CONSUMER GOODS

AD-HOC ANALYSIS

Task

- This document delivers a thorough analysis of key business metrics based on specific ad-hoc requests.

- It includes market analysis, highlighting the regions where specific customers operate.

- Product trends are evaluated, including growth in unique products and segment-specific performance.

- Customer behavior insights are provided, identifying key customers and their purchasing trends.

- Channel performance is analyzed to determine sales contributions and identify high-performing channels.

- The findings aim to support data-driven strategies and informed decision-making.

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

Query

```
1    # Que - Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.
2
3 ●  select distinct market, region from dim_customer
4    where region = "APAC" and customer = "AtliQ Exclusive"
```
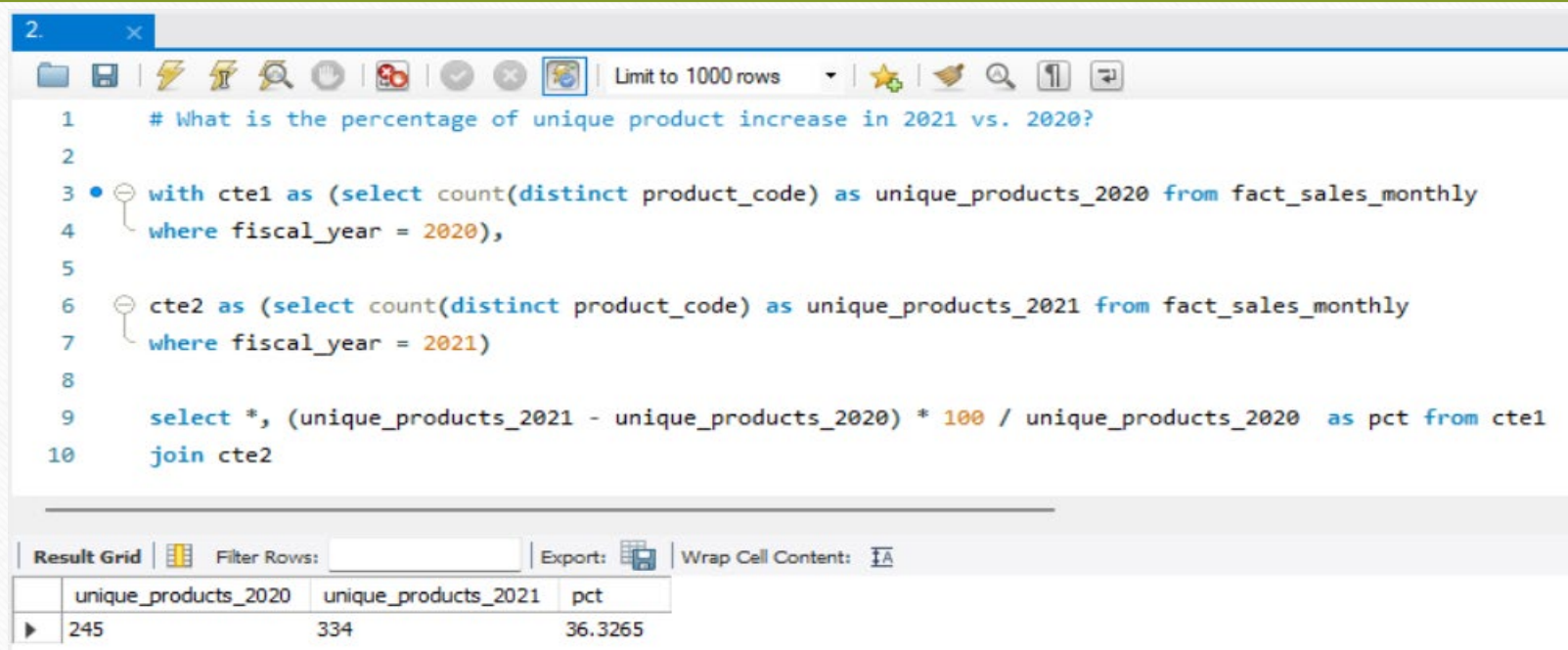
Output

market	region
India	APAC
Indonesia	APAC
Japan	APAC
Philiphines	APAC
South Korea	APAC
Australia	APAC
Newzealand	APAC
Bangladesh	APAC

Result - There are total eight markets in which AtliQ Exclusive operates its business in APAC region

Que.2 – What is the percentage of unique products increase in 2021 vs 2020?

