ATLIQ HARDWARE

ONE OF THE LEADING COMPUTER HARDWARE PRODUCERS

INSIGHTS IN CONSUMER GOODS DOMAIN

by

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Requests for the Business Insights

10 ad hoc requests have been made from the management team

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?

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

4. Follow-up: Which segment had the most increase in unique products in 2021 vs 2020?

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

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.

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.

8. In which quarter of 2020, got the maximum total_sold_quantity?

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

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

Request-1

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

Sql Query

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

Query Result

Customer	Region	Market
Atliq Exclusive	APAC	Australia
Atliq Exclusive	APAC	Bangladesh
Atliq Exclusive	APAC	India
Atliq Exclusive	APAC	Indonesia
Atliq Exclusive	APAC	Japan
Atliq Exclusive	APAC	Newzealand
Atliq Exclusive	APAC	Philiphines
Atliq Exclusive	APAC	South Korea

Request-2

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

Sql Query

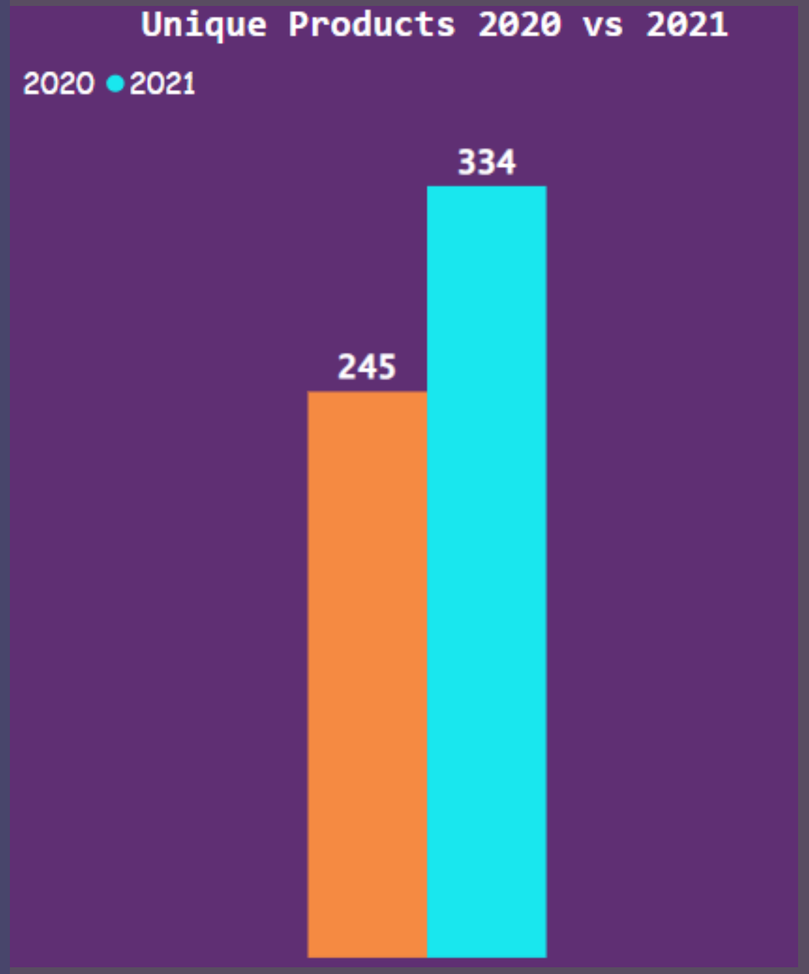
```sql
CREATE VIEW unique_products AS
    SELECT
        COUNT(DISTINCT product_code) AS unique_products_2020,
        (SELECT
                COUNT(DISTINCT product_code)
            FROM
                gdb023.fact_gross_price
            WHERE
                fiscal_year = '2021') AS unique_products_2021
    FROM
        gdb023.fact_gross_price
    WHERE
        fiscal_year = '2020';


SELECT
    *,
    (unique_products_2021 - unique_products_2020) / unique_products_2020 * 100 AS percentage_chg
FROM
    unique_products
```

