



Resume Challenge

Provide Insights to the management in Consumer Goods Domain

SQL Approach

Background

AtliQ Hardware is one of the leading computer hardware producers in India and it is well-expanded in other countries as well.

Problem statement

The management has observed a need for quicker and more insightful data-driven decision-making. They plan to expand the data analytics team by hiring junior analysts to address this. Tony Sharma, the Director of Data Analytics, is specifically looking for individuals skilled in technical and soft aspects. In pursuit of this, he has introduced a SQL challenge to assess candidates comprehensively in SQL proficiency and soft skills. This approach aims to identify candidates with technical expertise and effective communication and collaboration abilities, essential for the team's success.

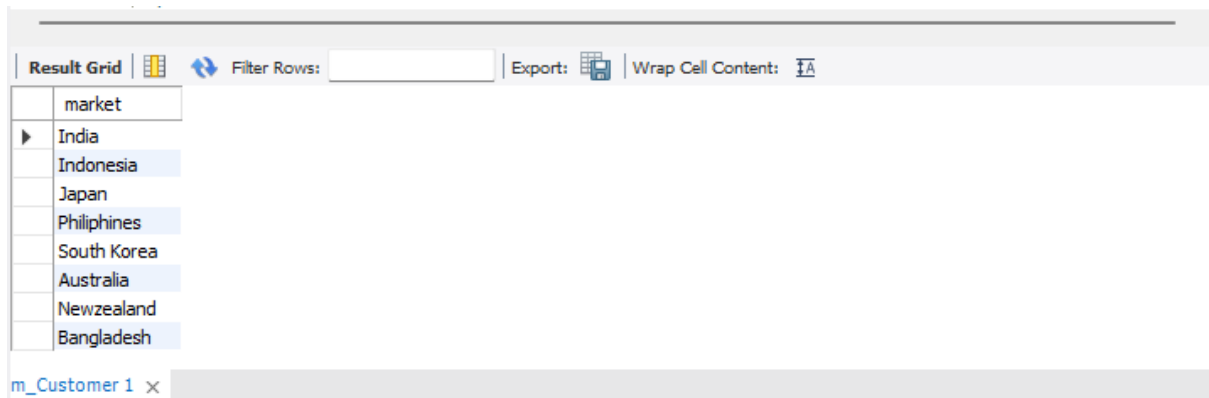
Objective

In the capacity of a Junior Data Analyst, my primary goal is to respond to ten ad hoc requests from the business, translating these queries into actionable insights. This involves delving into the data, extracting relevant information, and presenting solutions that align with the strategic objectives of the organization.

Consumer Goods Ad-hoc-Insights

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

```
SELECT distinct market  
  
FROM dim_Customer  
  
WHERE customer = "Atliq Exclusive" and region = "APAC".
```



The screenshot shows a data tool interface with a 'Result Grid' tab. The grid contains a single column named 'market' with the following rows: India, Indonesia, Japan, Philippines, South Korea, Australia, Newzealand, and Bangladesh. The interface also includes a 'Filter Rows' field, an 'Export' button, and a 'Wrap Cell Content' checkbox. A tab labeled 'm_Customer 1' is visible at the bottom.

market
India
Indonesia
Japan
Philippines
South Korea
Australia
Newzealand
Bangladesh

Q2 What is percentage of unique product increase in 2021 vs 2020 ? The final output should contain these field unique_products2020, unique_products_2021, percentage-change.

with ProductCounts2020 as (

```
SELECT count(distinct product_code) as unique_products_2020  
  
FROM fact_sales_monthly  
  
WHERE fiscal_year = 2020 ),
```

ProductCounts2021 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,
```

```
round((((unique_products_2021-  
unique_products_2020)/unique_products_2020)*100,2) as percentage_change
```

```
FROM ProductCounts2020, ProductCounts2021;
```

Result Grid			
Filter Rows:		Export:	Wrap Cell Content:
	unique_products_2020	unique_products_2021	percentage_change
▶	245	334	36.33

Result 2 x

Q3 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 segments, product_counts.