Query

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

with cte1 as (select count(distinct product_code) as unique_products_2020 from fact_sales_monthly
    where fiscal_year = 2020),

cte2 as (select count(distinct product_code) as unique_products_2021 from fact_sales_monthly
    where fiscal_year = 2021)

select *, (unique_products_2021 - unique_products_2020) * 100 / unique_products_2020  as pct from cte1
join cte2
```

Output

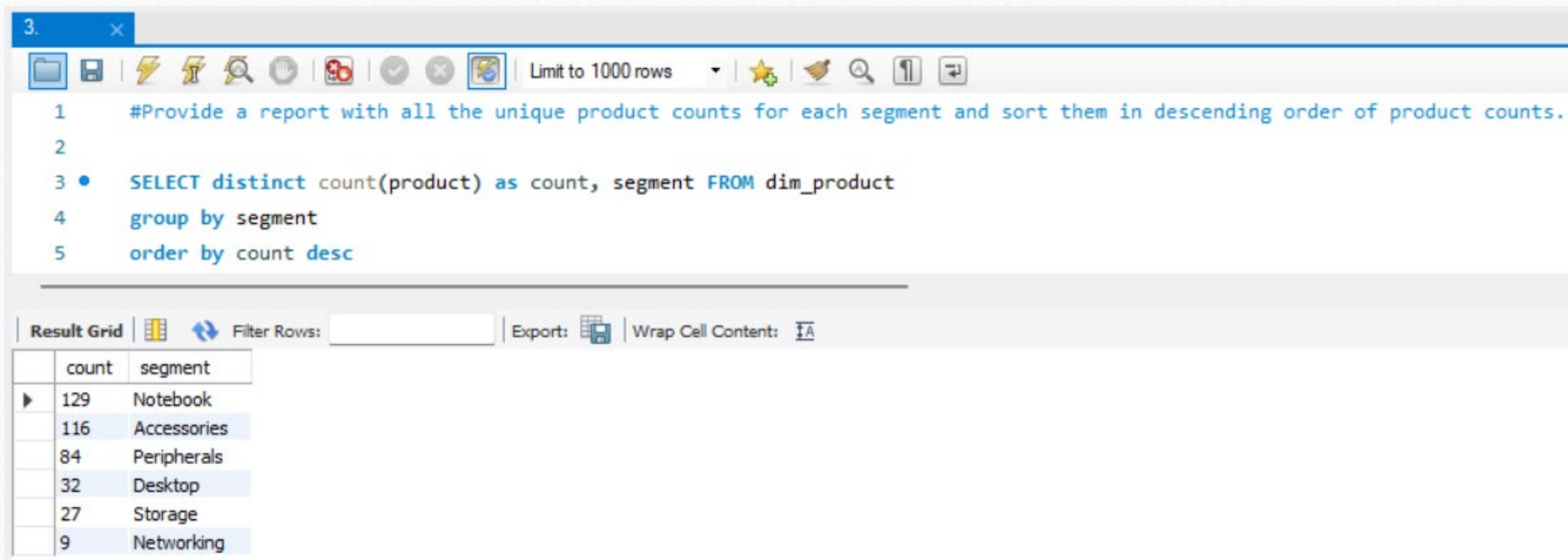| unique_products_2020	unique_products_2021	pct
245	334	36.3265

Result – In 2020 total unique product count were 245, In 2021 it increase to 334.
So, 36.3 % of unique product increase from 2020 to 2021. Which is impressive for business.

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

Query

