



Consumer Goods Ad-Hoc Insights

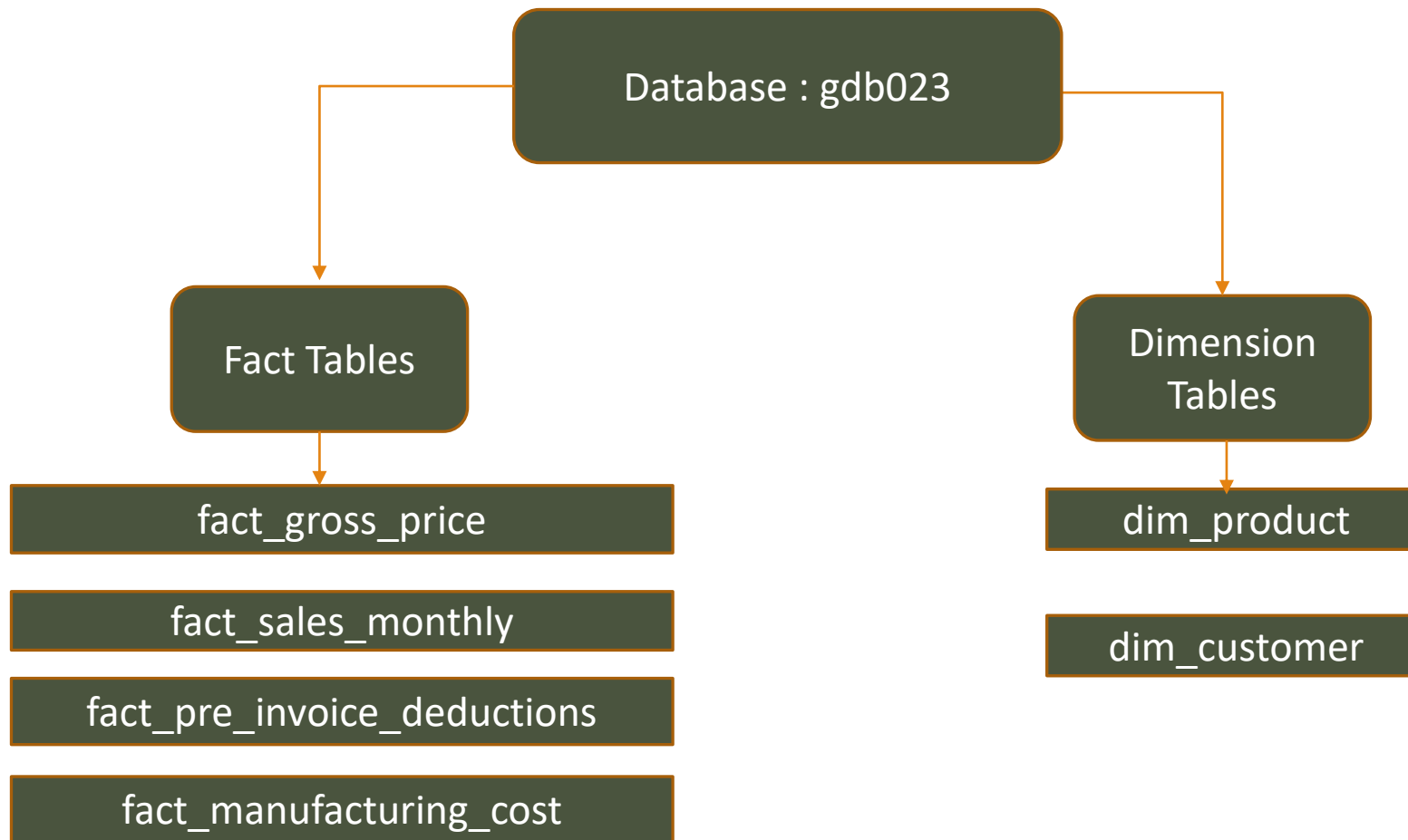
Codebasics Resume Project Challenge 4

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Agenda

- AtliQ Hardwares is one of the leading computer hardware producers in India and well expanded in other countries as well.
- However, the management noticed that they do not get enough insights to make quick and smart data-informed decisions.
- There are 10 Ad-Hoc request for which company needs insights.
- Ran SQL queries to answer these requests and visualize them and get insights.

