



#CHALLENGE4

Consumer Goods

Ad-Hoc Insight

SQL Challenge



By Cecilia Enrich





Introduction

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

It has total of 74 customers, in 27 Countries worldwide

It has 3 main division of products:

- **Peripherals and Accessories (P&A)**
- **Network and Storage (N&A)**
- **Personal Computers (PC)**



Available Data

The database provides information for six main tables:

1. **dim_customer**: contains customer-related data
2. **dim_product**: contains product-related data
3. **fact_gross_price**: contains gross price information for each product
4. **fact_manufacturing_cost**: contains the cost incurred in the production of each product
5. **fact_pre_invoice_deductions**: contains pre-invoice deductions information for each product
6. **fact_sales_monthly**: contains monthly sales data for each product.



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

Query

```
SELECT DISTINCT market  
FROM gdb023.dim_customer  
WHERE region = 'APAC'  
AND customer = "Atliq Exclusive";
```

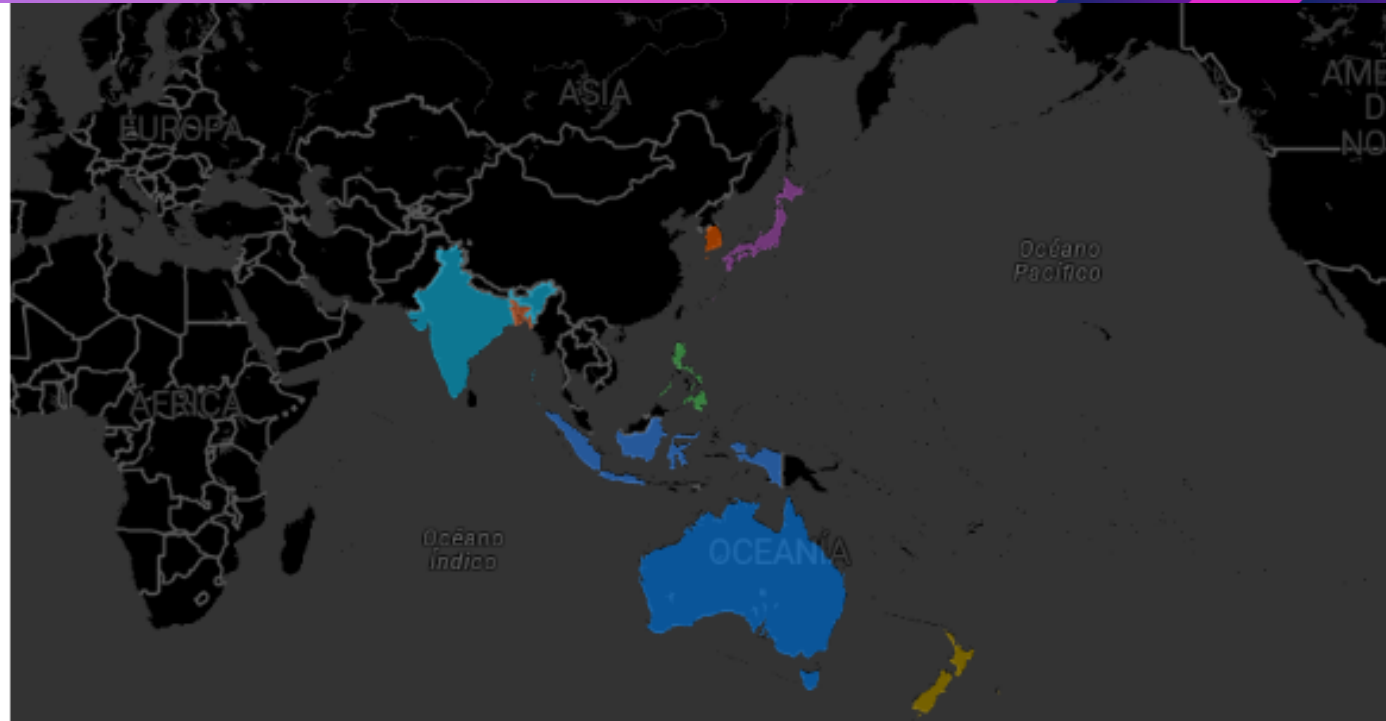



Atliq Exclusive Customer, operates its Business in the APAC region in the following markets:

Ad- Hoc Request 1

- **Australia**
- **Bangladesh**
- **Indonesia**
- **Japan**
- **NewZealand**
- **Philiphines**
- **South Korea**

	market
▶	India
	Indonesia
	Japan
	Philiphines
	South Korea
	Australia
	Newzealand
	Bangladesh





What is the percentage of unique product increase in 2021 vs. 2020?