```
3.                                    Limit to 1000 rows
1    #Provide a report with all the unique product counts for each segment and sort them in descending order of product counts.
2
3 •  SELECT distinct count(product) as count, segment FROM dim_product
4    group by segment
5    order by count desc
```
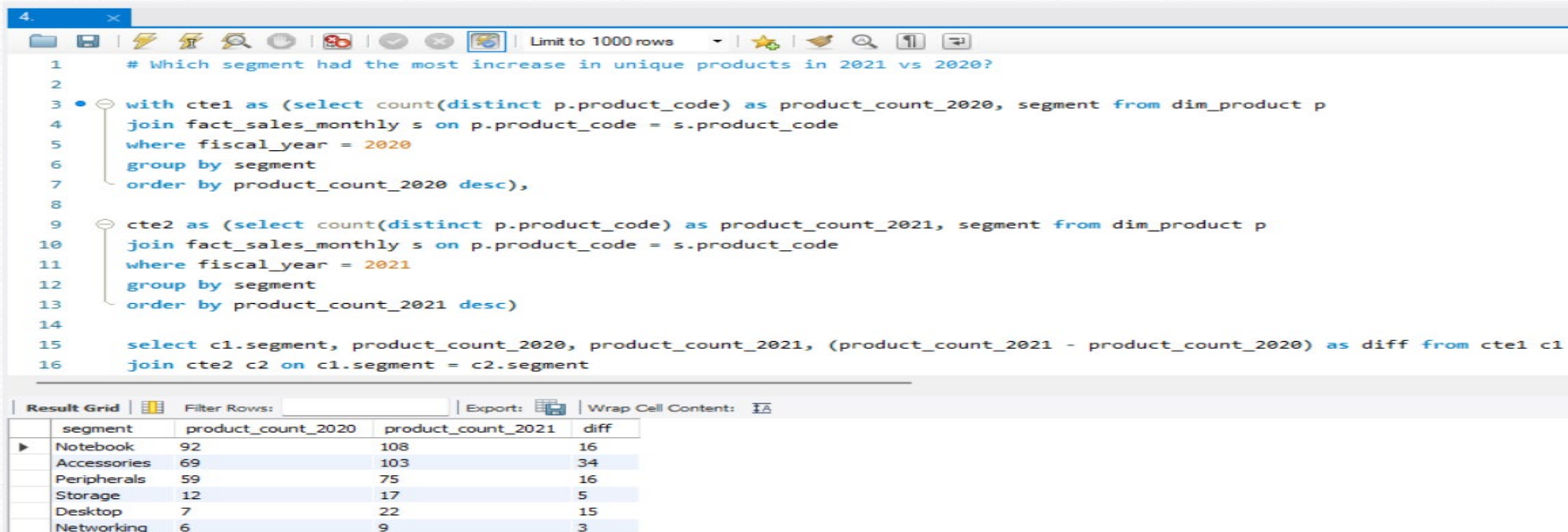
Output

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

Result ─ The Notebook segment showed exceptional performance, emerging as the top-selling category. In contrast, segments like Desktop, Storage, and Networking recorded relatively low sales. AtliQ Hardware should consider investigating these underperforming segments for potential improvement.

Que.4 – Which segment had the most increase in unique products in 2021 vs 2020?

Query

