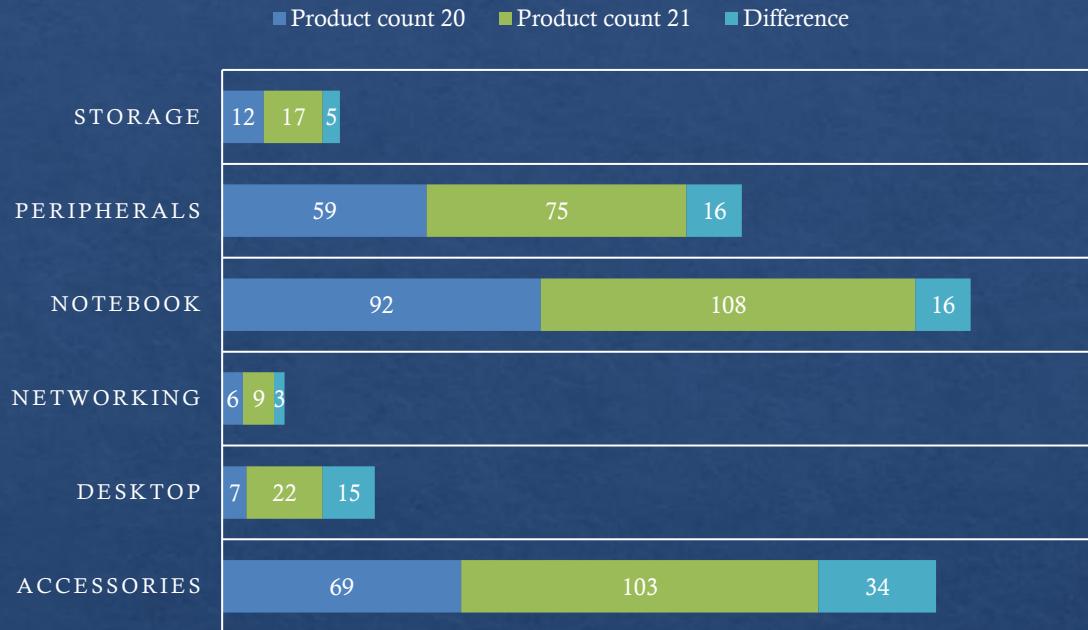
Request. 4. Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields, segment, product_count_2020, product_count_2021, difference.

Input:

```
with unique_products as(
    select
        p.segment,
        count(distinct(case when fiscal_year = 2020 then s.product_code end)) as product_count_2020,
        count(distinct(case when fiscal_year = 2021 then s.Product_code end)) as product_count_2021
    from fact_sales_monthly s
    join dim_product p
        on s.product_code = p.product_code
    group by p.segment
)
select
    *,
    product_count_2021-product_count_2020 as difference
from unique_products
order by difference desc
;
```

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



Insights:

1. Accessories saw the highest growth in product count from 2020 to 2021, adding 34 new products.
2. Desktop product production surged significantly, increasing by approximately 214% during the same period.
3. The Storage and Networking segments introduced the fewest new products from 2020 to 2021.

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 .

Input

```
(select
    p.product_code,
    p.product,
    m.manufacturing_cost
  from dim_product p
  join fact_manufacturing_cost m
    on p.product_code = m.product_code
  order by m.manufacturing_cost desc limit 1)
```

union

```
(select
    p.product_code,
    p.product,
    m.manufacturing_cost
  from dim_product p
  join fact_manufacturing_cost m
    on p.product_code = m.product_code
  order by m.manufacturing_cost asc limit 1);
```

Output:

