Provide insights to the management in the consumer goods domain

Domain: Consumer Goods | Function: Executive Management

Atliq Hardwares (imaginary company) is one of the leading computer hardware producers in India and well expanded in other countries too.

However, the management noticed that they do not get enough insights to make quick and smart data-informed decisions. They want to expand their data analytics team by adding several junior data analysts. Tony Sharma, their data analytics director wanted to hire someone who is good at both tech and soft skills. Hence, he decided to conduct a SQL challenge which will help him understand both the skills.

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

SQL Command

```
SELECT DISTINCT(market) FROM dim_customer
WHERE region = 'APAC'
```

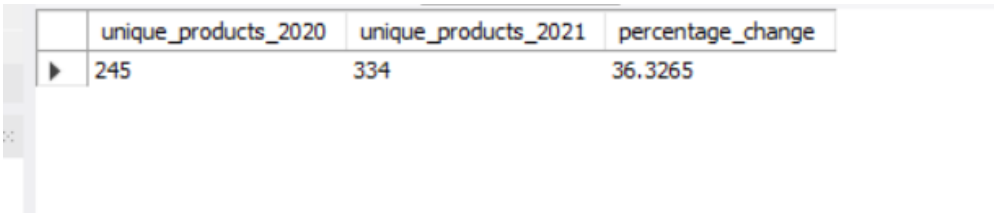
market
India
Indonesia
Japan
Pakistan
Philiphines
South Korea
Australia
Newzealand
Bangladesh
China

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

   SQL Command

```
SELECT
COUNT(DISTINCT CASE WHEN fiscal_year = 2020 THEN product_code END) as
unique_products_2020,
COUNT(DISTINCT CASE WHEN fiscal_year = 2021 THEN product_code END) as
unique_products_2021,
(COUNT(DISTINCT CASE WHEN fiscal_year = 2021 THEN product_code END) -
COUNT(DISTINCT CASE WHEN fiscal_year = 2020 THEN product_code END))
/COUNT(DISTINCT CASE WHEN fiscal_year = 2020 THEN product_code END) * 100 AS
percentage_change

FROM fact_sales_monthly
WHERE fiscal_year IN (2020,2021)
```



unique_products_2020	unique_products_2021	percentage_change
245	334	36.3265

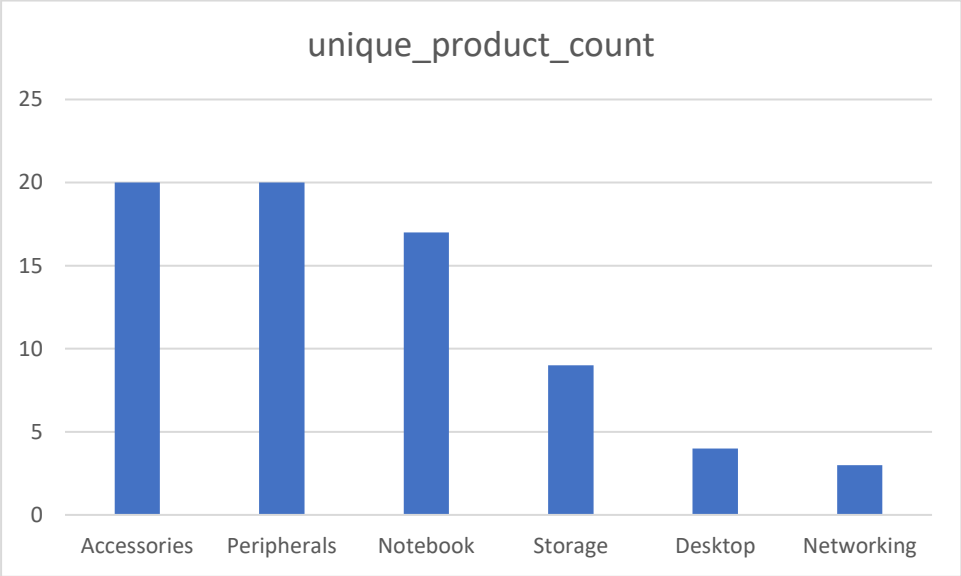
3. **Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields,**

   segment
   product_count

   SQL Code

```
SELECT segment, COUNT(DISTINCT product) as unique_product_count
FROM dim_product
GROUP BY 1
ORDER BY 2 desc
```

segment	unique_product_count
Accessories	20
Peripherals	20
Notebook	17
Storage	9
Desktop	4
Networking	3