```
SELECT segment, count(distinct product_code) as product_counts
FROM dim_product
GROUP BY segment
ORDER BY product_counts DESC;
```

Result Grid		
Filter Rows:		Export: Wrap Cell Content:
	segment	product_counts
▶	Notebook	129
	Accessories	116
	Peripherals	84
	Desktop	32
	Storage	27
	Networking	9

Result 3 x

#Q4 which segment had the most increase in unique products in 2021 vs 2020 ? The output contains these fields, segment, product_counts_2020, product_counts_2021, difference.

with product_count_2021 as (

```
select segment, count(distinct s.product_code) as product_count_2021
from dim_product p
join fact_sales_monthly s
on p.product_code = s.product_code
```

```

where fiscal_year = 2021
group by 1),
product_count_2020 as (
    select segment, count(distinct s.product_code) as product_count_2020
    from dim_product p
    join fact_sales_monthly s
    on p.product_code= s.product_code
    where fiscal_year = 2020
    group by 1)
select
    p21.segment, product_count_2021, product_count_2020 , (product_count_2021 -
    product_count_2020) as difference
from product_count_2021 p21
join product_count_2020 p20
on p21.segment = p20.segment;

```

Result Grid Filter Rows: Export: Wrap Cell Content:				
	segment	product_count_2021	product_count_2020	difference
▶	Accessories	103	69	34
	Desktop	22	7	15
	Networking	9	6	3
	Notebook	108	92	16
	Peripherals	75	59	16
	Storage	17	12	5

Result 5 x

#Q5 Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields, product_code, product, manufacturing_cost.

```

select mc.product_code, product, manufacturing_cost
from fact_manufacturing_cost mc
join dim_product p

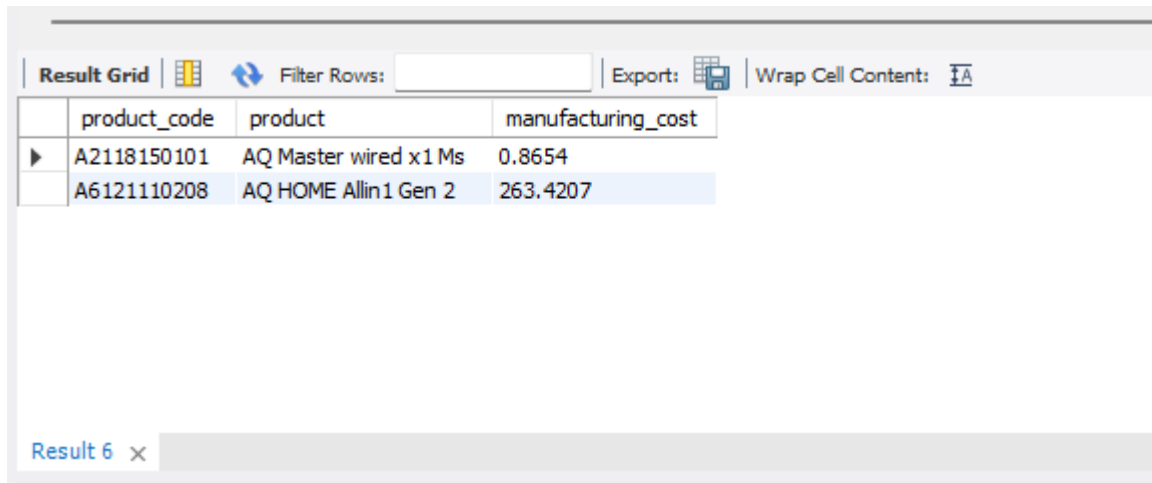
```

on p.product_code = mc.product_code

where manufacturing_cost in (

(select min(manufacturing_cost) from fact_manufacturing_cost),

(select max(manufacturing_cost) from fact_manufacturing_cost));



The screenshot shows a database query result grid with the following data:

	product_code	product	manufacturing_cost
▶	A2118150101	AQ Master wired x1 Ms	0.8654
	A6121110208	AQ HOME Allin1 Gen 2	263.4207

Below the table, there is a tab labeled "Result 6" with a close button (x).

Q6 generate a report which contains the top 5 customers who recieved a 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.

select pi.customer_code, c.customer, pi.pre_invoice_discount_pct

from dim_customer c

join fact_pre_invoice_deductions pi

on c.customer_code = pi.customer_code

where fiscal_year = 2021 and market = "india" and

pre_invoice_discount_pct > (

select avg(pre_invoice_discount_pct)

from fact_pre_invoice_deductions)

order by pre_invoice_discount_pct desc

limit 5 ;

Result Grid			
Filter Rows:		Export:	Wrap Cell Content:
customer_code	customer	pre_invoice_discount_pct	
90002009	Flipkart	0.3083	
90002006	Viveks	0.3038	
90002003	Ezone	0.3028	
90002002	90002002	0.3025	
90002016	90002016	0.2933	

Result 9 x

Q7 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 outputs, Month , Year, Gross sales Amount.

select

monthname(date) as Months, gp.fiscal_year as year, round(sum(gross_price * sold_quantity),2) as Gross_sales_amount from fact_sales_monthly s

join dim_customer c on s.customer_code = c.customer_code

join fact_gross_price gp on s.product_code = gp.product_code

where customer = "Atliq Exclusive"

group by 2,1

order by 3 desc;

Result Grid			
Filter Rows:		Export:	Wrap Cell Content:
Months	year	Gross_sales_amount	
November	2022	125827852.02	
November	2021	109213683.23	
December	2022	79455998.21	
October	2022	79441456.08	
September	2022	75674409.69	
November	2020	70459845.45	
December	2021	68502464.79	
October	2021	68107039.74	
September	2021	65176356.24	

Result 10 x

Q8 In which Quarter of 2020, got the maximum total_sold_quantity ?

Select