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

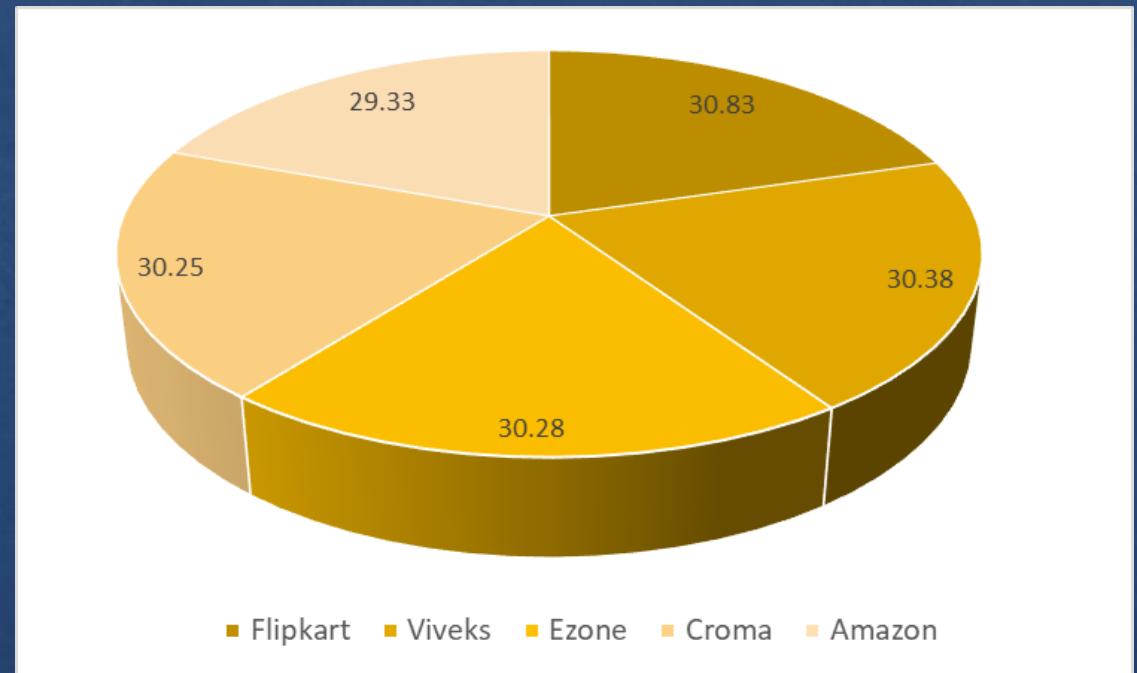
Request. 6. Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields, customer_code, customer, average_discount_percentage .

Input:

```
with cte1 as(
    SELECT
        *
    from fact_pre_invoice_deductions
    join dim_customer c
        using (customer_code)
    where fiscal_year = 2021
    and c. market = 'india'
)
select
    customer_code,
    customer,
    concat(round(avg(pre_invoice_discount_pct)*100,2),"%) as avg_discount_pct
from cte1
group by customer_code, customer
order by avg(pre_invoice_discount_pct)*100 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 tops the list with the highest average discount percentage at 30.83%.
2. AtliQ has maintained relatively consistent discount percentages for its top five customers, ranging narrowly from 29.33% to 30.83%.

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.

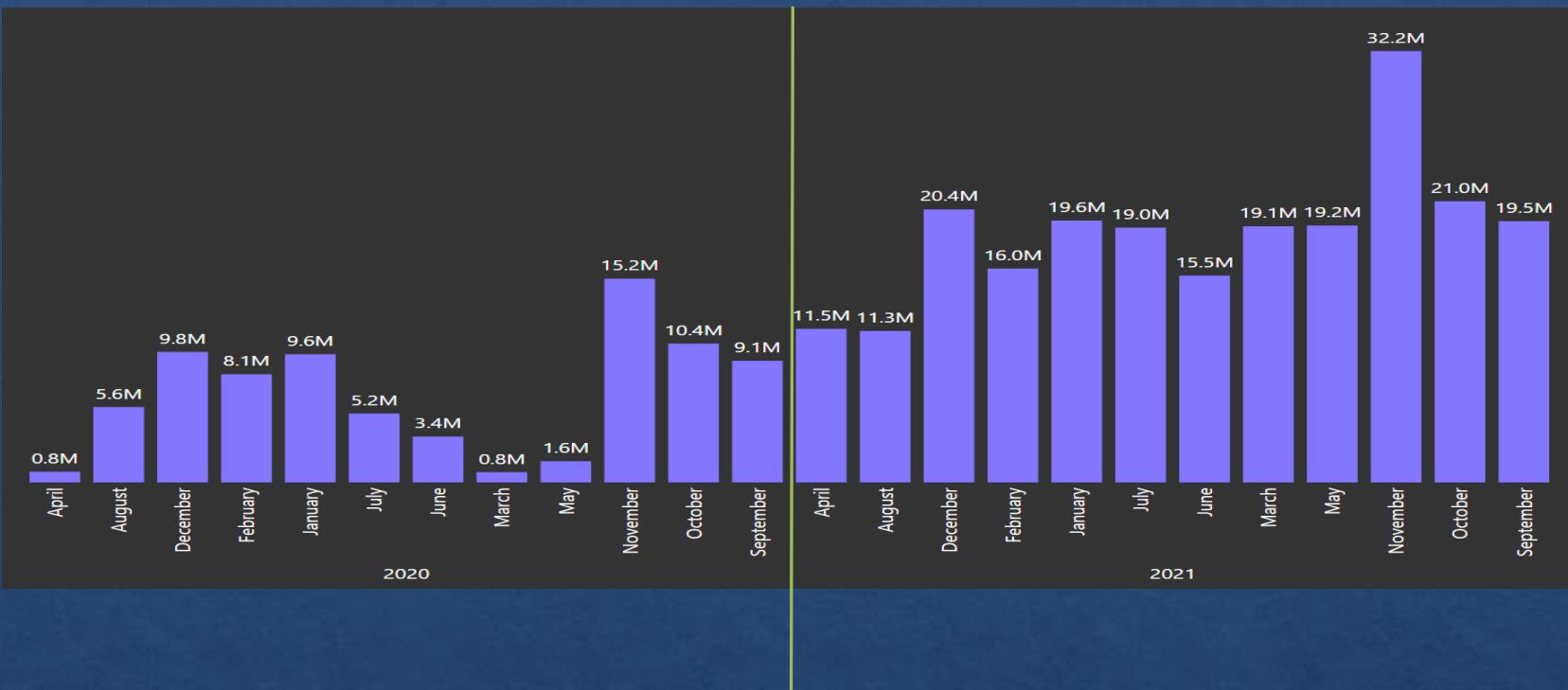
Input
:

Select