```
1    # Which segment had the most increase in unique products in 2021 vs 2020?
2
3    with cte1 as (select count(distinct p.product_code) as product_count_2020, segment from dim_product p
4        join fact_sales_monthly s on p.product_code = s.product_code
5        where fiscal_year = 2020
6        group by segment
7        order by product_count_2020 desc),
8
9    cte2 as (select count(distinct p.product_code) as product_count_2021, segment from dim_product p
10       join fact_sales_monthly s on p.product_code = s.product_code
11       where fiscal_year = 2021
12       group by segment
13       order by product_count_2021 desc)
14
15   select c1.segment, product_count_2020, product_count_2021, (product_count_2021 - product_count_2020) as diff from cte1 c1
16   join cte2 c2 on c1.segment = c2.segment
```

Output

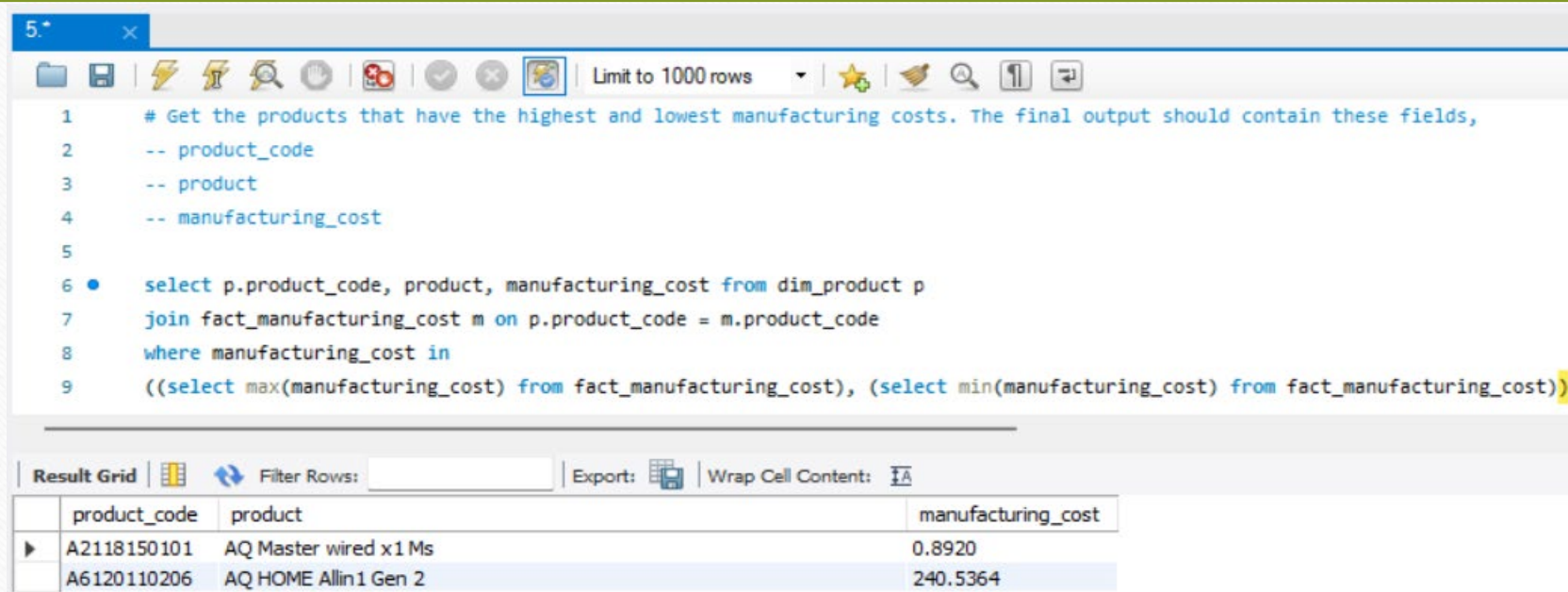| segment	product_count_2020	product_count_2021	diff
Notebook	92	108	16
Accessories	69	103	34
Peripherals	59	75	16
Storage	12	17	5
Desktop	7	22	15
Networking	6	9	3

Accessories led growth, making it a strong candidate for continued investment.
Notebook and **Peripherals** showed solid performance, indicating stable demand.
Networking saw no growth — needs review for potential issues.
Storage and **Desktop** showed limited growth; may need targeted strategies to boost performance.

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

Query

```
5.*          ×

                              Limit to 1000 rows

1    # Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields,
2    -- product_code
3    -- product
4    -- manufacturing_cost
5
6 ●  select p.product_code, product, manufacturing_cost from dim_product p
7    join fact_manufacturing_cost m on p.product_code = m.product_code
8    where manufacturing_cost in
9    ((select max(manufacturing_cost) from fact_manufacturing_cost), (select min(manufacturing_cost) from fact_manufacturing_cost))
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

Output

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

Result - There's a significant cost gap, suggesting differences in product complexity. Useful for cost control and pricing strategies.

Que.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

Query

```
4      -- average_discount_percentage
5
6  •   select c.customer_code, customer, round(avg(pre_invoice_discount_pct)*100,2) as average_discount_percentage from dim_customer c
7      join fact_pre_invoice_deductions d on c.customer_code = d.customer_code
8      where fiscal_year = 2021 and market = "India"
9      group by customer
10     order by pre_invoice_discount_pct desc
11     limit 5
```

Output

customer_code	customer	average_discount_percentage
90002009	Flipkart	30.83
90002006	Viveks	30.38
90002003	Ezone	30.28
90002002	Croma	30.25
90002004	Vijay Sales	27.53

Result — Top retail customers like **Flipkart** and **Croma** receive high discounts, indicating strong buying power or strategic partnerships. Monitoring these can help manage margins and negotiation strategies.