```
concat("Q",ceil(month(date_add(date, interval 4 month))/3)) as Quarter,  
sum(sold_quantity) as total_sold_qty
```

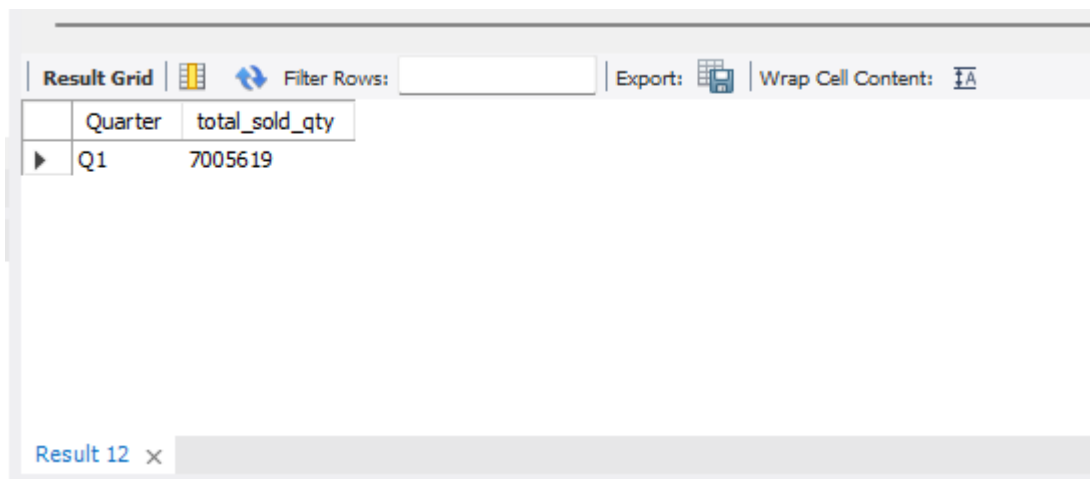
```
from fact_sales_monthly
```

```
where fiscal_year= "2020"
```

```
group by 1
```

```
order by total_sold_qty desc
```

```
limit 1;
```



The screenshot shows a BI tool interface with a toolbar at the top containing 'Result Grid', 'Filter Rows', 'Export', and 'Wrap Cell Content'. Below the toolbar is a table with two columns: 'Quarter' and 'total_sold_qty'. The first row of the table shows 'Q1' and '7005619'. At the bottom left, there is a tab labeled 'Result 12'.

Quarter	total_sold_qty
Q1	7005619

Q9 which channel helped to bring more gross sales in the year fiscal year 2021 and the percentage of contribution ? The output contains and these fields, channel, gross_sales_mln, percentage.

with sales as (

```
select c.channel, round((sum(gp.gross_price*s.sold_quantity)/1000000),2) as  
total_gross_sales
```