```
monthname(s.date) as Month ,  
s.fiscal_year as Year,  
sum(sold_quantity*gross_price) as Gross_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 customer = "AtliQ Exclusive"  
group by month,year  
order by year asc  
;
```

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 at their lowest in March, April, and May 2020, likely due to the COVID-19 pandemic, but began recovering after June.
- 2.November 2020 saw the highest sales, reaching approximately 15.23 million.
- 3.Sales in 2021 showed significant growth compared to the previous year.
- 4.In 2021, August recorded the lowest sales at 11.32 million, while November saw the highest sales, soaring to 32.25 million.

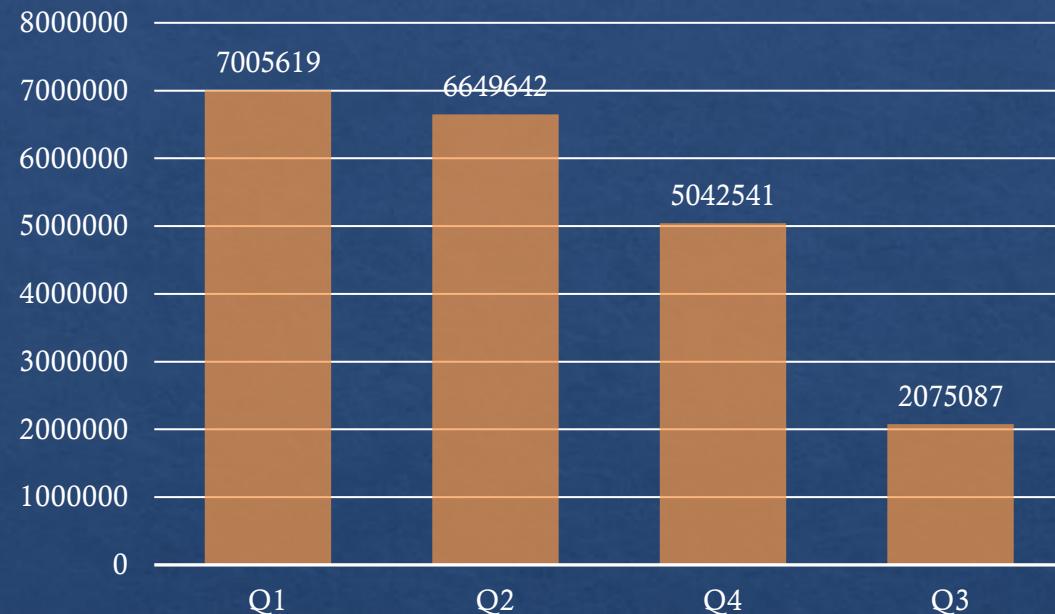
Request. 8. In which quarter of 2020, got the maximum total_sold_quantity? The final output contains these fields sorted by the total_sold_quantity, Quarter, total_sold_quantity.

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"
        when month(date) in (6, 7, 8) then "Q4"
    end) as Quarter,
    sum(sold_quantity) as total_sold_qty
from fact_sales_monthly
where fiscal_year = 2020
group by Quarter
order by total_sold_qty desc
;
```

Output:

	Quarter	total_sold_qty
▶	Q1	7005619
	Q2	6649642
	Q4	5042541
	Q3	2075087



Insights:

- 1.Q1 2020 recorded the highest sales volume, reaching approximately 7 million units, showcasing a strong start to the year.
- 2.AtliQ faced a sharp decline in sales during Q3 (March, April, May), likely due to the COVID-19 pandemic, highlighting challenging market conditions and shifting consumer behavior.