4. **Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields,**

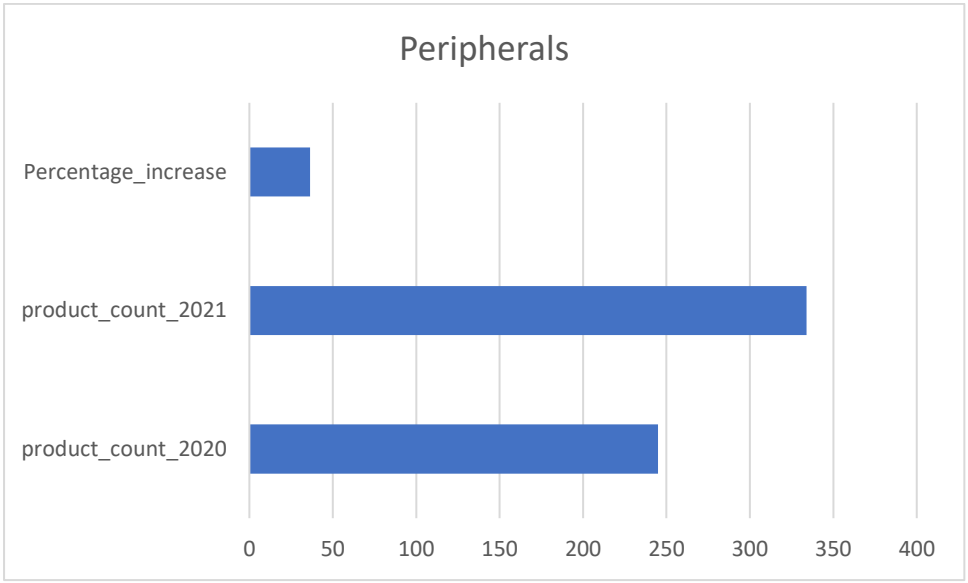
segment
product_count_2020
product_count_2021
difference

SQL Code

SELECT dp.segment,

```
COUNT(DISTINCT CASE WHEN fsm.fiscal_year = 2020 THEN dp.product_code END) as
product_count_2020,

COUNT(DISTINCT CASE WHEN fsm.fiscal_year = 2021 THEN dp.product_code END) as
product_count_2021,

(COUNT(DISTINCT CASE WHEN fsm.fiscal_year = 2021 THEN dp.product_code END) -

COUNT(DISTINCT CASE WHEN fsm.fiscal_year = 2020 THEN dp.product_code END))/

COUNT(DISTINCT CASE WHEN fsm.fiscal_year = 2020 THEN dp.product_code END) * 100 AS
Percentage_increase

FROM dim_product as dp

JOIN fact_sales_monthly fsm

ON dp.product_code = fsm.product_code

ORDER BY Percentage_increase DESC

LIMIT 1;
```

segment	product_count_2020	product_count_2021	Percentage_increase
Peripherals	245	334	36.3265



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

product_code

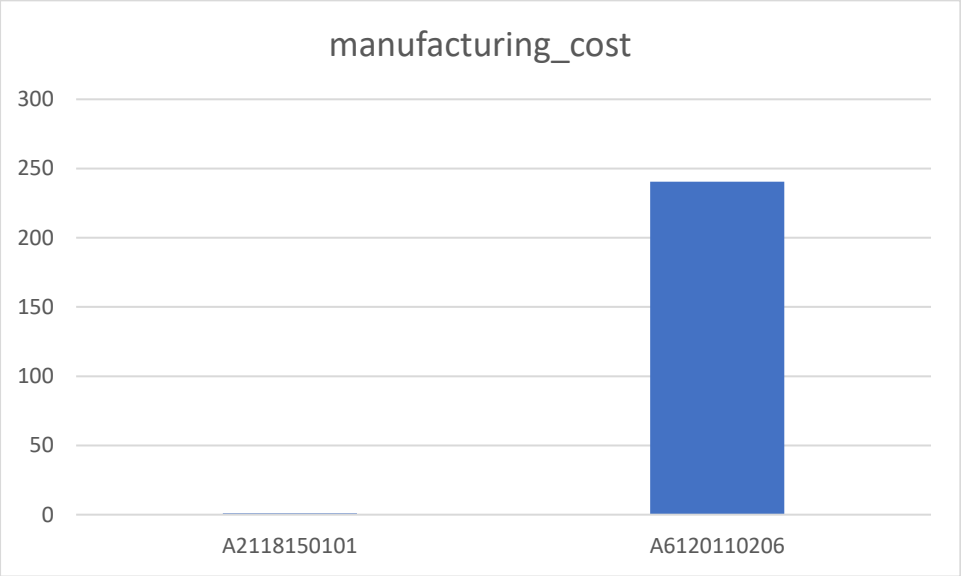
product

manufacturing_cost

SQL Code

```
WITH table1 as (SELECT fmc.product_code,
dp.product,
fmc.manufacturing_cost
FROM fact_manufacturing_cost fmc
JOIN dim_product dp
ON fmc.product_code = dp.product_code
ORDER BY 3
LIMIT 1 ),

table2 as (
SELECT fmc.product_code,
dp.product,
fmc.manufacturing_cost
FROM fact_manufacturing_cost fmc
JOIN dim_product dp
ON fmc.product_code = dp.product_code
ORDER BY 3 DESC
LIMIT 1 )

SELECT * FROM table1
UNION
SELECT * FROM table2
```

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



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

SQL Code

```
SELECT fpd.customer_code,
fpd.fiscal_year,
fpd.pre_invoice_discount_pct
FROM fact_pre_invoice_deductions fpd
JOIN dim_customer dc
ON fpd.customer_code = dc.customer_code
WHERE fpd.fiscal_year = 2021 and dc.market = 'India'
```