```
from fact_gross_price gp
```

```
join fact_sales_monthly s
```

```
on s.fiscal_year = gp.fiscal_year and s.product_code = gp.product_code
```

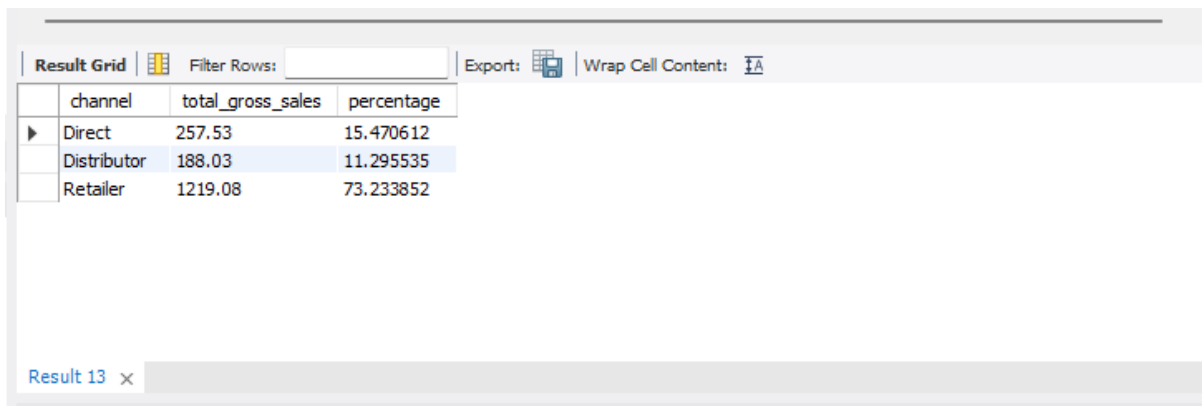
```
join dim_customer c
```

```
on c.customer_code = s.customer_codewhere s.fiscal_year = 2021
```

```
group by channel )
```

select

channel, total_gross_sales, (total_gross_sales *100 /sum(total_gross_sales) over())
as percentage from sales;



The screenshot shows a 'Result Grid' interface with a table of sales data. The table has four columns: 'channel', 'total_gross_sales', and 'percentage'. There are three rows of data: 'Direct', 'Distributor', and 'Retailer'. The 'percentage' column contains values calculated as a percentage of the total gross sales.

channel	total_gross_sales	percentage
Direct	257.53	15.470612
Distributor	188.03	11.295535
Retailer	1219.08	73.233852

Q10 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, total_sold_qty, rank_order

with top_products as (

select division, p.product_code, product, sum(sold_quantity) as total_sold_qty

from dim_product p

join fact_sales_monthly s on p.product_code = s.product_code

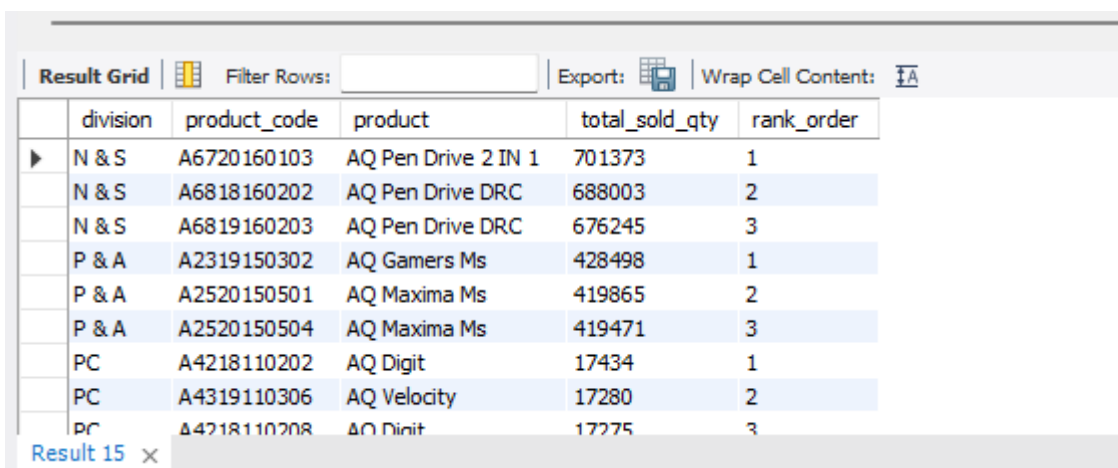
where s.fiscal_year = 2021

group by 1,2,3),

all_rank as (

select *, dense_rank() over(partition by division order by total_sold_qty desc) as rank_order
from top_products)

select * from all_rank where rank_order < 4



The screenshot shows a 'Result Grid' interface with a table of top products. The table has six columns: 'division', 'product_code', 'product', 'total_sold_qty', and 'rank_order'. There are ten rows of data, showing the top 3 products for each of the three divisions (N & S, P & A, PC). The 'rank_order' column indicates the ranking of products within each division based on total sold quantity.

division	product_code	product	total_sold_qty	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 Dinit	17275	3