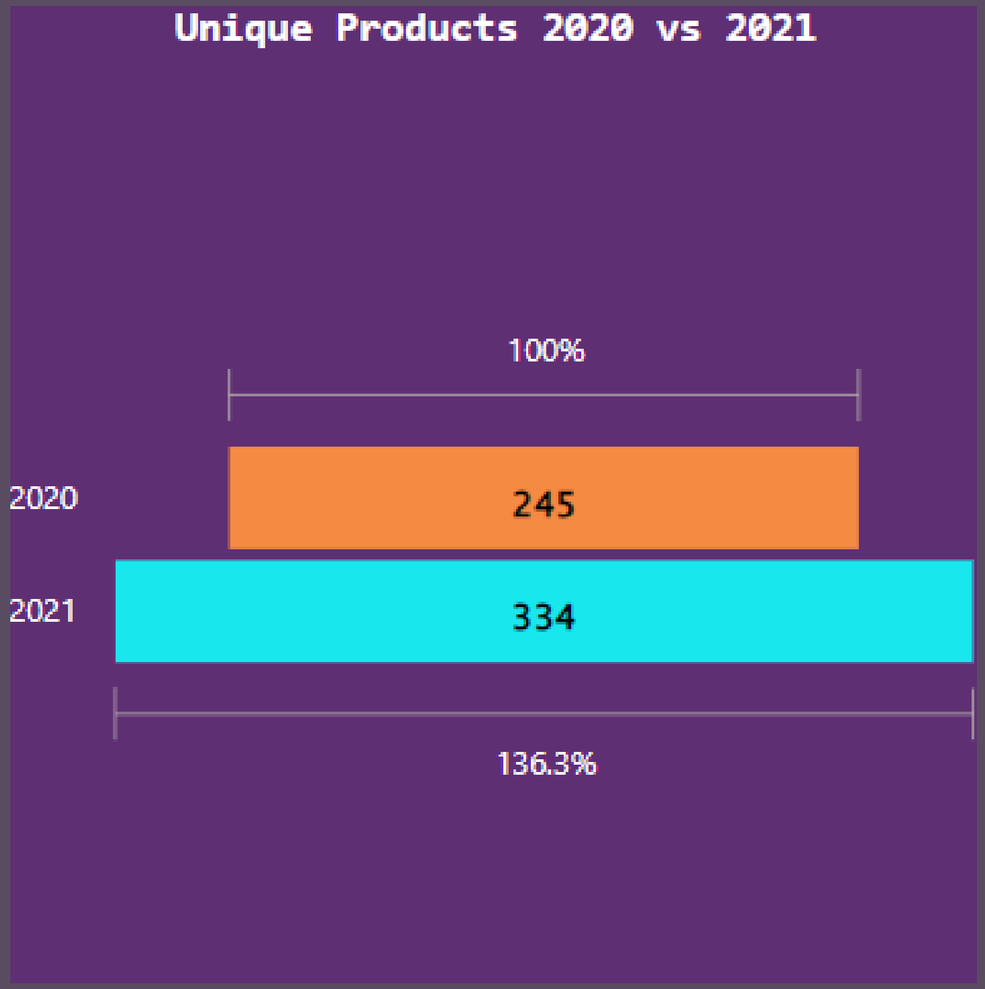
Request-2

Query Result

	unique_products_2020	unique_products_2021	percentage_chg
▶	245	334	36.3265

This is the resulted table obtained from the query execution for the request.





From the both visuals it is indicating the increased percentage in 2021 is 36.3% with compared to the unique products of 2020.

Request-3

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

Sql Query

```
SELECT
    segment, COUNT(DISTINCT product_code) AS product_count
FROM
    gdb023.dim_product
GROUP BY segment
ORDER BY product_count DESC
```

This is the SQL query that has been executed according to the request.

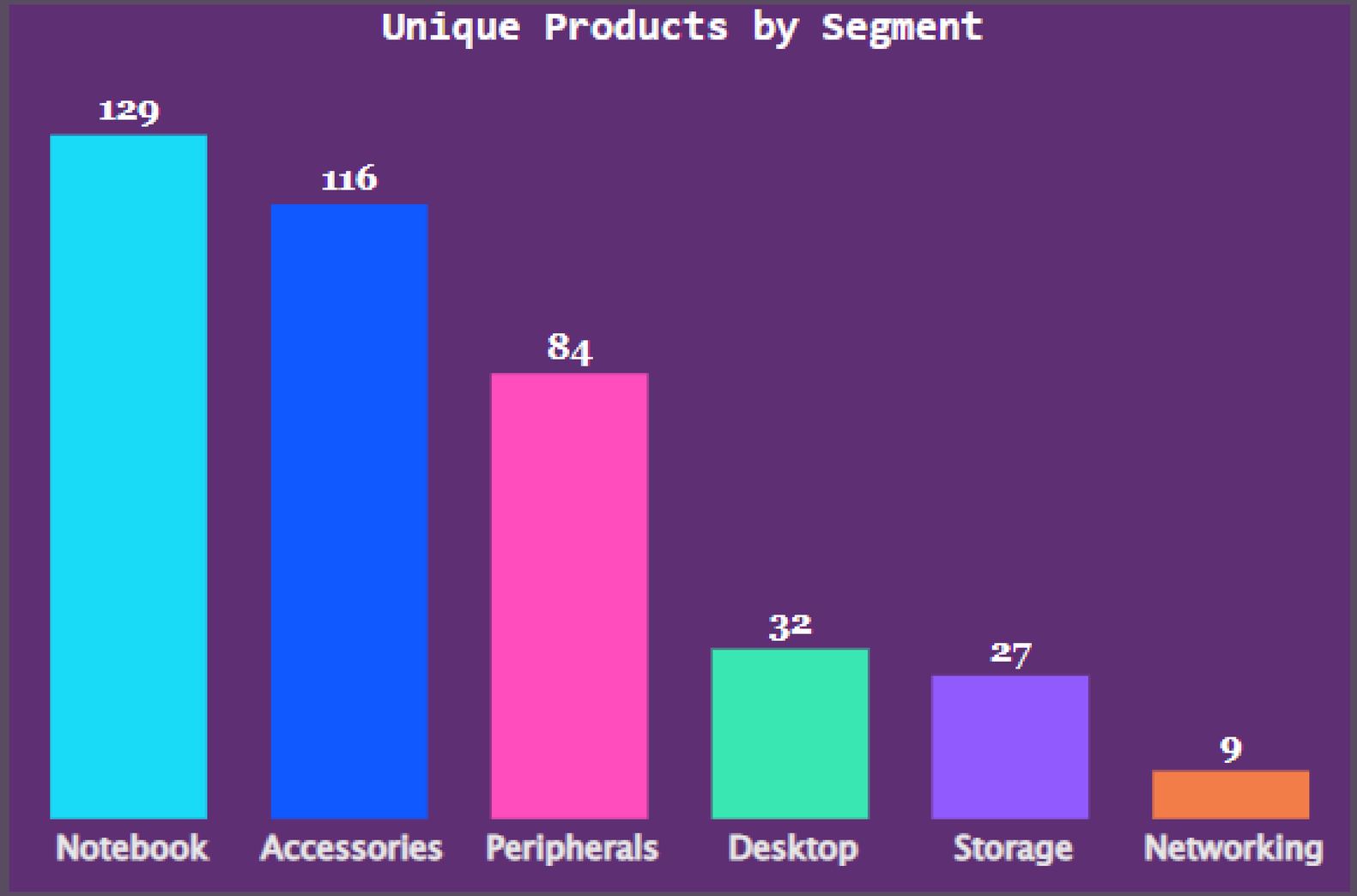
Result Table

The corresponding table is found as a result of the query execution. The resulted table has been arranged in a descending order to show the Total products in terms of different segments.