Query

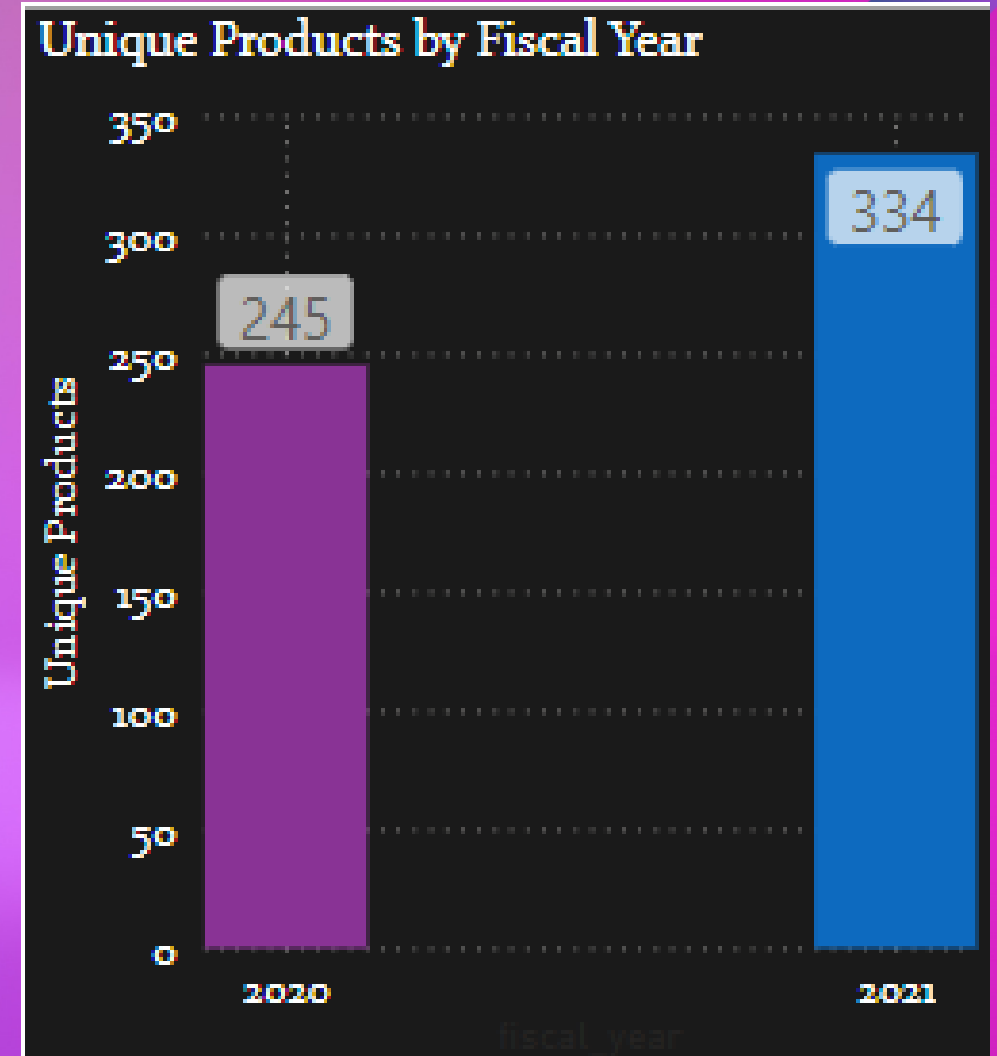
```
WITH products_2020 as (  
    SELECT count(distinct(product_code)) as unique_p2020 from gdb023.fact_sales_monthly  
    WHERE fiscal_year = '2020' ),  
products_2021 as (  
    SELECT count(distinct(product_code)) as unique_p2021 from gdb023.fact_sales_monthly  
    WHERE fiscal_year = '2021' )  
SELECT  
    unique_p2020,  
    unique_p2021,  
    round(  
        (  
            unique_p2021 - unique_p2020  
        ) * 100 / unique_p2020,  
        2  
    ) AS percentage_change  
  
FROM products_2020 CROSS  
JOIN products_2021;
```



Insights: The percentage of unique product increase in 2021 vs. 2020 was up to 36%

OUTPUT

unique_p2020	unique_p2021	percentage_change
245	334	36.33





Provide a report with all the unique product counts for each segment and sort them in descending order of product counts

Query

```
SELECT segment, COUNT(distinct(product_code)) as Product_count  
FROM gdb023.dim_product  
group by segment  
ORDER BY Product_count DESC;
```




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Insights:

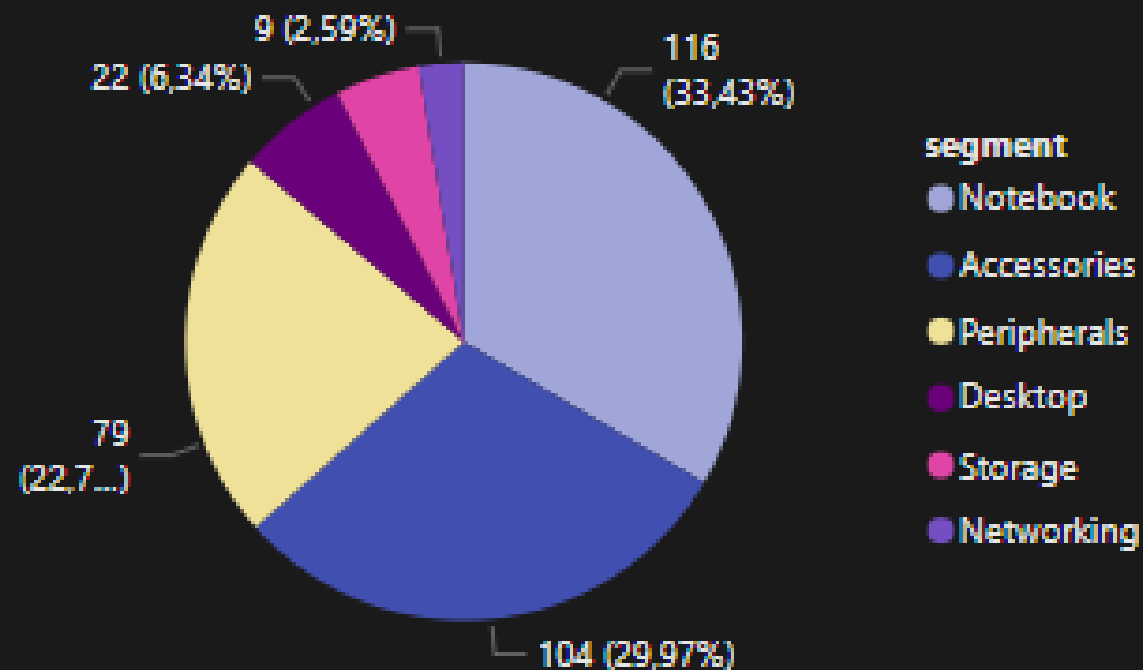
The most importante Segment is " Notebook".

The segments "Notebook", "Accesories" and "Periherials", they represent all together more than 86% of the total

OUTPUT

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

Unique Products by Segment



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Ad- Hoc Request 4



Which segment had the most increase in unique products in 2021 vs 2020?

```
WITH products_2020_ as (  
  SELECT p.segment, count(distinct(product_code)) as pcount_2020, fiscal_year from gdb023.dim_product p  
  JOIN gdb023.fact_sales_monthly s USING (product_code)  
  WHERE fiscal_year = '2020'  
  group by segment  
) ,  
products_2021_ as (  
  SELECT p.segment, count(distinct(product_code)) as pcount_2021, fiscal_year from gdb023.dim_product p  
  JOIN gdb023.fact_sales_monthly s USING (product_code)  
  WHERE fiscal_year = '2021'  
  group by segment )  
  
SELECT segment, pcount_2020, pcount_2021, pcount_2021 - pcount_2020 AS difference  
FROM products_2020_  
  JOIN products_2021_ USING (segment)  
  GROUP BY segment  
  ORDER BY difference DESC;
```

Query

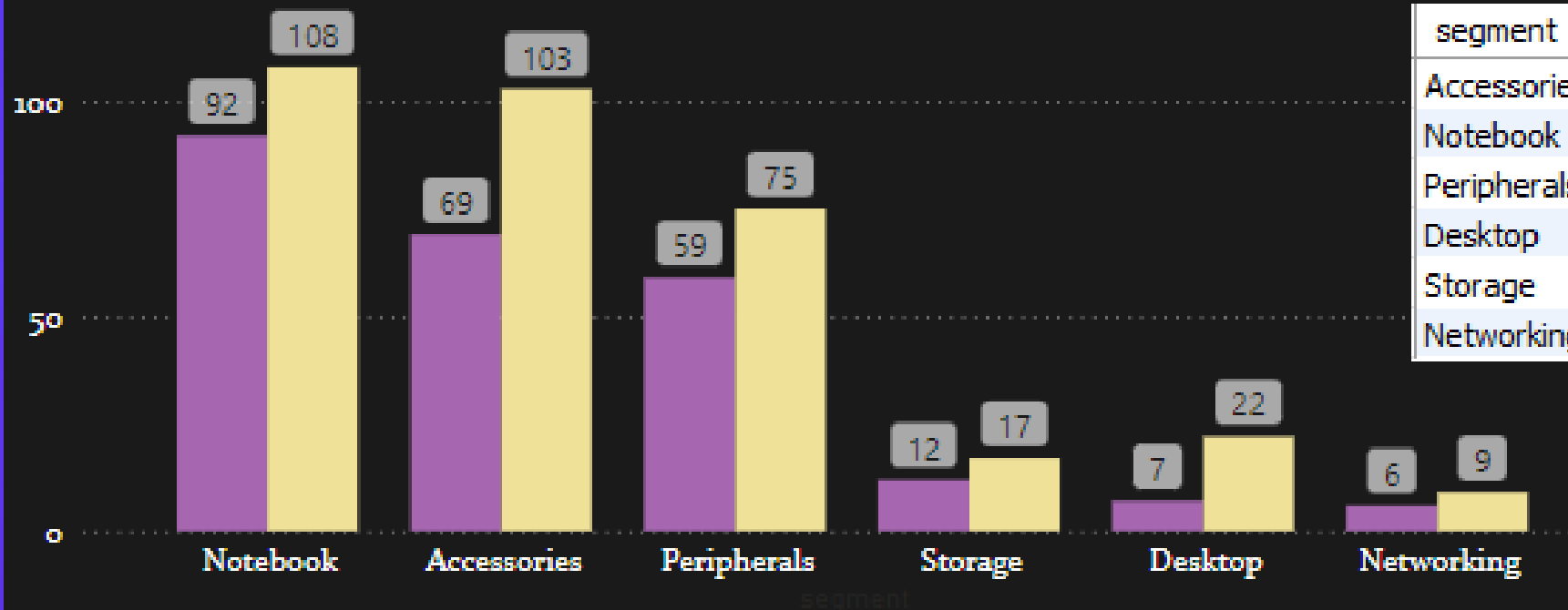
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Insights:

The segment that had the most increase in unique products in 2021 vs 2020 is "Accessories", and the one that had the less increase is "Networking"

Unique Products by Segment

2020 2021



OUTPUT

segment	pcount_2020	pcount_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



Get the products that have the highest and lowest manufacturing costs.

```
WITH cost_by_product as (  
  SELECT p.product_code , p.product, avg( m.manufacturing_cost) as cost_  
  FROM gdb023.dim_product  p  
  JOIN gdb023.fact_manufacturing_cost m USING (product_code)  
  
  GROUP BY  p.product, p.product_code)  
  
  SELECT product_code , product, cost_  
  FROM cost_by_product  
  WHERE cost_ = ( SELECT max(cost_) from cost_by_product  )  
  OR cost_ = ( SELECT min(cost_) from cost_by_product  )  
  
  ORDER BY cost_ DESC  
;
```

Query



product_code	product	cost_
A6120110206	AQ HOME Allin1 Ge...	240.53640000
A2118150101	AQ Master wired x...	0.90575000

Insights:

The product that has the highest manufacturing cost is A6120110206, with a average cost of \$240,53 and the product that has de lowest manufacturing cost is product code A2118150101 with a average Cost of \$0.90



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

Query

```
SELECT c.customer , c.customer_code, round( avg( i.pre_invoice_discount_pct),4) as avg_discount, i.fiscal_year
  from gdb023.fact_pre_invoice_deductions i
JOIN gdb023.dim_customer c USING (customer_code)
WHERE
  fiscal_year = 2021
  AND market = "India"
GROUP BY  i.fiscal_year, c.customer_code, c.customer
ORDER BY avg_discount DESC

LIMIT 5;
```

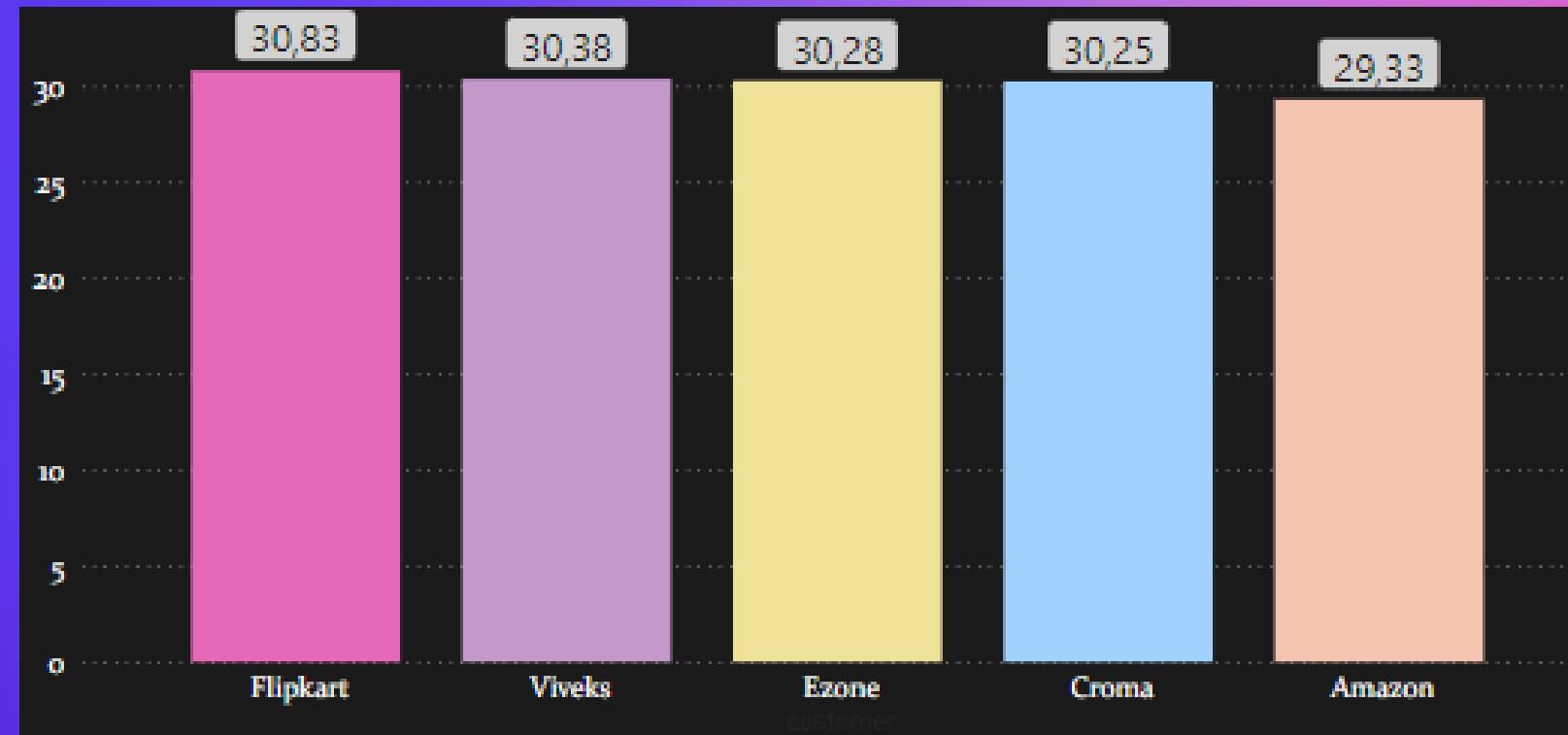
Insights:

The discounts on fiscal year 2021, where in general where near to the 30 % , in some cases near 20%

The top 5 Customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market where:

- Flipkart
- Viveks
- Ezone
- Croma
- Amazon

OUTPUT



customer	customer_code	avg_discount	fiscal_year
Flipkart	90002009	0.3083	2021
Viveks	90002006	0.3038	2021
Ezone	90002003	0.3028	2021
Croma	90002002	0.3025	2021
Amazon	90002016	0.2933	2021





Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month.

```
SELECT monthname(sm.date) as month_ , sm.fiscal_year ,  
round(SUM(f.gross_price * sm.sold_quantity),2) as gross_sales_amount  
FROM gdb023.fact_gross_price gp  
JOIN gdb023.fact_sales_monthly sm USING (product_code)  
JOIN gdb023.dim_customer c USING (customer_code)  
JOIN gdb023.fact_gross_price f USING( product_code)  
WHERE c.customer = 'Atliq Exclusive'  
GROUP BY  
    monthname(sm.date),  
    fiscal_year  
ORDER BY  
    sm.fiscal_year;
```

Query

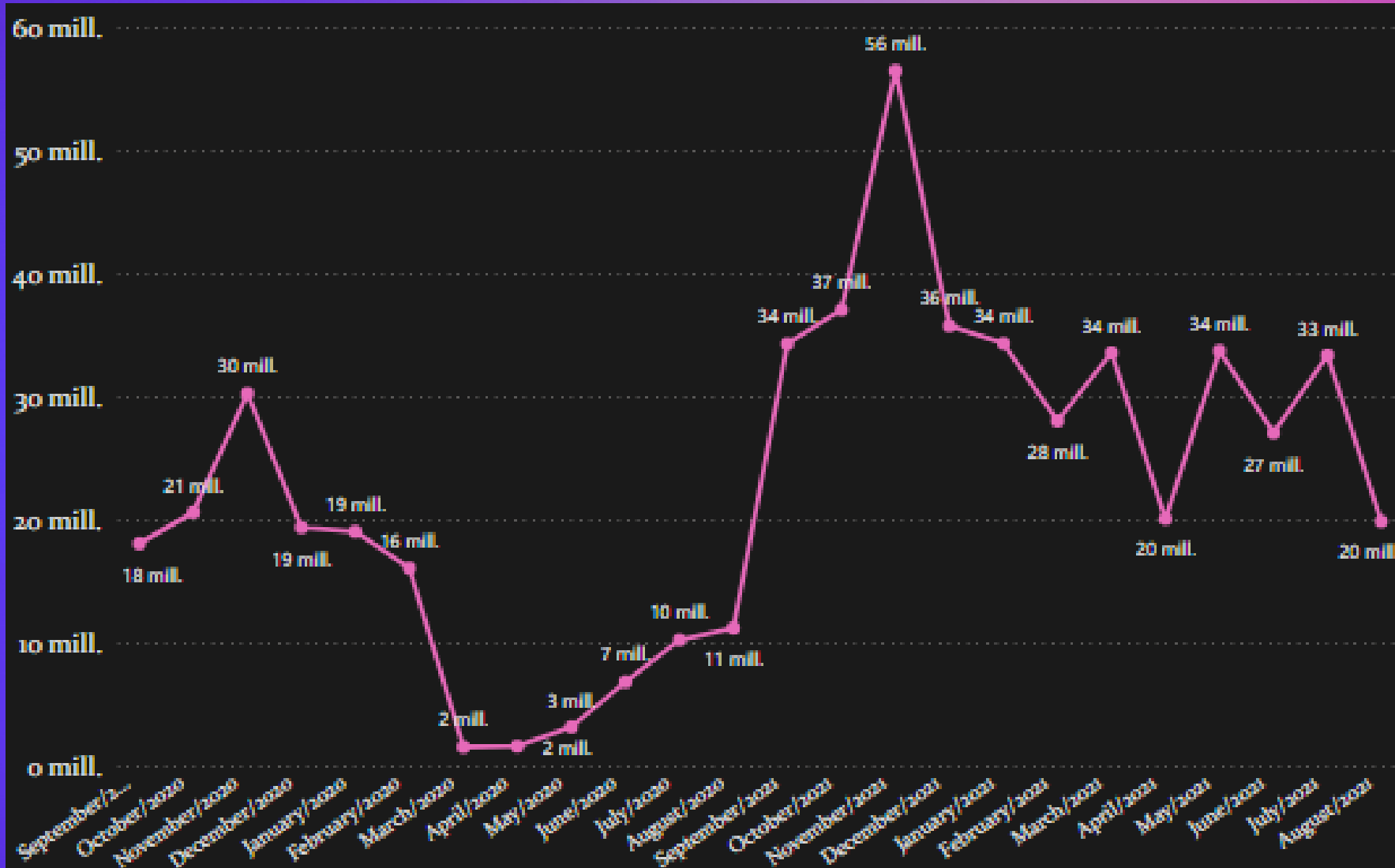
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Insights: We can see how the sales go up in October in both years and also go down from February to March.