ORDER BY 3 DESC

LIMIT 5;

customer_code	fiscal_year	pre_invoice_discount_pct
90002009	2021	0.3083
90002006	2021	0.3038
90002003	2021	0.3028
90002002	2021	0.3025
90002016	2021	0.2933

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

SQL Code

```
SELECT EXTRACT(MONTH from fsm.date) as month_sales,
fsm.fiscal_year,
dc.customer,
fgp.gross_price * fsm.sold_quantity as gross_sales_amount
FROM fact_sales_monthly fsm
JOIN fact_gross_price fgp
ON fsm.product_code = fgp.product_code
JOIN dim_customer dc
```

```
ON fsm.customer_code = dc.customer_code
WHERE dc.customer = 'Atliq Exclusive'
GROUP BY 1,2
ORDER BY 1,2
```

month_sales	fiscal_year	customer	gross_sales_amount
1	2020	Atliq Exclusive	1152.4933
1	2021	Atliq Exclusive	2564.7034
2	2020	Atliq Exclusive	1947.8760
2	2021	Atliq Exclusive	2142.6636
3	2020	Atliq Exclusive	32.4646
3	2021	Atliq Exclusive	665.5243
4	2020	Atliq Exclusive	259.7168
4	2021	Atliq Exclusive	2386.1481
5	2020	Atliq Exclusive	97.3938

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

SQL Code

```
SELECT quarter(date) as quarter_sales,
sum(sold_quantity) as total_sold_quantity
FROM fact_sales_monthly
GROUP BY 1
ORDER BY 2 DESC
```

	quarter_sales	total_sold_quantity
▶	4	25872947
	3	16271564
	1	14565784
	2	14227176

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

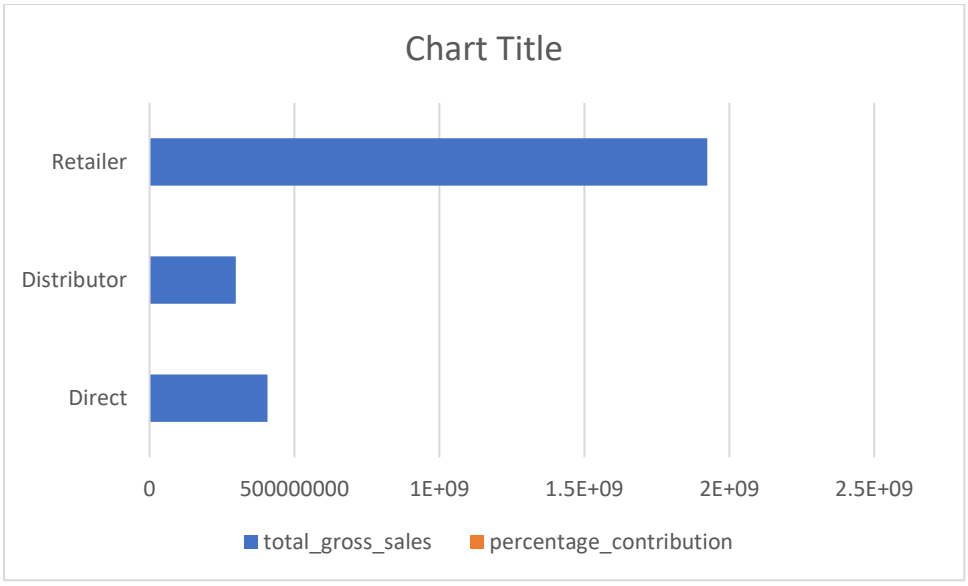
SQL Code

```
WITH table1 as (SELECT dc.channel,
fgp.gross_price * fsm.sold_quantity as gross_sales,
```

```
fsm.fiscal_year

FROM fact_sales_monthly fsm

JOIN fact_gross_price fgp

ON fsm.product_code = fgp.product_code

JOIN dim_customer dc

ON dc.customer_code = fsm.customer_code)
```

```
SELECT channel, SUM(gross_sales) as total_gross_sales,

SUM(gross_sales)/(SELECT SUM(gross_sales) FROM table1 WHERE fiscal_year = 2021) * 100 as
percentage_contribution

FROM table1

WHERE fiscal_year = 2021

GROUP BY 1
```

	channel	total_gross_sales	percentage_contribution
▶	Direct	406686873.9033	15.47495220
	Distributor	297175879.7188	11.30791975
	Retailer	1924170397.9096	73.21712806



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

SQL Code

```
SELECT * FROM (SELECT dp.division,
fsm.product_code,
dp.product,
sum(fsm.sold_quantity) as total_sold_quantity,
dense_rank() over(partition by dp.division order by sold_quantity desc) as rank_order
FROM dim_product as dp
JOIN fact_sales_monthly fsm
ON fsm.product_code = dp.product_code
WHERE fsm.fiscal_year = 2021
GROUP BY 1,2,3 ) X WHERE X.rank_order<4
```

	division	product_code	product	total_sold_quantity	rank_order
▶	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