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

Request-3

Query Result



This is a graphic that illustrates the number of unique products by product segment, where the notebook and accessories having the highest number of 129 and 116 respectively.
Important to notice that the notebook and Accessories are responsible for around 62% of the total products.
Peripherals segment also contributing well with 84 items, which is alone 21% of total.
Desktop and storage products have somewhat lower number.
In addition, the networking segment has the fewest distinct products.

Request-4

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

Sql Query

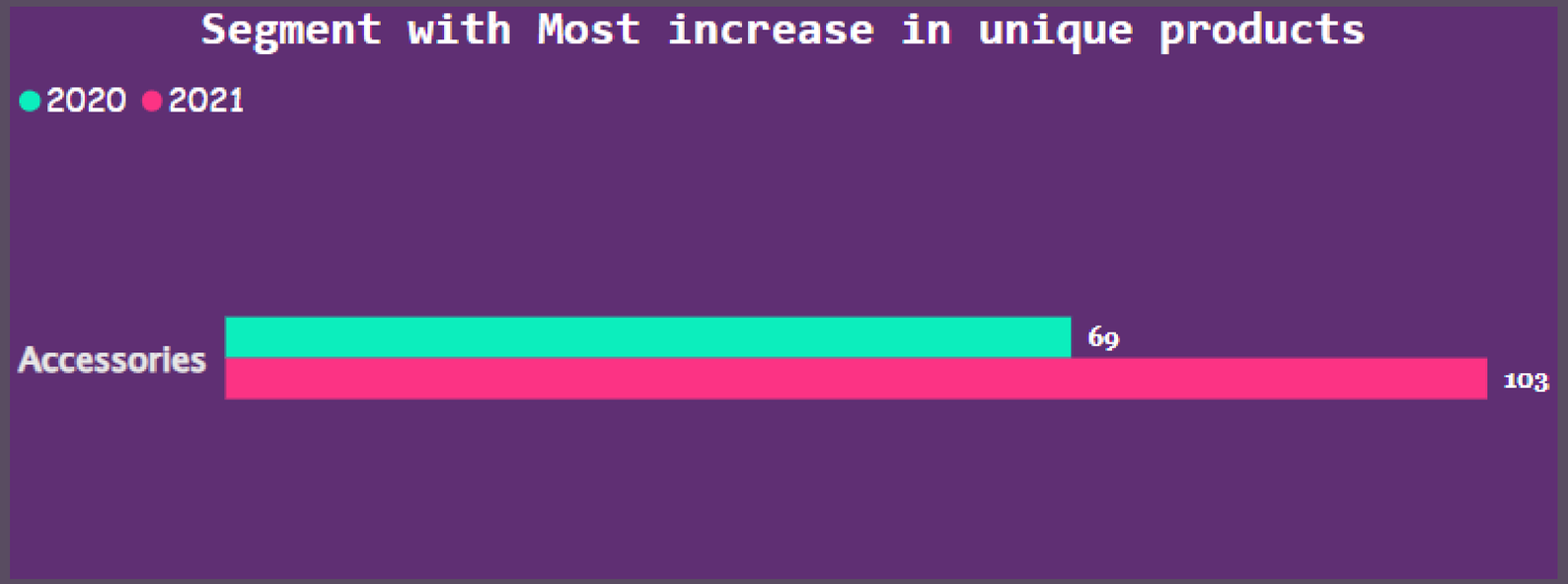
```sql
# here we are creating a view for 2020 product counts
drop view if exists seg_prod_2020;
CREATE VIEW seg_prod_2020 AS
    SELECT
        pd.segment, COUNT(DISTINCT gp.product_code) AS product_count
    FROM
        gdb023.dim_product pd
            JOIN
        fact_gross_price gp ON pd.product_code = gp.product_code
    WHERE
        gp.fiscal_year = '2020'
    GROUP BY pd.segment
    ORDER BY product_count DESC;

# here we are creating a view for 2021 product counts
drop view if exists seg_prod_2021;
CREATE VIEW seg_prod_2021 AS
    SELECT
        pd.segment, COUNT(DISTINCT gp.product_code) AS product_count
    FROM
        gdb023.dim_product pd
            JOIN
        fact_gross_price gp ON pd.product_code = gp.product_code
    WHERE
        gp.fiscal_year = '2021'
    GROUP BY pd.segment
    ORDER BY product_count DESC;
```

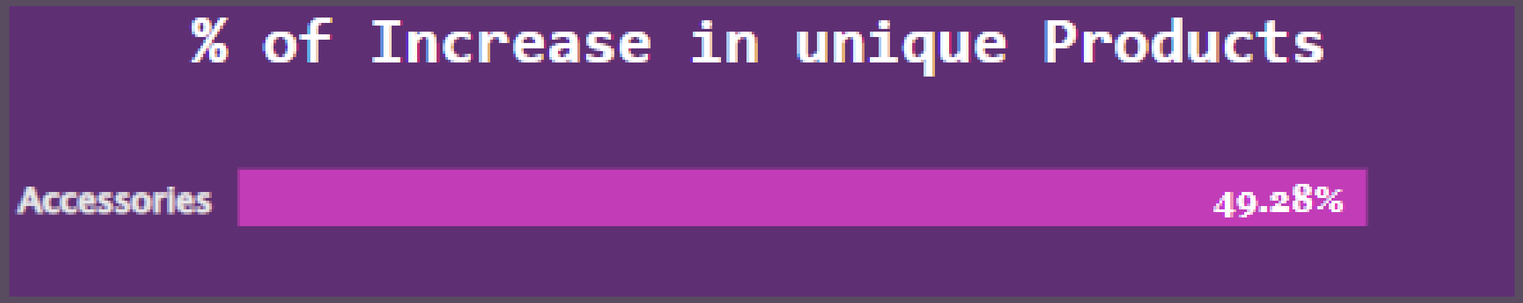
```sql

# creating a view for 20 and 21 product counts
drop view if exists prod_count_21_20;
CREATE VIEW prod_count_21_20 AS
    SELECT
        s20.segment,
        s20.product_count AS product_count_2020,
        s21.product_count AS product_count_2021
    FROM
        seg_prod_2020 s20
            JOIN
        seg_prod_2021 s21 ON s20.segment = s21.segment;

SELECT
    *, (product_count_2021 - product_count_2020) AS difference
FROM
    prod_count_21_20
HAVING difference = (SELECT
        MAX(product_count_2021 - product_count_2020)
    FROM
        prod_count_21_20);
```

Request-4

Query Result

	segment	product_count_2020	product_count_2021	difference
▶	Accessories	69	103	34





This is the table that was produced as an outcome of the SQL query. This demonstrates that the Accessories segment has experienced the greatest growth in unique products.

