

Codebasics SQL Challenge

Requests:

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

Answer:

```
SELECT DISTINCT market
FROM fact_sales_monthly INNER JOIN dim_customer
ON fact_sales_monthly.customer_code = dim_customer.customer_code
WHERE customer = "Atliq Exclusive" AND region = "APAC"
```

	market
▶	India
	Indonesia
	Japan
	Philippines
	South Korea
	Australia
	Newzealand
	Bangladesh

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

Answer:

WITH

```
result1 (unique_products_2020) AS (
    SELECT COUNT(DISTINCT product_code) AS unique_products_2020
    FROM fact_sales_monthly
    WHERE fiscal_year = "2020"
),
result2 (unique_products_2021) AS (
    SELECT COUNT(DISTINCT product_code) AS unique_products_2020
    FROM fact_sales_monthly
    WHERE fiscal_year = "2021"
),
result3 (percentage_chg) AS (
    SELECT ROUND((((unique_products_2021/unique_products_2020)-1)*100),2)
    FROM result1 JOIN result2
)
```

SELECT * FROM result1 JOIN result2 JOIN result3

	unique_products_2020	unique_products_2021	percentage_chg
▶	245	334	0.36

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

Answer:

WITH

```
count_column (segment, product_count) AS (
    SELECT segment, COUNT(distinct product_code)
    FROM dim_product
    GROUP BY segment
)
```

SELECT * FROM count_column ORDER BY product_count DESC

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

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

Answer:

WITH

```
segment20_sel (segment, product_count_2020) AS (
    SELECT segment, count(DISTINCT fact_gross_price.product_code)
    FROM fact_gross_price JOIN dim_product
        ON fact_gross_price.product_code=dim_product.product_code
    WHERE fact_gross_price.fiscal_year="2020"
    GROUP BY segment
),
segment21_sel (segment, product_count_2021) AS (
    SELECT segment, count(DISTINCT fact_gross_price.product_code)
    FROM fact_gross_price JOIN dim_product
        ON fact_gross_price.product_code=dim_product.product_code
    WHERE fact_gross_price.fiscal_year="2021"
    GROUP BY segment
)
```

```
SELECT segment20_sel.segment, product_count_2020, product_count_2021,
ROUND(100*(product_count_2021/product_count_2020)-1) as difference
FROM segment20_sel INNER JOIN segment21_sel
    ON segment20_sel.segment = segment21_sel.segment
ORDER BY difference DESC
```

	segment	product_count_2020	product_count_2021	difference
►	Desktop	7	22	2.14
	Networking	6	9	0.50
	Accessories	69	103	0.49
	Storage	12	17	0.42
	Peripherals	59	75	0.27
	Notebook	92	108	0.17

5. Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields, product_code product manufacturing_cost

Answer:

```
WITH big_table(product_code, product, manufacturing_cost) AS (
    SELECT fact_manufacturing_cost.product_code, product, manufacturing_cost
    FROM fact_manufacturing_cost INNER JOIN dim_product
    ON fact_manufacturing_cost.product_code = dim_product.product_code
)
SELECT product_code, product, ROUND(manufacturing_cost,2) as manufacturing_cost
FROM big_table
WHERE manufacturing_cost = (SELECT max(manufacturing_cost) FROM big_table)
UNION ALL
SELECT product_code, product, ROUND(manufacturing_cost,2) as manufacturing_cost
FROM big_table
WHERE manufacturing_cost = (SELECT min(manufacturing_cost) FROM big_table)
```

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

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

Answer:

```
SELECT dim_customer.customer_code, customer, ROUND(pre_invoice_discount_pct*100,2) AS
average_discount_percentage
FROM fact_pre_invoice_deductions INNER JOIN dim_customer
ON fact_pre_invoice_deductions.customer_code = dim_customer.customer_code
WHERE fiscal_year="2021"
AND pre_invoice_discount_pct>=(SELECT AVG(pre_invoice_discount_pct) FROM
fact_pre_invoice_deductions where fiscal_year="2021")
AND market = "India"
ORDER BY pre_invoice_discount_pct DESC
LIMIT 5
```

	customer_code	customer	average_discount_percentage
▶	90001021	Taobao	0.3095
	90013122	Radio Popular	0.3093
	80006155	Novus	0.3091
	90020099	Integration Stores	0.3091
	90002009	Flipkart	0.3083

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

Answer:

```
SELECT month(date) as month, year(date) as year, round(sum(sold_quantity*gross_price)) as Gross_sales_Amount
```

```
FROM fact_sales_monthly INNER JOIN fact_gross_price
```

```
ON fact_gross_price.product_code=fact_sales_monthly.product_code
```

```
AND fact_gross_price.fiscal_year=fact_sales_monthly.fiscal_year
```

```
INNER JOIN dim_customer
```

```
ON dim_customer.customer_code=fact_sales_monthly.customer_code
```

```
WHERE dim_customer.customer="Atliq Exclusive"
```

```
GROUP BY date ORDER BY year and month ASC
```

	month	year	Gross_sales_Amount		month	year	Gross_sales_Amount
►	9	2019	4496260		11	2020	20464999
	10	2019	5135902		12	2020	12944660
	11	2019	7522893		1	2021	12399393
	12	2019	4830405		2	2021	10129736
	1	2020	4740600		3	2021	12144061
	2	2020	3996228		4	2021	7312000
	3	2020	378771		5	2021	12150225
	4	2020	395035		6	2021	9824521
	5	2020	783813		7	2021	12092346
	6	2020	1695217		8	2021	7178708

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

Answer:

```
SELECT quarter(date) AS Quarter, round(sum(sold_quantity*gross_price)) AS total_sold_quantity
```

```
FROM fact_sales_monthly
```

```
INNER JOIN fact_gross_price
```

```
ON fact_sales_monthly.product_code=fact_gross_price.product_code
```

```
WHERE year(date)="2020"
```

```
GROUP BY quarter(date) ORDER BY total_sold_quantity DESC
```

	Quarter	total_sold_quantity
►	4	915790241
	3	373299747
	1	191963625
	2	175807158

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

Answer:

```
WITH tabela (channel, gross_sales_mln) AS (
    SELECT channel, round(sum(sold_quantity*gross_price)) AS gross_sales_mln
    FROM fact_sales_monthly
    INNER JOIN fact_gross_price
        ON fact_sales_monthly.product_code=fact_gross_price.product_code
        AND fact_sales_monthly.fiscal_year=fact_gross_price.fiscal_year
    INNER JOIN dim_customer
        ON fact_sales_monthly.customer_code=dim_customer.customer_code
    WHERE year(date)="2021"
    GROUP BY channel
)
SELECT channel, gross_sales_mln, ROUND(gross_sales_mln/(SELECT sum(gross_sales_mln) FROM
tabela)*100) AS percentage
FROM tabela
ORDER BY percentage DESC
```

	channel	gross_sales_mln	percentage
►	Retailer	705532519	73
	Direct	150664256	16
	Distributor	107332599	11

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

Answer:

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

	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