Data description



Request - 1

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

Query:

```
SELECT customer,Market,region FROM dim_customer where customer = "AtliQ Exclusive" and region = "APAC" ORDER BY market DESC;
```

Output:

customer	Market	region
AtliQ Exclusive	South Korea	APAC
AtliQ Exclusive	Philippines	APAC
AtliQ Exclusive	Newzealand	APAC
AtliQ Exclusive	Japan	APAC
AtliQ Exclusive	Indonesia	APAC
AtliQ Exclusive	India	APAC
AtliQ Exclusive	India	APAC
AtliQ Exclusive	Bangladesh	APAC
AtliQ Exclusive	Australia	APAC

AtliQ Exclusive operates across 8 markets in the APAC region. The markets include South Korea, the Philippines, New Zealand, Japan, Indonesia, India, Bangladesh, and Australia. The data suggests a strong and diversified market reach in APAC.

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.

Query:

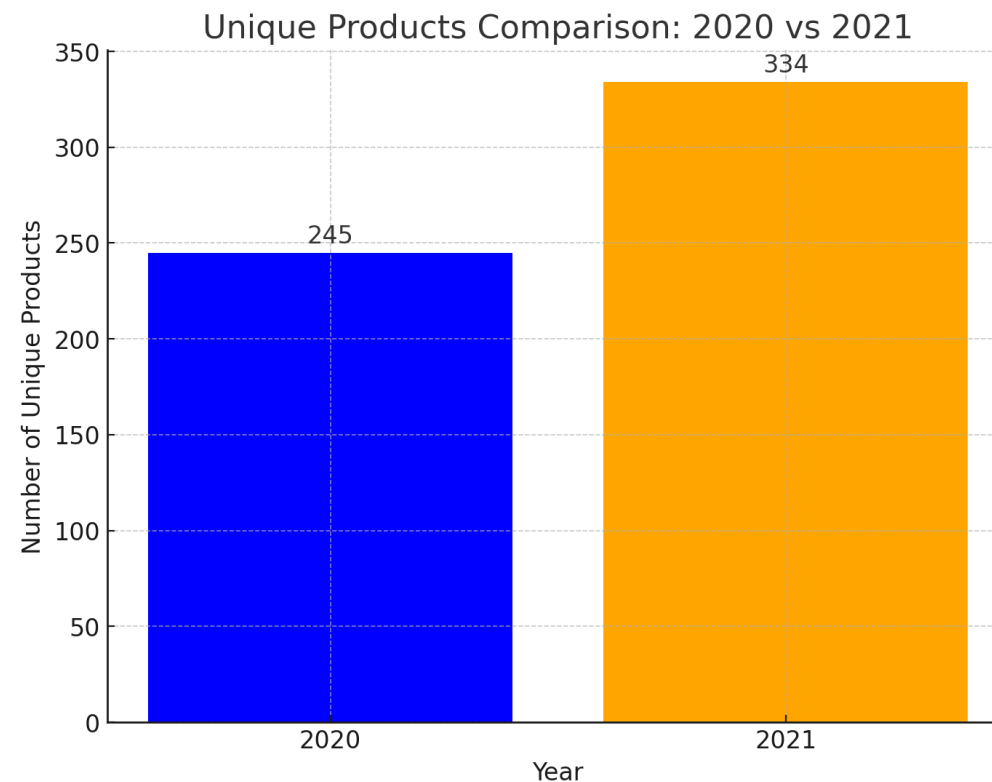
```
WITH unique_product_2020 AS
  (SELECT COUNT(DISTINCT product_code) AS unique_products_2020
   FROM fact_sales_monthly
   WHERE fiscal_year = 2020),
  unique_product_2021 AS
  (SELECT COUNT(DISTINCT product_code) AS unique_products_2021
   FROM fact_sales_monthly
   WHERE fiscal_year = 2021)
SELECT unique_products_2020,
       unique_products_2021,
       concat(ROUND((unique_products_2021 - unique_products_2020) / unique_products_2020 * 100, 2), '%') AS percentage_chg
FROM unique_product_2020
INNER JOIN unique_product_2021;
```