The chart is only the visual depiction of our observation where the Accessories segment having the highest increase in unique products with the percentage of 49.28 % with respect to the year 2020.

Request-5

Get the products that have the highest and lowest manufacturing costs

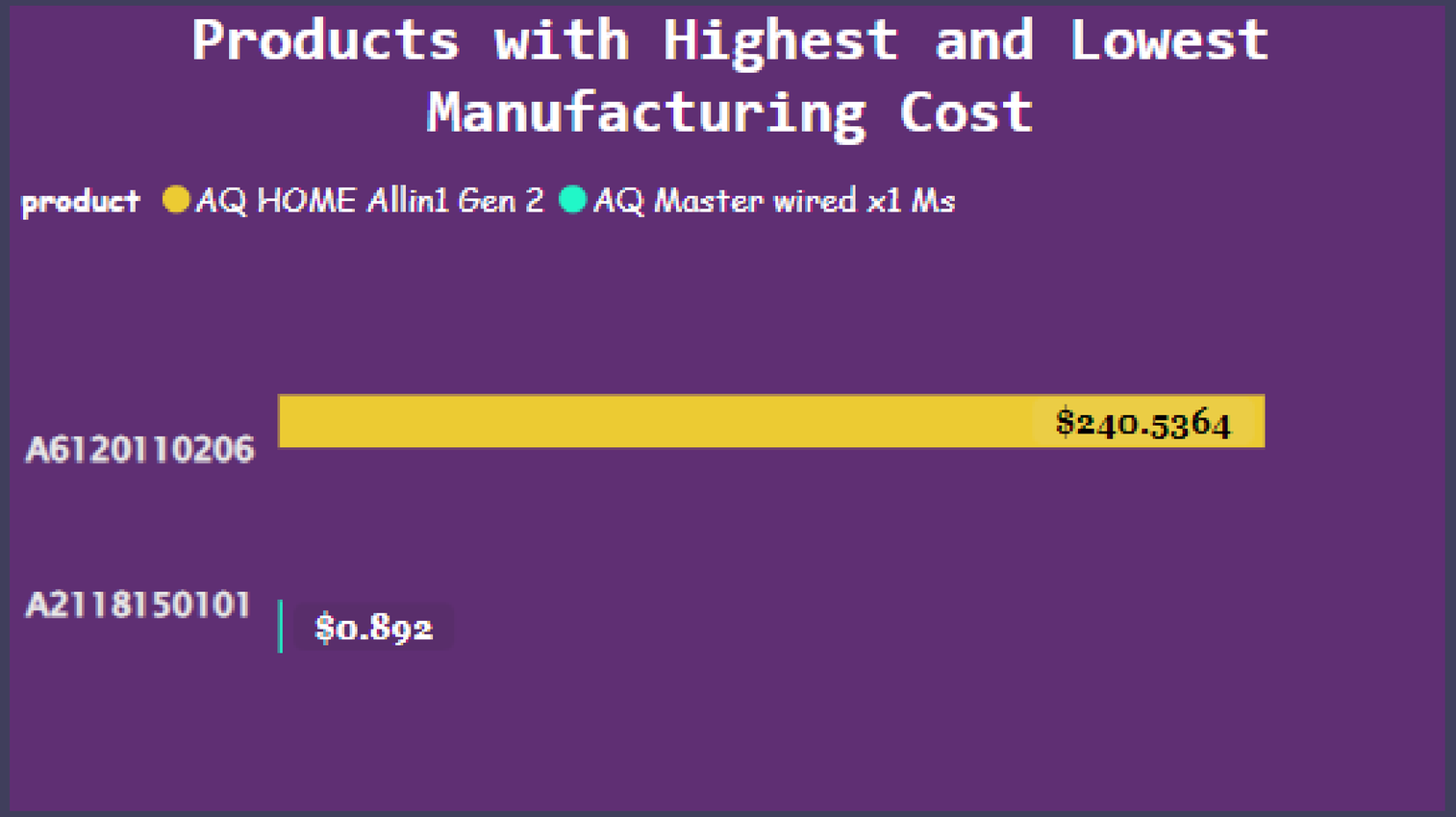
Sql Query

```sql
drop view if exists prod_max_min_cost;
CREATE VIEW prod_max_min_cost AS
    SELECT DISTINCT
        product_code,
        CASE
            WHEN
                manufacturing_cost = (SELECT
                        MAX(manufacturing_cost)
                    FROM
                        gdb023.fact_manufacturing_cost)
            THEN
                manufacturing_cost
            WHEN
                manufacturing_cost = (SELECT
                        MIN(manufacturing_cost)
                    FROM
                        gdb023.fact_manufacturing_cost)
            THEN
                manufacturing_cost
        END AS manufacturing_cost
    FROM
        gdb023.fact_manufacturing_cost
    HAVING manufacturing_cost IS NOT NULL;


SELECT
    mn.product_code, pd.product, mn.manufacturing_cost
FROM
    prod_max_min_cost mn
        JOIN
    dim_product pd ON mn.product_code = pd.product_code
ORDER BY mn.manufacturing_cost DESC;
```

Request-5

Query Result

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



The products with the highest and lowest manufacturing cost are displayed in this table from SQL Query.

According to the chart, The product titled AQ HOME Allin1 Gen 2 has the highest manufacturing cost, which is 240 $. On the other hand, AQ Master wired x1 Ms has the lowest manufacturing cost of 0.892$

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.