Que.7 – Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month

Query

```
1   # Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month . This analysis helps to get an idea o
2   -- Month
3   -- Year
4   -- Gross sales Amount
5
6 • select month(s.date) as Month, s.fiscal_year as Year, sum((gross_price * sold_quantity)) as gross_sales from fact_gross_price g
7   join fact_sales_monthly s on g.product_code = s.product_code
8   Join dim_customer c on s.customer_code = c.customer_code
9   where customer = "AtliQ Exclusive"
10  group by month, year
11  order by year asc
```
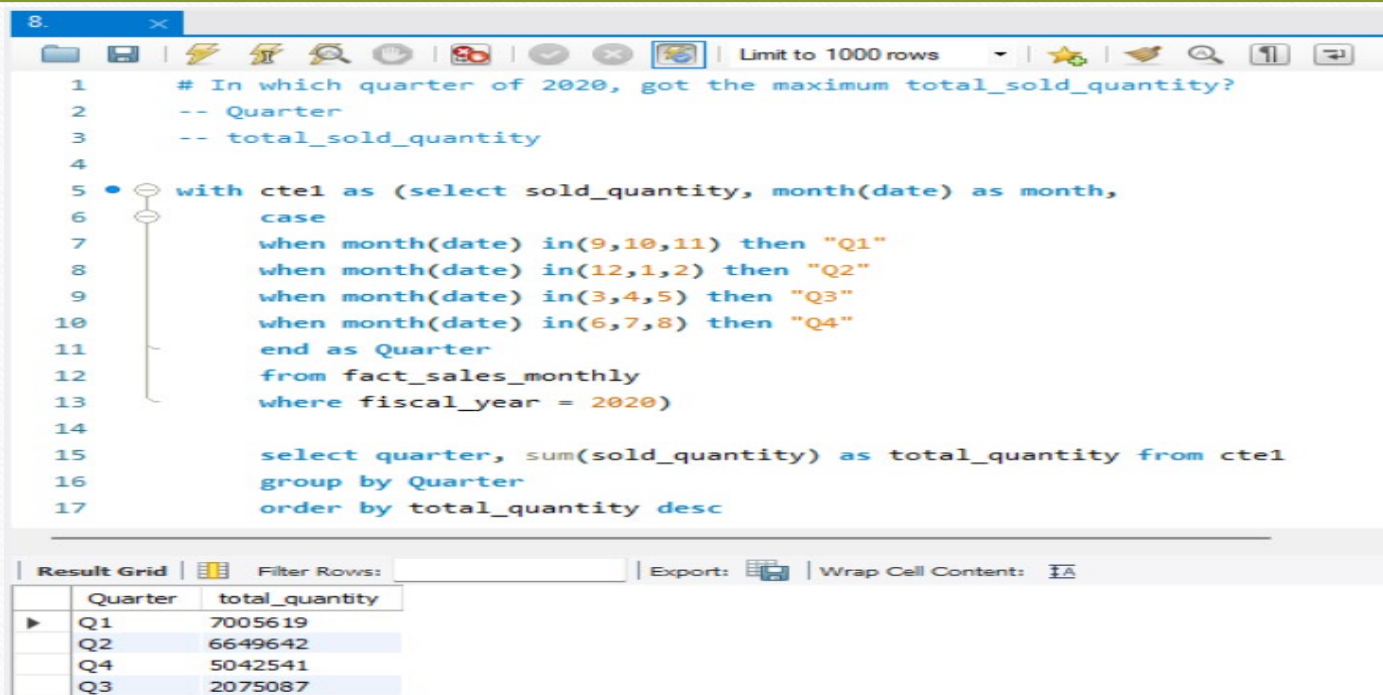
Output

Month	Year	gross_sales
9	2020	9092670.3392
10	2020	10378637.5961
11	2020	15231894.9669
12	2020	9755795.0577
1	2020	9584951.9393
2	2020	8083995.5479
3	2020	766976.4531
4	2020	800071.9543
5	2020	1586964.4768
6	2020	3429736.5712
7	2020	5151815.4020
8	2020	5638281.8287
9	2021	19530271.3028
10	2021	21016218.2095
11	2021	32247289.7946
12	2021	20409063.1769
1	2021	19570701.7102
2	2021	15986603.8883
3	2021	19149624.9239
4	2021	11483530.3032

Result ━ Consistent sales spikes around **October–December** suggest **strong seasonal demand**. This pattern can guide **inventory planning** and **marketing strategies** ahead of peak months.