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OUTPUT



month_	fiscal_year	gross_sales_amount
September	2020	18043563.80
October	2020	20595332.83
November	2020	30250607.55
December	2020	19357352.01
January	2020	19021702.90
February	2020	16047398.63
March	2020	1523596.63
April	2020	1589449.87
May	2020	3151450.72
June	2020	6809150.54
July	2020	10217114.63
August	2020	11191644.12
September	2021	34282400.67
October	2021	37051385.30
November	2021	56476819.80
December	2021	35750036.10
January	2021	34311960.04
February	2021	28024426.03
March	2021	33547351.53
April	2021	20055934.25

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In which quarter of 2020, got the maximum total_sold_quantity?

```
• 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 quarter,
  SUM(sold_quantity) AS total_sold_quantity
FROM
  gdb023.fact_sales_monthly
WHERE
  fiscal_year = 2020
GROUP BY
  quarter
ORDER BY
  total_sold_quantity DESC;
```

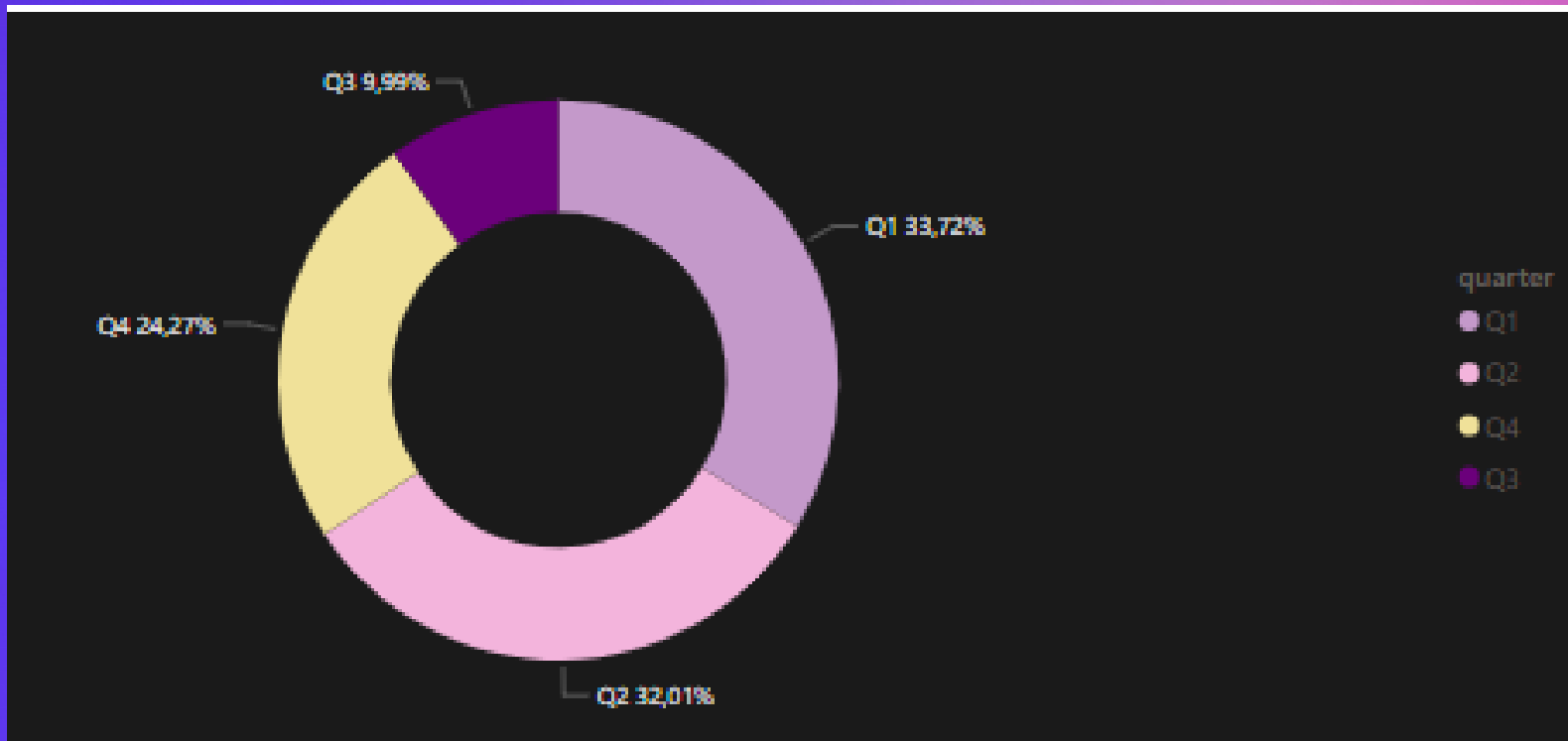


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Insights: The most importante Quarter is the Q1, than in this company,
includes de months of: Septiembre, October, November

OUTPUT



quarter	total_sold_quantity
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087

Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution?



