CODEBASICS SQL RESUME CHALLENGE

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OBJECTIVES

- AtliqHardware (fictitious corporation) is one of the major computer hardware manufacturers in India, with a strong presence in other nations.
- Nevertheless, the management did note that they do not have sufficient insights to make prompt, wise, and data-informed judgments.
- Plan to expand the data analytics team by adding junior data analysts.
- To assess candidates, Data analytics director, Tony Sharma plans to conduct a SQL challenge to evaluate both tech and soft skills.

Q1. Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.

```sql
USE gdb023;
SELECT DISTINCT market
FROM dim_customer
WHERE customer='Atliq Exclusive' and region='APAC';
```

market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

INSIGHT

- Company has widespread markets in the Asia Pacific region

Q2. What is the percentage of unique product increase in 2021 vs. 2020?

```sql
SELECT COUNT(*) AS unique_products_2020 FROM (SELECT DISTINCT product_code FROM fact_sales_monthly
WHERE product_code IN (SELECT product_code FROM fact_sales_monthly
WHERE date>='2020-01-01' and date<='2021-01-01') )AS unique_products_2020;


SELECT COUNT(*) AS unique_products_2021 FROM(SELECT DISTINCT product_code FROM fact_sales_monthly
WHERE product_code IN (SELECT product_code FROM fact_sales_monthly
WHERE date>='2021-01-01' and date<='2022-01-01') ) AS unique_products_2021;


CREATE TABLE if not exists unique_products (unique_products_2020 INT ,unique_products_2021 INT );
INSERT INTO unique_products
VALUES(347,334);


SELECT unique_products_2020,unique_products_2021, (unique_products_2020-unique_products_2021) AS new_products,
((unique_products_2020-unique_products_2021)/unique_products_2020)*100 AS percentage_change FROM unique_products;
```

INSIGHT

- Demand and Production both increased

unique_products_2020	unique_products_2021	new_products	percentage_change
347	334	13	3.7464

Q3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts

```sql
USE gdb023;

SELECT segment,count(DISTINCT product_code) AS product_count
 FROM dim_product
 GROUP BY segment;
```

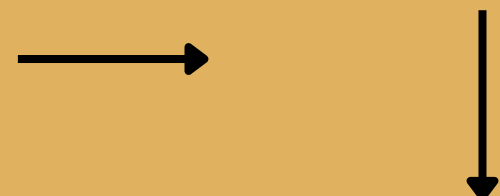| segment	product_count
Accessories	116
Desktop	32
Networking	9
Notebook	129
Peripherals	84
Storage	27

INSIGHT

- Segments: notebooks, accessories, and peripherals are showing significant manufacturing growth as compared to desktops, storage, and networking.

Q5. Get the products that have the highest and lowest manufacturing costs.

```sql
SELECT product,manufacturing_cost  FROM
fact_manufacturing_cost f JOIN dim_product d
ON
f.product_code=d.product_code
WHERE manufacturing_cost=(SELECT MAX(manufacturing_cost) FROM fact_manufacturing_cost )
or manufacturing_cost=(SELECT MIN(manufacturing_cost) FROM fact_manufacturing_cost )
```

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

INSIGHT

- Mouse: AQ Master wired x1 Ms (Variant:Standard1) has the lowest manufacturing cost. Personal Desktop:
- AQ Home Allin1 Gen2 (Variant:Plus3) has the highest manufacturing cost.

Q6. Generate a report which contains the top 5 customers who received an average high invoice_discount for the fiscal year 2021 and in the Indian market

```sql
USE gdb023;

SELECT customer,c.customer_code,pre_invoice_discount_pct
FROM fact_pre_invoice_deductions f
JOIN
dim_customer c
ON f.customer_code=c.customer_code
ORDER BY pre_invoice_discount_pct DESC
LIMIT 5;
```

customer	customer_code	pre_invoice_discount_pct
Taobao	90001021	0.3095
Radio Popular	90013122	0.3093
Radio Popular	90021090	0.3091
Integration Stores	90020099	0.3091
Novus	80006155	0.3091

INSIGHT

- The largest average pre-invoice discount was given to Taobao.
- The least average pre-invoice discount was given to Novus.