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

Query

```
8.    ×
        | Limit to 1000 rows
1        # In which quarter of 2020, got the maximum total_sold_quantity?
2        -- Quarter
3        -- total_sold_quantity
4
5 ●   ⊖ with cte1 as (select sold_quantity, month(date) as month,
6      ⊖    case
7             when month(date) in(9,10,11) then "Q1"
8             when month(date) in(12,1,2) then "Q2"
9             when month(date) in(3,4,5) then "Q3"
10            when month(date) in(6,7,8) then "Q4"
11            end as Quarter
12            from fact_sales_monthly
13            where fiscal_year = 2020)
14
15            select quarter, sum(sold_quantity) as total_quantity from cte1
16            group by Quarter
17            order by total_quantity desc
```

Output

Result Grid		Filter Rows:		Export:	Wrap Cell Content:

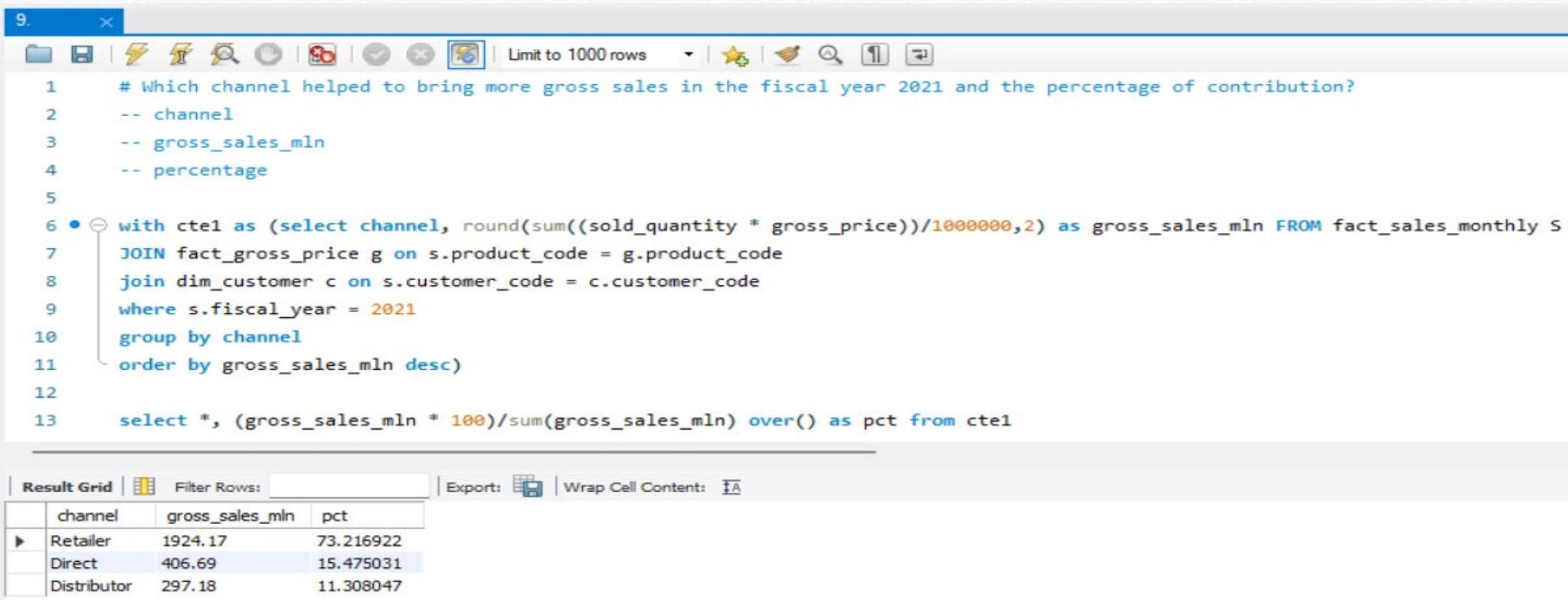| Quarter	total_quantity
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087

Result – **Q1 2020** led in sales volume, possibly driven by **post-holiday inventory restocking** or **seasonal demand surges**. Q3 shows a noticeable dip and may indicate a **low sales season** or external market factors.