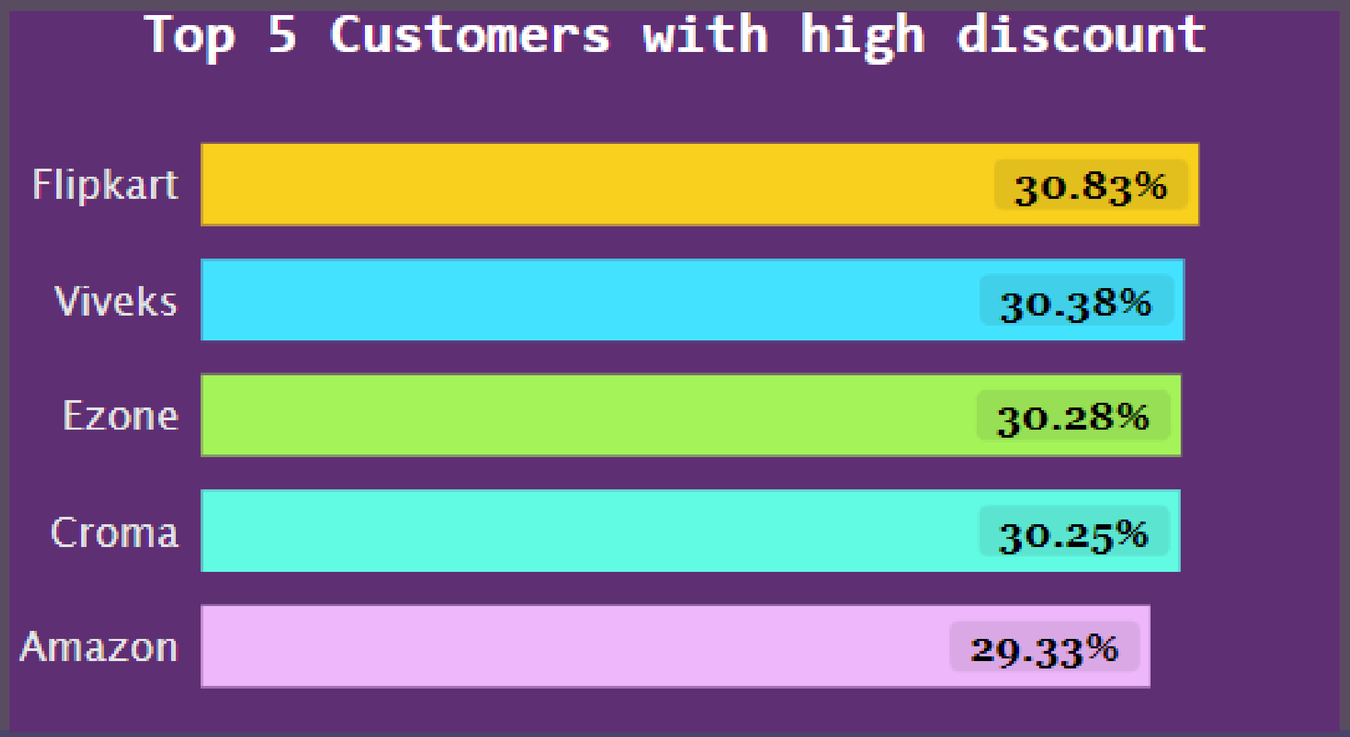
Sql Query

```sql
# creating customers with discount for 2021 year in descending order
drop view if exists customer_disct_21;
CREATE VIEW customer_disct_21 AS
    SELECT
        customer_code, pre_invoice_discount_pct
    FROM
        gdb023.fact_pre_invoice_deductions
    WHERE
        fiscal_year = '2021'
    ORDER BY pre_invoice_discount_pct DESC;

# merging with dim_customer table

SELECT
    cd.customer_code,
    dc.customer,
    cd.pre_invoice_discount_pct AS average_discount_percentage
FROM
    customer_disct_21 cd
        JOIN
    dim_customer dc ON cd.customer_code = dc.customer_code
WHERE
    dc.market = 'India'
ORDER BY average_discount_percentage DESC
LIMIT 5;
```

Request-6

Query Result

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



This table is showing the top 5 customer having high average dicount percentage for the fiscal year 2021.

A really intriguing information is displayed on the chart.Flipcart is having the highest percentage of discount that is 30.83%. Besides that Ezone and croma both are having almost similar discount with 30.28% and 30.25%. However, Amazon is having the lowest among the 5 with 29.33% of discount.

The most significant aspect is that all five discount percentages are quite similar to one another and do not differ significantly. All the five of these discounts fall somewhere between 29 and 30 percent.