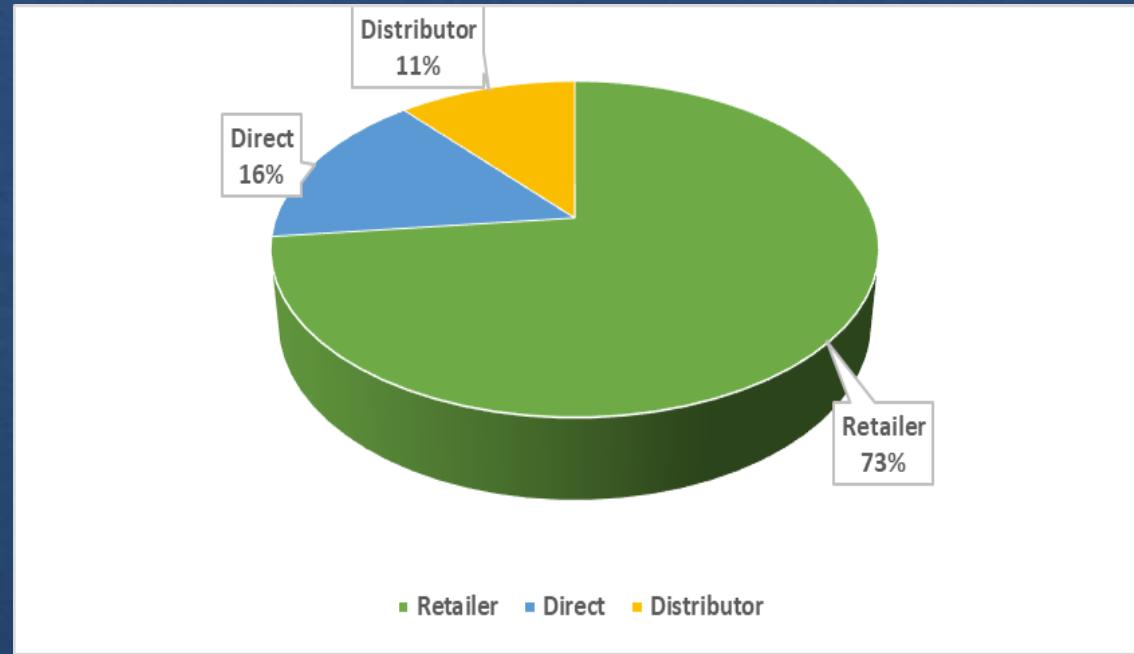
Request. 9. Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution? The final output contains these fields, channel, gross_sales_mln, percentage.

Input:

```
with cte1 as (
    select
        c.channel,
        round(sum((s.sold_quantity*g.gross_price)/1000000),2) as gross_sales_mln
        from dim_customer c
        join fact_sales_monthly s
            on c.customer_code = s.customer_code
        join fact_gross_price g
            on s.product_code = g.product_code
        where s.fiscal_year = 2021
        group by c.channel
)
select
    *,
    concat(round(gross_sales_mln*100/ (select sum(gross_sales_mln) from cte1),2)," %") as pct_contribution
    from cte1
    order by pct_contribution desc;
```

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 the majority of AtliQ's sales, contributing a significant 73.22% of total gross sales.
- 2.The direct and distributor channels collectively account for only 26.79% of total sales.

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.

Input:

```
with cte1 as(
    select
        p.division,
        s.product_code,
        concat(p.product," (", p.variant,")") as product,
        sum(s.sold_quantity) as total_sold_qty,
        rank() over(partition by p.division order by sum(s.sold_quantity) desc) as
        rank_order
    from dim_product p
    join fact_sales_monthly s
        on p.product_code = s.product_code
    where fiscal_year = 2021
    group by p.division,s.product_code,p.product
)
select
    *
from cte1
where rank_order in (1,2,3)
order by division, rank_order asc
; 
```

Output:

	division	product_code	product	total_sold_qty	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1 (Premium)	701373	1	
	A6818160202	AQ Pen Drive DRC (Plus)	688003	2	
	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 hold the top three spots, highlighting their strong sales performance and popularity.
- 2.The P & A division's top three bestsellers are all mice, indicating a strong demand for these devices.
- 3.The PC division's top-performing products are exclusively personal laptops.

Recommendations

- 1. Prioritize growth in the Desktops, Storage, and Networking segments.**
- 2. Strengthen multi-channel marketing efforts to enhance reach and engagement.**
- 3. Integrate strategic pricing with compelling promotions to drive sales.**
- 4. Continuously refine products and services based on customer feedback.**
- 5. Invest in sales team training to boost performance and effectiveness.**

Thankyou!