Request - 2

Output:

	unique_products_2020	unique_products_2021	percentage_chg
►	245	334	36.33%

The number of unique products increased from 245 in 2020 to 334 in 2021, reflecting a 36.33% growth. This indicates a significant expansion in the product range, suggesting successful product development or market penetration strategies that likely contributed to the overall business growth.



Request - 3

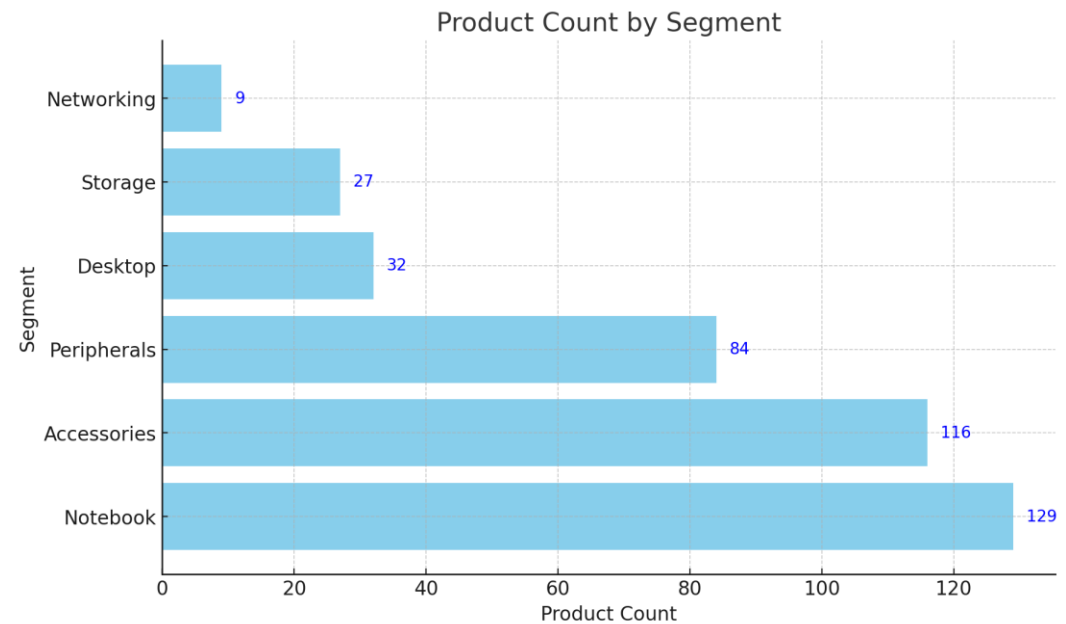
Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains two fields, segment and product_count.