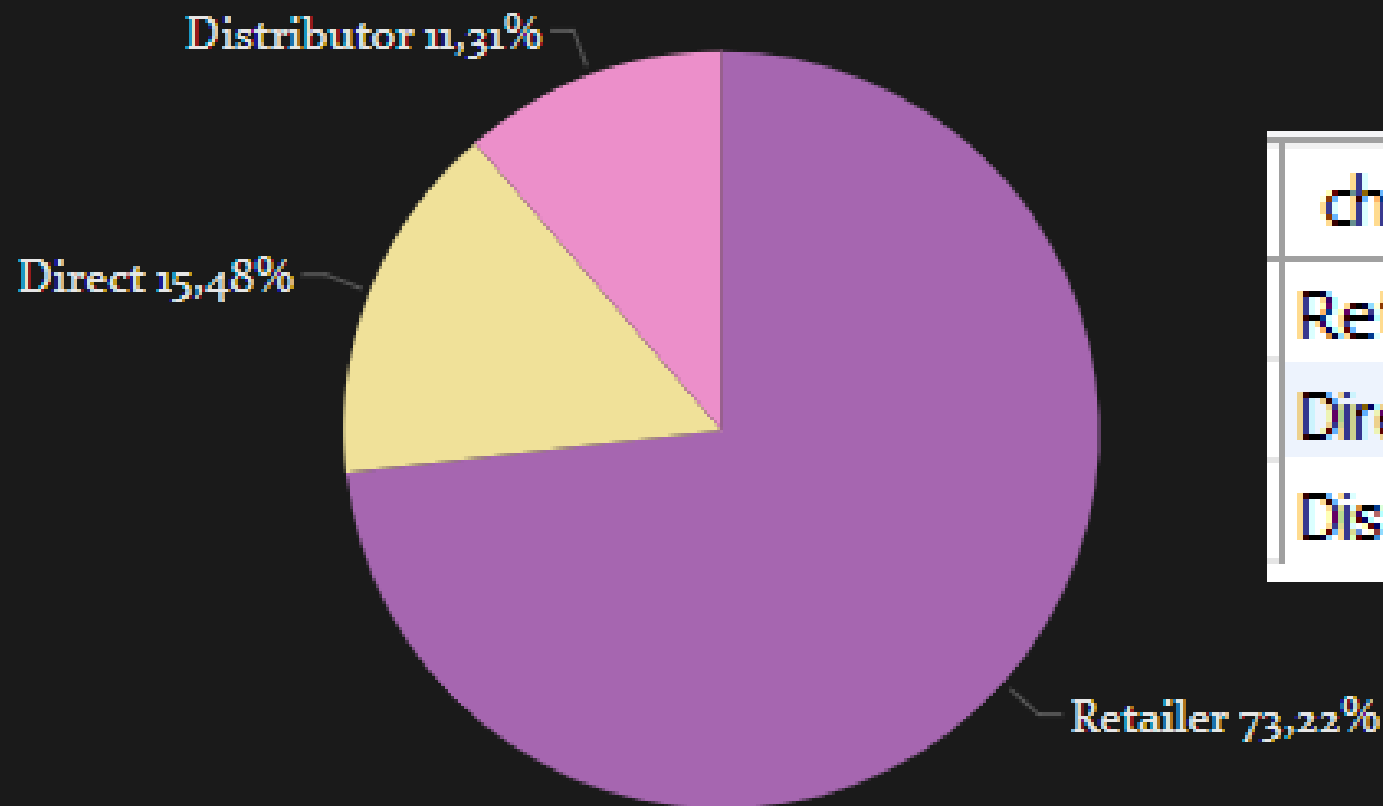
Query

```
WITH gross_sales_by_channel AS (  
  SELECT c.channel, round(SUM(sm.sold_quantity * gp.gross_price)/1000000,2) as sales FROM  
    gdb023.dim_customer c  
  join gdb023.fact_sales_monthly sm USING(customer_code)  
  JOIN gdb023.fact_gross_price gp USING(product_code)  
  WHERE sm.fiscal_year = 2021  
  GROUP BY c.channel)  
SELECT channel,sales , round(sales *100/ SUM(sales) OVER(),2) AS percentage  
FROM gross_sales_by_channel  
ORDER BY percentage DESC;
```

Insights:

The Retailer channel is the most importante channel representing the 73,22% of the total sales

OUTPUT



channel	sales	percentage
Retailer	1924.17	73.22
Direct	406.69	15.48
Distributor	297.18	11.31




```
WITH quant_sold_division AS (  
  SELECT p.product, SUM(sm.sold_quantity) AS sales, p.division FROM gdb023.dim_product as p  
  JOIN gdb023.fact_sales_monthly as sm USING( product_code)  
  WHERE fiscal_year = 2021  
  GROUP BY p.division , p.product),
```

```
prod_rank_sold_quant AS (  
  SELECT  
    *,  
    DENSE_RANK() OVER (  
      PARTITION BY division  
      ORDER BY  
        sales DESC  
    ) AS rank_order  
  FROM  
    quant_sold_division  
)  
SELECT  
  *  
FROM  
  prod_rank_sold_quant  
WHERE  
  rank_order <= 3;
```

Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021?