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

Query


```
9.                                              Limit to 1000 rows

1    # Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution?
2    -- channel
3    -- gross_sales_mln
4    -- percentage
5
6  • ⊖ with cte1 as (select channel, round(sum((sold_quantity * gross_price))/1000000,2) as gross_sales_mln FROM fact_sales_monthly S
7      JOIN fact_gross_price g on s.product_code = g.product_code
8      join dim_customer c on s.customer_code = c.customer_code
9      where s.fiscal_year = 2021
10     group by channel
11     order by gross_sales_mln desc)
12
13     select *, (gross_sales_mln * 100)/sum(gross_sales_mln) over() as pct from cte1
```

Output

channel	gross_sales_mln	pct
Retailer	1924.17	73.216922
Direct	406.69	15.475031
Distributor	297.18	11.308047

Result ─ **Retailer channel** was the top contributor, generating **over 73%** of the total gross sales.

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

Query

```
10.                                                    ×
Limit to 1000 rows

1    # Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021
2    -- division
3    -- product_code
4
5    with cte1 as (select division,
6                         s.product_code,
7                         p.product,
8                         sum(sold_quantity) as sold_quantity,
9                         dense_rank() over(partition by division order by sold_quantity desc) as drnk
10   from fact_sales_monthly s
11   join dim_product p on p.product_code = s.product_code
12   where fiscal_year = 2021
13   group by division, p.product_code)
14
15   select * from cte1
16   where drnk <=3
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

division	product_code	product	sold_quantity	drnk
N & S	A6818160202	AQ Pen Drive DRC	688003	1
N & S	A6319160202	AQ Neuer SSD	412249	2
N & S	A6819160203	AQ Pen Drive DRC	676245	3
P & A	A2319150302	AQ Gamers Ms	428498	1
P & A	A2721150704	AQ Trigger Ms	411797	2
P & A	A2520150501	AQ Maxima Ms	419865	3
PC	A4520110504	AQ Gen X	16740	1
PC	A4218110207	AQ Digit	16464	2
PC	A4218110205	AQ Digit	17153	3

Output

N & S Division: "AQ Pen Drive DRC" is a standout, appearing twice in the top three.
P & A Division: Strong performance from "AQ Gamers Ms" variants.
PC Division: Lower quantities overall, dominated by "AQ Digit" products.

Summary

The task was to analyze various business metrics related to sales, products, customers, and channels based on the data provided in the request document. Here's what I did:

1. **Identifying Customer Markets**: Provided a list of markets where "Atliq Exclusive" operates in the APAC region.

2. **Analyzing Unique Product Growth**: Calculated the percentage increase in unique products from 2020 to 2021, including detailed counts for both years.

3. **Segment-Wise Product Count**: Generated a report showing the unique product counts per segment and sorted them in descending order.

4. **Segment Product Growth Analysis**: Identified the segment with the most increase in unique products from 2020 to 2021, detailing the counts and differences.

5. **Manufacturing Cost Insights**: Pinpointed the products with the highest and lowest manufacturing costs.

6. **Top Customers Report**: Listed the top 5 customers with the highest average pre-invoice discount percentage in 2021 within the Indian market.

7. **Monthly Sales for "Atliq Exclusive"**: Compiled a monthly report of gross sales for "Atliq Exclusive" to analyze performance trends.

8. **Best Quarter Analysis**: Identified the quarter in 2020 with the highest total sold quantity.

9. **Channel Contribution Analysis**: Determined the channel with the highest gross sales in 2021 and calculated its percentage contribution.

10. **Top Products in Divisions**: Identified the top 3 products in each division based on total sold quantity for the fiscal year 2021.