Query:

```
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



Request - 4

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

Query:

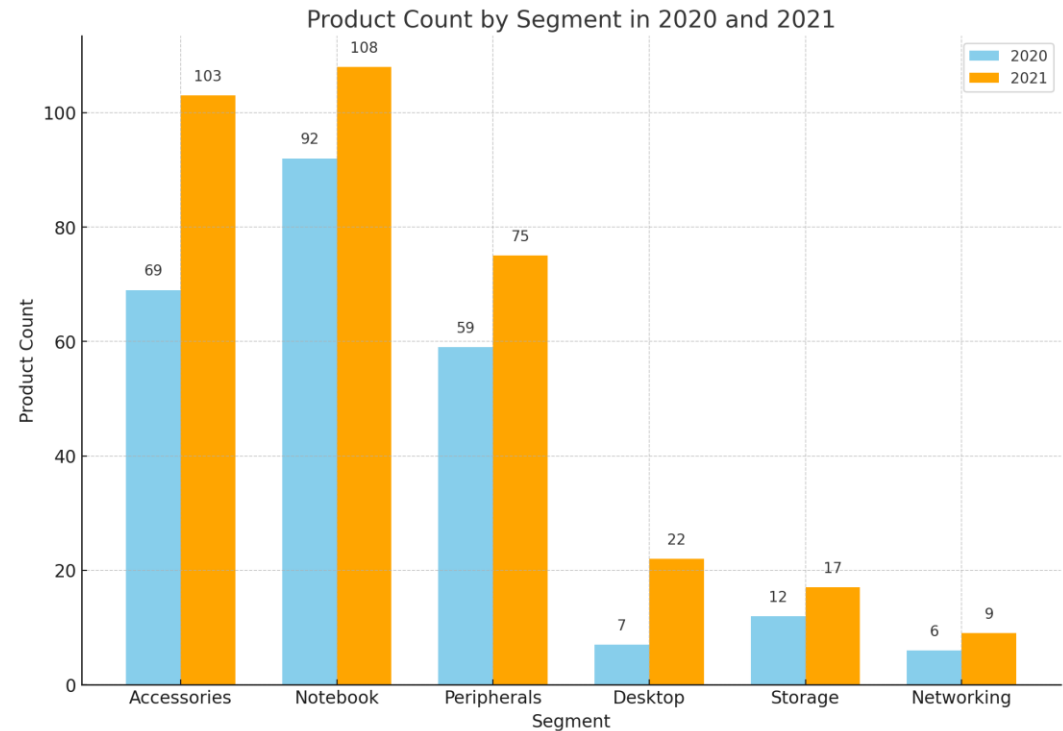
```
WITH cte_table_20 AS
> (SELECT p.segment,
      count(DISTINCT (p.product_code)) AS product_count_2020
  FROM dim_product p
  INNER JOIN fact_sales_monthly s ON p.product_code = s.product_code
  WHERE s.fiscal_year = 2020
  GROUP BY p.segment
  ORDER BY product_count_2020 DESC),
  cte_table_21 AS
> (SELECT p.segment,
      count(DISTINCT (p.product_code)) AS product_count_2021
  FROM dim_product p
  INNER JOIN fact_sales_monthly s ON p.product_code = s.product_code
  WHERE s.fiscal_year = 2021
  GROUP BY p.segment
  ORDER BY product_count_2021 DESC)
SELECT cte_table_20.segment,
      product_count_2020,
      product_count_2021,
      product_count_2021-product_count_2020 AS difference
FROM cte_table_20
INNER JOIN cte_table_21 ON cte_table_20.segment = cte_table_21.segment
ORDER BY difference DESC;
```


Request - 4

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

Accessories led growth with 34 new products in 2021, reaching 103 total. Notebooks and Peripherals each added 16 products, showing steady expansion. Desktops saw a significant rise from 7 to 22 products. Storage and Networking had modest increases, adding 5 and 3 products, respectively.



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.

Query:

```
SELECT a.product_code,a.product,b.manufacturing_cost
FROM dim_product a JOIN fact_manufacturing_cost b
on a.product_code = b.product_code
WHERE manufacturing_cost = (SELECT min(manufacturing_cost) FROM fact_manufacturing_cost)
OR
manufacturing_cost = (SELECT max(manufacturing_cost) FROM fact_manufacturing_cost)
```

Output:

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

The AQ Master wired x1 Ms has the lowest manufacturing cost at \$0.89, indicating it is likely a low-cost, high-volume product. In contrast, the AQ HOME Allin1 Gen 2 has a significantly higher manufacturing cost of \$240.54, suggesting it is a premium or more complex product.

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

Query:

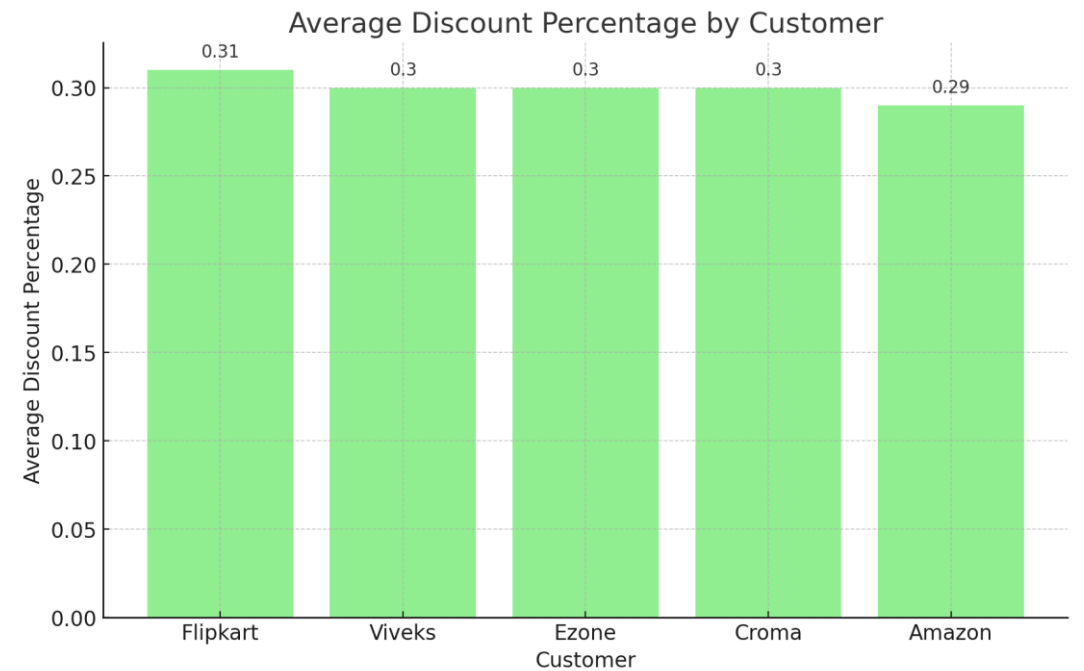
```
WITH top_5_customers AS
(
    SELECT
        c.customer_code,
        c.customer,
        round(avg(d.pre_invoice_discount_pct), 2) AS average_discount_percentage,
        rank() OVER (
            ORDER BY avg(d.pre_invoice_discount_pct) DESC
        ) AS ranks
    FROM dim_customer c
    INNER JOIN fact_pre_invoice_deductions d
        ON c.customer_code = d.customer_code
    WHERE d.fiscal_year = 2021
        AND c.market = 'India'
        AND d.pre_invoice_discount_pct >
        (
            SELECT avg(pre_invoice_discount_pct)
            FROM fact_pre_invoice_deductions
            WHERE fiscal_year = 2021
        )
    GROUP BY c.customer_code, c.customer
)
SELECT
    customer_code,
    customer,
    concat(average_discount_percentage, '%') AS average_discount_percentage
FROM top_5_customers
WHERE ranks <= 5;
```

Request - 6

Output:

customer_code	customer	average_discount_percentage
90002009	Flipkart	0.31%
90002006	Viveks	0.30%
90002003	Ezone	0.30%
90002002	Croma	0.30%
90002016	Amazon	0.29%

Flipkart leads with the highest average discount of 0.31%, indicating potential high-volume sales or strategic partnerships. Viveks, Ezone, and Croma follow closely with 0.30%. Amazon has the lowest at 0.29%, suggesting a slightly different discount strategy compared to other retailers.



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

Query:

```
SELECT month(s.date) Month,
       year(s.date) AS Year,
       round(sum(s.sold_quantity * g.gross_price), 2) AS Gross_sales_Amount
FROM fact_gross_price g
INNER JOIN fact_sales_monthly s ON g.product_code = s.product_code
INNER JOIN dim_customer c ON c.customer_code = s.customer_code
WHERE c.customer = 'Atliq Exclusive'
GROUP BY month(s.date),
         year(s.date)
ORDER BY month(s.date),
         year(s.date);
```

Request - 7

Output:

Month	Year	Gross_sales_Amount
1	2020	9584951.94
1	2021	19570701.71
2	2020	8083995.55
2	2021	15986603.89
3	2020	766976.45
3	2021	19149624.92
4	2020	800071.95
4	2021	11483530.30
5	2020	1586964.48
5	2021	19204309.41
6	2020	3429736.57
6	2021	15457579.66
7	2020	5151815.40
7	2021	19044968.82
8	2020	5638281.83
8	2021	11324548.34
9	2019	9092670.34
9	2020	19530271.30
10	2019	10378637.60
10	2020	21016218.21
11	2019	15231894.97
11	2020	32247289.79
12	2019	9755795.06
12	2020	20409063.18

Sales peaked in November 2020 and 2021, with the highest gross sales amounts of \$20.4M and \$32.2M, respectively. April consistently shows the lowest sales across years, indicating seasonal trends. The significant drop in sales during April 2020 suggests external factors impacting performance.

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

Query:

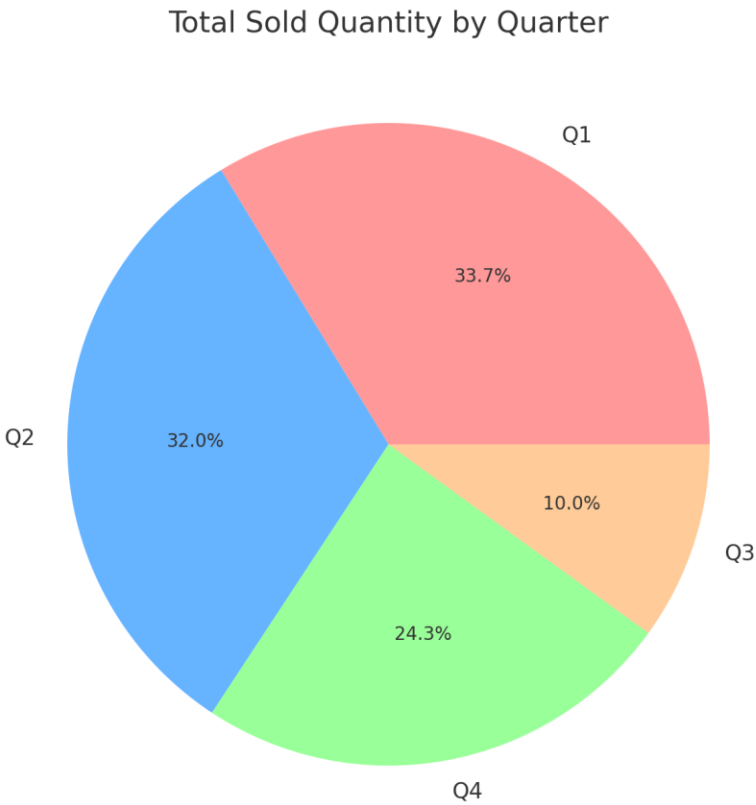
```
SELECT CASE
    WHEN monthname(date) in ('September','October','November') THEN 1
    WHEN monthname(date) in ('December','January','February') THEN 2
    WHEN monthname(date) in ('March','April','May') THEN 3
    WHEN monthname(date) in ('June','July','August') THEN 4
END AS Quarter,
sum(sold_quantity) AS total_sold_quantity
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY Quarter
ORDER BY total_sold_quantity DESC;
```

Request - 8

Output:

	Quarter	total_sold_quantity
▶	1	7005619
	2	6649642
	4	5042541
	3	2075087

Q1 leads with the highest total sold quantity at 7M, followed closely by Q2 at 6.6M, indicating strong early-year performance. Q3 shows the lowest sales at 2M, suggesting possible seasonal dips or market challenges during that period. Q4's sales rebound to 5M, reflecting year-end recovery.



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 .

Query:

```
with cte as
) (select channel,
round(sum(gross_price*b.sold_quantity)/1000000,2)
as Gross_Sales_min
from dim_customer a join fact_sales_monthly b
on a.customer_code = b.customer_code
join fact_gross_price c
on c.product_code = b.product_code
where b.fiscal_year = 2021
group by channel order by Gross_Sales_min)
select *,(Gross_sales_min*100)/sum(Gross_sales_min)
over() as Percentage
from cte;
```

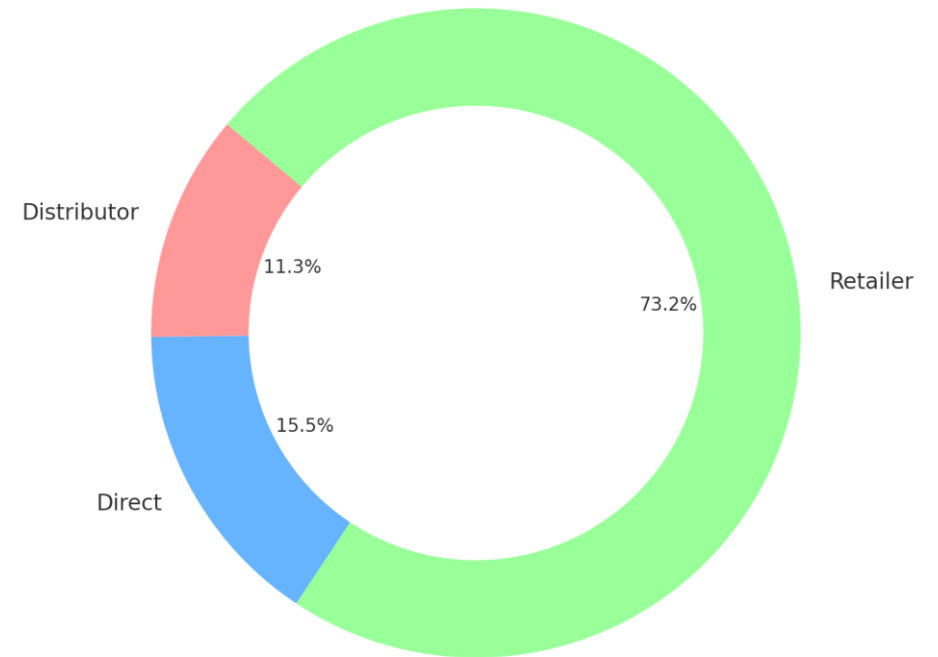
Output:

	channel	Gross_Sales_min	Percentage
▶	Distributor	297.18	11.308047
	Direct	406.69	15.475031
	Retailer	1924.17	73.216922

Request - 9

Retailer channel dominates with 73.2% of gross sales, indicating it is the primary sales driver. Direct sales contribute 15.5%, showing a significant but smaller role. Distributors account for 11.3%, suggesting a diversified but less impactful sales strategy through intermediaries.

Gross Sales Distribution by Channel



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 .

Query:

```
WITH top_3_products AS
(
    SELECT p.division,
           p.product_code,
           p.product,
           sum(s.sold_quantity) AS total_sold_quantity,
           DENSE_RANK() OVER(PARTITION BY p.division
                              ORDER BY sum(s.sold_quantity) DESC) AS rank_order
    FROM dim_product p
    INNER JOIN fact_sales_monthly s ON p.product_code = s.product_code
    WHERE s.fiscal_year = 2021
    GROUP BY p.division,
             p.product_code,
             p.product)
SELECT *
FROM top_3_products
WHERE rank_order <= 3;
```

Output:

division	product_code	product	total_sold_quantity	rank_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	A4319110306	AQ Velocity	17280	2
PC	A4218110208	AQ Digit	17275	3

The N & S division leads with AQ Pen Drive 2 IN 1 topping sales at 701,373 units, followed by AQ Pen Drive DRC variants. The P & A division shows strong sales with AQ Gamers Ms and AQ Maxima Ms. The PC division has lower sales, with AQ Digit and AQ Velocity leading but under 18K units.