Request-7

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

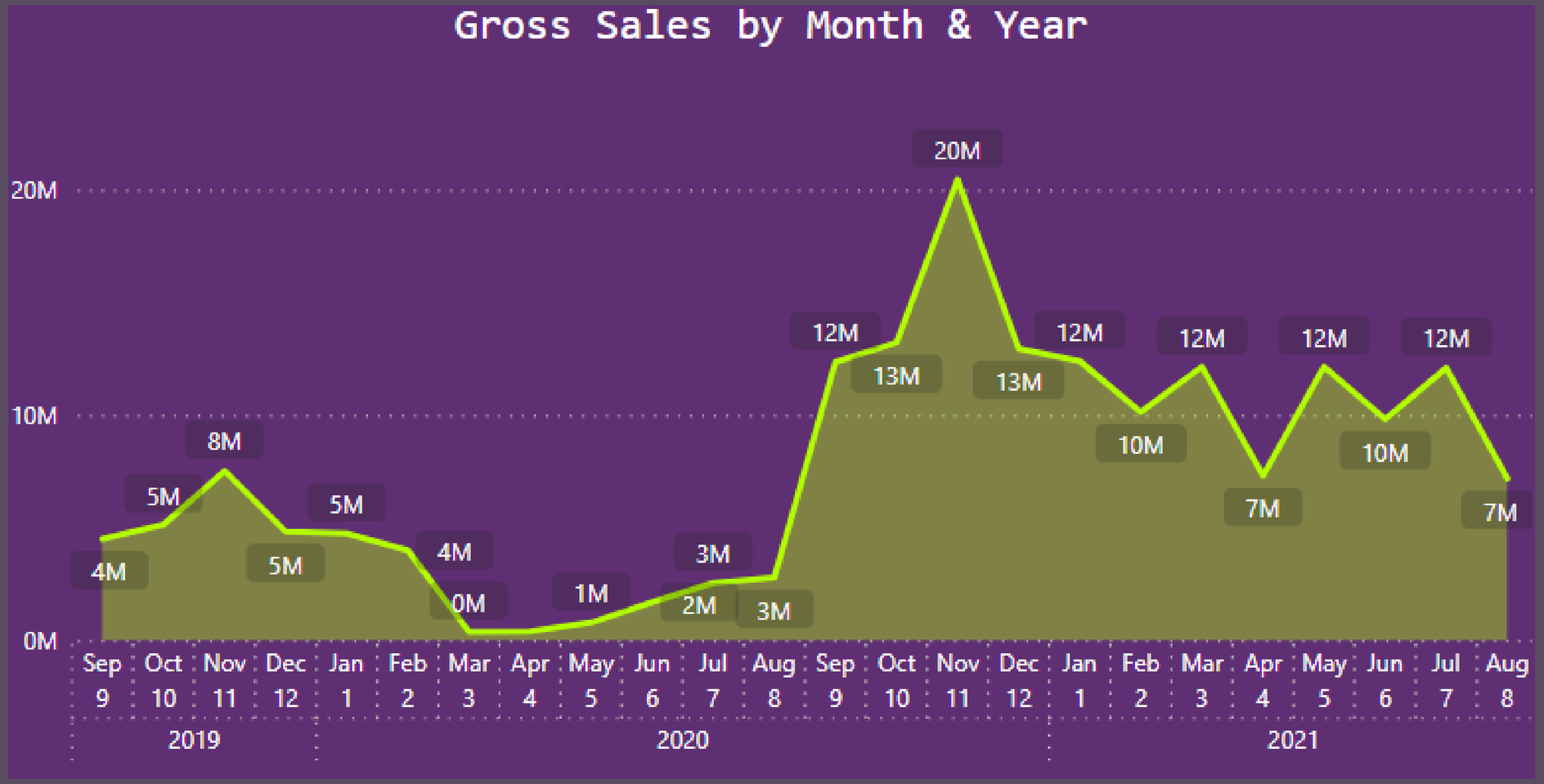
Sql Query

```sql
# creating table for the required customers
drop view if exists customer_atliq_excl;
CREATE VIEW customer_atliq_excl AS
    SELECT
        customer_code
    FROM
        dim_customer
    WHERE
        dim_customer.customer = 'Atliq Exclusive';

# merging that table with sales_monthly table
drop view if exists fact_sales_monthly_atliq_excl;
CREATE VIEW fact_sales_monthly_atliq_excl AS
    SELECT
        fs.*
    FROM
        fact_sales_monthly fs
            JOIN
        customer_atliq_excl cae ON fs.customer_code = cae.customer_code;
```

```sql
# creating the final view
drop view if exists final_table_gross_sales;
CREATE VIEW final_table_gross_sales AS
    SELECT
        MONTH(fsa.date) AS 'Month',
        YEAR(fsa.date) AS 'Year',
        (fsa.sold_quantity * fg.gross_price) AS 'Gross Sales Amount'
    FROM
        fact_sales_monthly_atliq_excl fsa
            INNER JOIN
        fact_gross_price fg ON fsa.product_code = fg.product_code
    WHERE
        fsa.fiscal_year = fg.fiscal_year;


SELECT
    Month,
    Year,
    SUM(`Gross Sales Amount`) AS 'Gross Sales Amount'
FROM
    final_table_gross_sales
GROUP BY Month , Year;
```

Request-7

Query Result



This chart is actually showing the gross sales for the customer 'Atliq Exclusive' by months and years. Here, it is noticable that the highest gross sales was on November 2020 which was 20M. After then in 2021 we see the graph is following Sales between 7 to 12 M(~10M average). However, the lowest value found on March 2020 which was a drastic decline. Before that in 2019 the gross sales had an average of around 5 M.

Request-8

In which quarter of 2020, got the maximum total_sold_quantity?

Sql Query

```sql
drop view if exists qutr_sold_qtn;
CREATE VIEW qutr_sold_qtn AS
    SELECT
        QUARTER(date) AS 'Quarter', sold_quantity
    FROM
        fact_sales_monthly
    WHERE
        YEAR(date) = '2020';

SELECT
    Quarter, SUM(sold_quantity) AS Total_sold_quantity
FROM
    qutr_sold_qtn
GROUP BY Quarter
ORDER BY Total_sold_quantity DESC;
```