Q7. Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month.

```sql
USE gdb023;
WITH result AS(SELECT gross_price,EXTRACT(YEAR FROM date) as year,
EXTRACT(MONTH FROM date) AS month,
(gp.gross_price*sm.sold_quantity) AS gross_sales_amount
FROM fact_sales_monthly sm JOIN fact_gross_price gp
ON sm.product_code=gp.product_code)


SELECT month,year, SUM(gross_sales_amount) FROM result
GROUP BY month,year;
```

month	year	SUM(gross_sales_amount)
9	2019	91320542.4239
10	2019	114700230.8892
11	2019	159112674.1179
12	2019	168812491.4065
1	2020	91783169.9765
2	2020	88886540.2680
3	2020	11293915.2465
4	2020	41699282.4505
5	2020	53044063.5670
6	2020	81063812.4389
7	2020	89166652.0069

INSIGHT

- The lowest Gross sales total for both fiscal years is in March.
- The highest Gross sales total for both fiscal years is in November .

Q8. In which quarter of 2020, got the maximum total_sold_quantity?

```sql
SELECT
CASE
        WHEN EXTRACT(MONTH FROM sm.date) IN (9, 10, 11) and EXTRACT(YEAR FROM sm.date)=2020 THEN 'Q1'
        WHEN EXTRACT(MONTH FROM sm.date) IN (12, 1, 2) and EXTRACT(YEAR FROM sm.date)=2020 THEN 'Q2'
        WHEN EXTRACT(MONTH FROM sm.date) IN (3, 4, 5)  and EXTRACT(YEAR FROM sm.date)=2020 THEN 'Q3'
        WHEN EXTRACT(MONTH FROM sm.date) IN (6, 7, 8) and EXTRACT(YEAR FROM sm.date)=2020 THEN 'Q4'
END AS quarter,
SUM(sold_quantity) AS total_sold_quantity FROM fact_sales_monthly AS sm
GROUP BY quarter
ORDER BY total_sold_quantity DESC ;
```

quarter	total_sold_quantity
NULL	39252498
Q1	14476194
Q2	10091151
Q4	5042541
Q3	2075087

INSIGHT

- Quarter 1 of FY2020 saw the most units sold overall, while Quarter3 had the fewest.

Q9. Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution?

```sql
USE gdb023;

WITH result AS(SELECT c.channel,SUM(gp.gross_price*sm.sold_quantity)/1000000 AS gross_sales_mln
FROM fact_sales_monthly sm JOIN fact_gross_price gp ON sm.product_code= gp.product_code
JOIN dim_customer c ON sm.customer_code=c.customer_code
WHERE EXTRACT(YEAR FROM sm.date)=2021
GROUP BY c.channel),
total_sales AS(SELECT SUM(gross_sales_mln) as total_sales_mln FROM result)

SELECT channel,gross_sales_mln,(gross_sales_mln/total_sales_mln)*100 as percentage FROM result ,total_sales;
```

channel	gross_sales_mln	percentage
Direct	237.72452548	15.630421755344
Distributor	169.22513983	11.126577292811
Retailer	1113.95955391	73.243000951845

INSIGHT

- Channel: "Retailer " helped bring maximum sales to the company with 73.22% as the contribution percentage.
- Channel: "Distributor " makes the least contribution at a percentage of 11.31%

Q10. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021?

```sql
USE gdb023;

WITH ranked_products AS(
SELECT p.product,SUM(sm.sold_quantity) as total_sold_quantity,p.division,
ROW_NUMBER() OVER(PARTITION BY p.division ORDER BY sum(sm.sold_quantity) DESC) AS ranked
FROM dim_product p JOIN fact_sales_monthly sm ON p.product_code=sm.product_code
WHERE EXTRACT(YEAR FROM sm.date)=2021
GROUP BY p.division,p.product)

SELECT product,total_sold_quantity,division
FROM ranked_products
WHERE ranked<=3
ORDER BY total_sold_quantity DESC
```

product	total_sold_quantity	division
AQ Maxima Ms	1430834	P & A
AQ Lite Ms	1430579	P & A
AQ Gamers Ms	1425196	P & A
AQ Pen Drive DRC	1184498	N & S
AQ Clx1	723844	N & S
AQ Digit SSD	723771	N & S
AQ Elite	78639	PC
AQ Digit	78229	PC
AQ Gen Y	78194	PC

INSIGHT

- Every division has a product with different variants that appears twice in the top three products by division list.