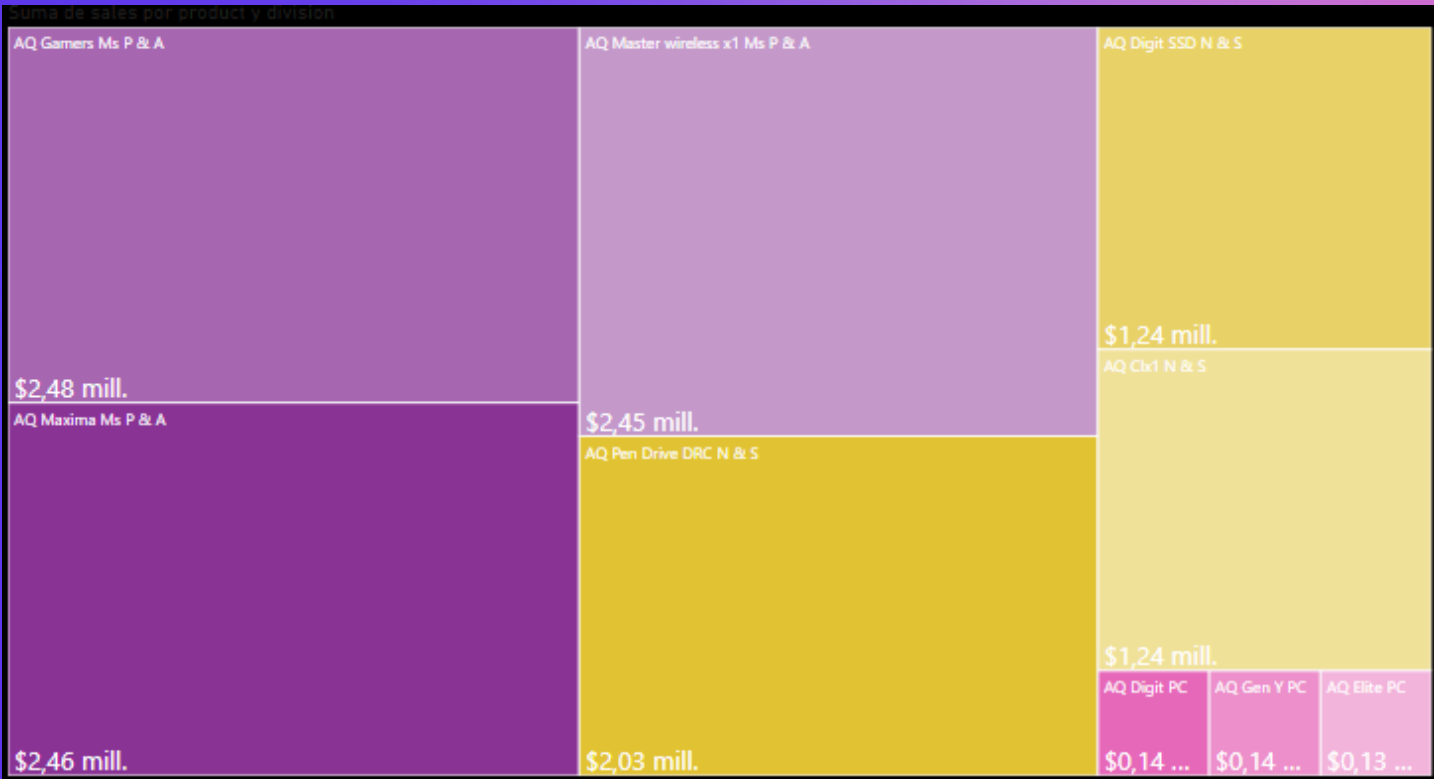
Insights:

P&A is the most important division (purple in the threemap)

the top 3 Products are:

- 'AQ Gamers Ms'
- 'AQ Maxima Ms'
- 'AQ Master wireless x1 Ms'

It is followed by N&S division, and finally in the 3er place we have the PC division



product	sales	division	rank_order
AQ Pen Drive DRC	2034569	N & S	1
AQ Digit SSD	1240149	N & S	2
AQ Clx1	1238683	N & S	3
AQ Gamers Ms	2477098	P & A	1
AQ Maxima Ms	2461991	P & A	2
AQ Master wireless...	2448784	P & A	3
AQ Digit	135092	PC	1
AQ Gen Y	135031	PC	2
AQ Elite	134431	PC	3

OUTPUT






Thank you !

**You can send me any questions or comments to
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Regards from Argentina 
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