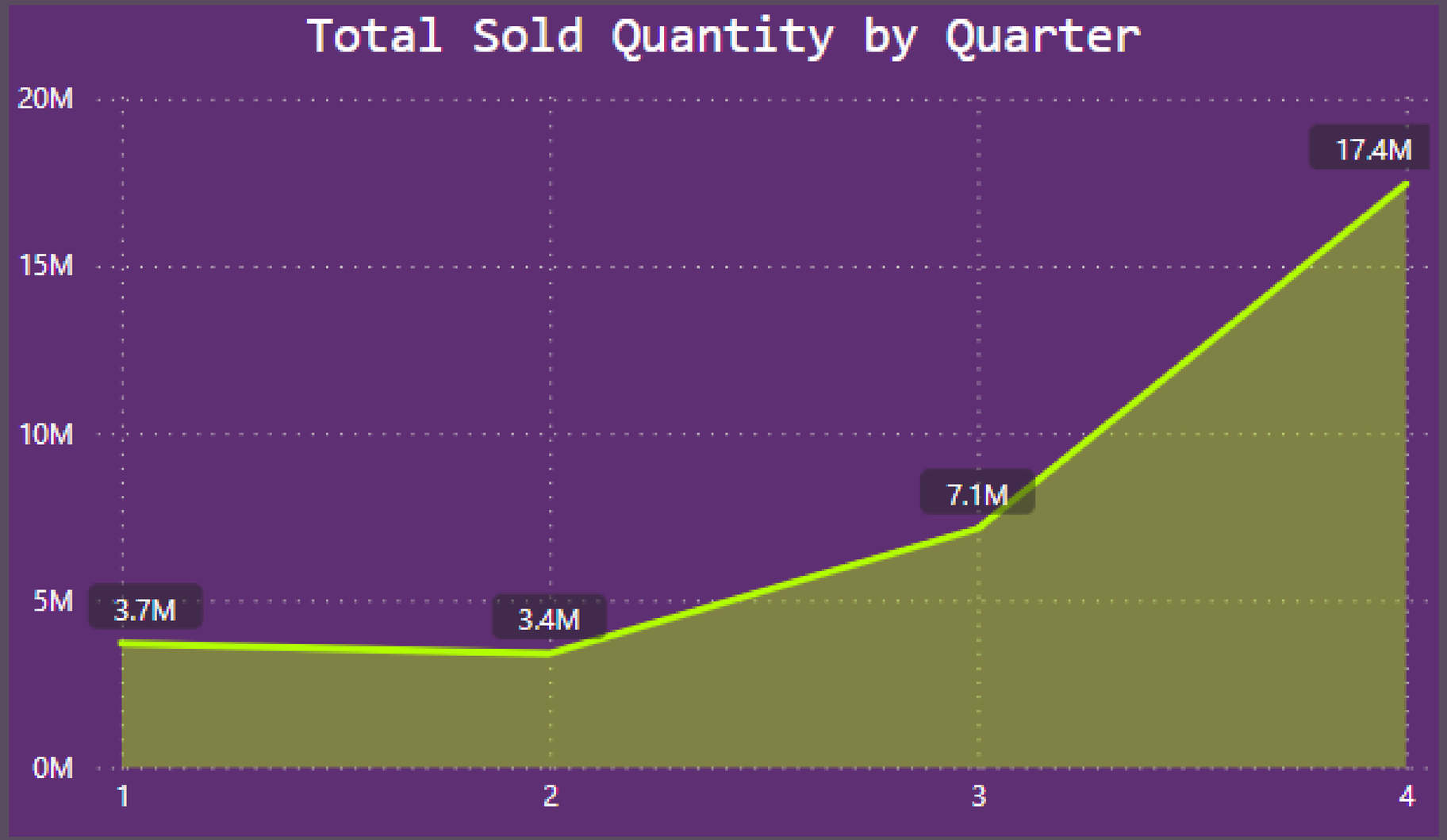
Query Table

Quarter	Total_sold_quantity
4	1747125
3	7137551
1	3704398
2	3395899

This is the query table that was returned following the SQL query execution. The total amount sold is divided into categories based on the 2020 calendar quarters. Nevertheless, the greatest number we discovered was from the fourth quarter.

Request-8

Query Result



This graphical illustration is showing the total amount of goods sold, segmented by quarters of 2020 . The highest found is 17.4 M at the 4th Quarter.It's important to highlight that the difference between highest and the second highest is around 10 M. However, the 1st and 2nd Quarter both have more or less similar values.

Request-9

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

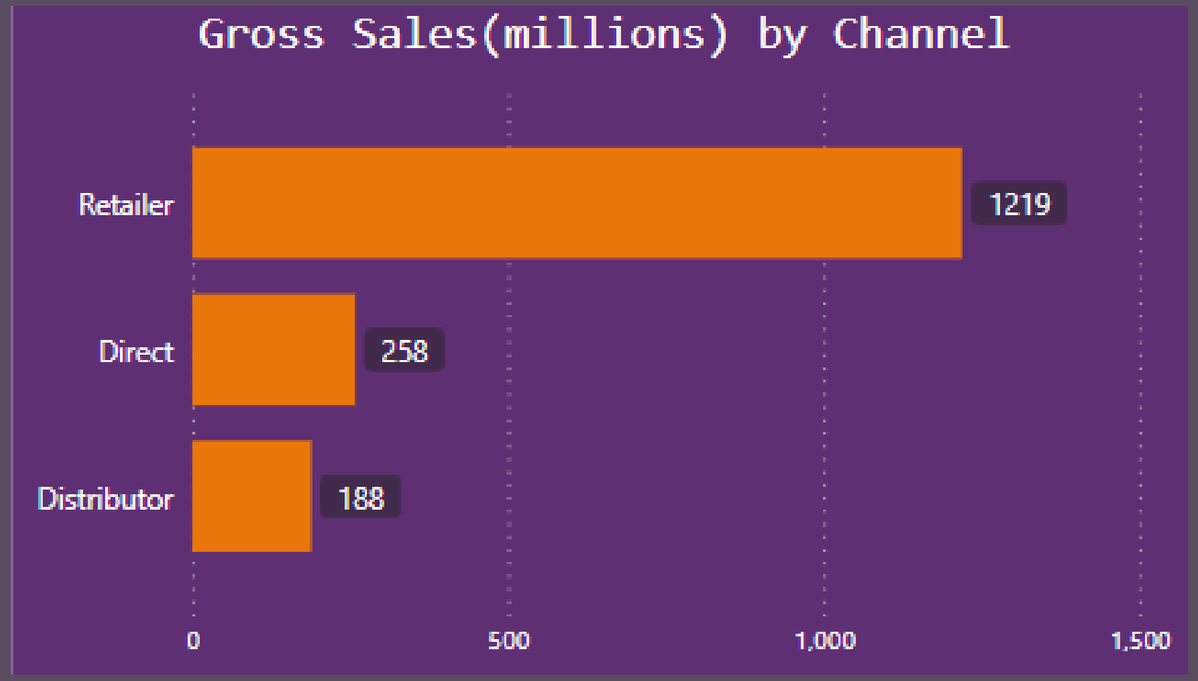
Sql Query

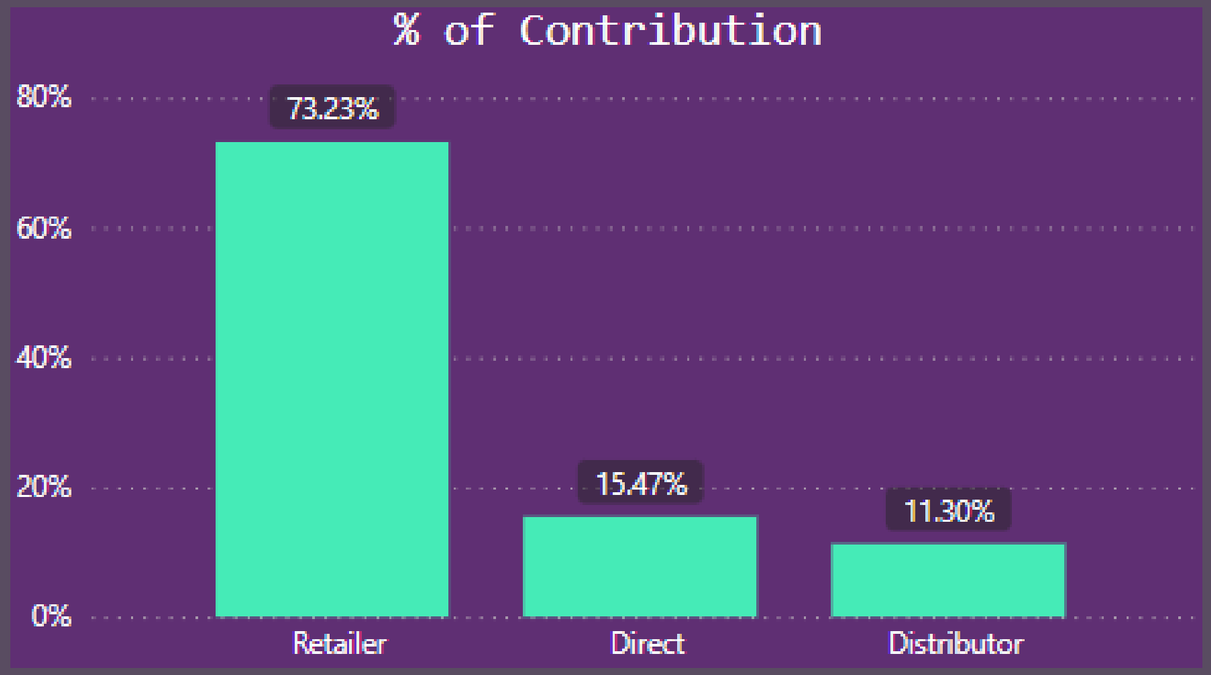
```sql
drop view if exists gross_sales_channel;
CREATE VIEW gross_sales_channel AS
    SELECT
        dc.channel,
        (fs.sold_quantity * fg.gross_price) AS gross_sales,
        fs.fiscal_year
    FROM
        fact_sales_monthly fs
            JOIN
        fact_gross_price fg ON fs.product_code = fg.product_code
            JOIN
        dim_customer dc ON fs.customer_code = dc.customer_code
    WHERE
        fs.fiscal_year = '2021'
            AND fs.fiscal_year = fg.fiscal_year;
```

```sql
drop view if exists Total_sales_by_channel;
CREATE VIEW Total_sales_by_channel AS
    SELECT
        channel, SUM(gross_sales) AS Total_sales
    FROM
        gross_sales_channel
    GROUP BY channel;


SELECT
    channel,
    (Total_sales / 1000000) AS gross_sales_mln,
    Total_sales / (SELECT
            SUM(Total_sales)
        FROM
            Total_sales_by_channel) * 100 AS percentage
FROM
    Total_sales_by_channel
GROUP BY channel
ORDER BY percentage DESC;
```

Request-9

Query Result





From the charts it is seen that the gross sales was the highest from Retailer channel which is 1219 M. This amount indicating the contribution of 73.23% of overall gross sales. In contrast, the Direct and Distributor channels are providing 258 and 188 M of sales which is in percentage of 15.47% and 11.30% contribution respectively.

Request-10

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

Sql Query

```sql
drop view if exists divsion_prod_sold_qtn;
CREATE VIEW divsion_prod_sold_qtn AS
    SELECT
        dp.division, fs.product_code, dp.product, fs.sold_quantity
    FROM
        fact_sales_monthly fs
            JOIN
        dim_product dp ON fs.product_code = dp.product_code
    WHERE
        fiscal_year = '2021'
    ORDER BY sold_quantity DESC;

```

```sql

drop view if exists total_sold_qtn_by_div;
CREATE VIEW total_sold_qtn_by_div AS
    SELECT
        division,
        product_code,
        product,
        SUM(sold_quantity) AS Total_sold_quantity
    FROM
        divsion_prod_sold_qtn
    GROUP BY division , product_code , product
    ORDER BY Total_sold_quantity DESC;
```

```sql
    ## final touch

select * from (select *,
row_number() over(partition by division order by Total_sold_quantity DESC) as rank_order
from total_sold_qtn_by_div) ranks
where rank_order <=3;
```

Request-10

Query Result

Top 3 Products with high sold quantity by Division

Division	Product Code	Product Name	Total Sold Quantity	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	A4218110208	AQ Digit	17275	3
PC	A4319110306	AQ Velocity	17280	2
Total			3385444	

The N&S division's AQ Pen Drive 2 IN 1 product has the largest amount of sales record. The first three goods with a high volume of sales come from the N&S division, which accounts for almost 60% of the total sold quantity from the table.

Nonetheless, the P&A section also made a significant contribution by securing the second position. However, compared to the other two divisions, the PC division had the lowest amount of sales.