Consumer Goods Ad_Hoc Insights

CODE BASICS

Problem Statement

- **AtliQ Hardwares**, a leading computer hardware producer in India, has expanded into other countries.
- Management recognizes the need for better insights to make quick data-driven decisions.
- They plan to hire several junior data analysts to strengthen their data analytics team.
- Tony Sharma, the director of data analytics, aims to find candidates with strong technical and soft skills through a SQL challenge.

Company Overview

- AtliQ Hardware is a leading manufacturer in the computer hardware industry.

- AtliQ offers products in 3 main divisions:

1. **Networking and Storage(N & S)**
2. **Personal Computer(PC)**
3. **Peripherals & Accessories(P&A)**

AtliQ Hardware operates internationally in:

Tools used here

- For visualization - Power bi

- For Ad-Hoc Query - My SQL

Ad-Hoc Requests

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

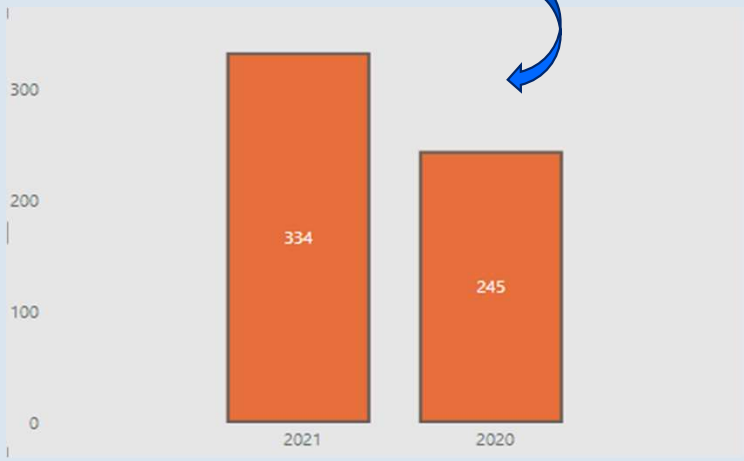
```
select distinct market from
dim_customer
where region = "APAC“
and customer ="Atliq Exclusive“
order by market;
```

market
Australia
Bangladesh
India
Indonesia
Japan
Newzealand
Philiphines
South Korea

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

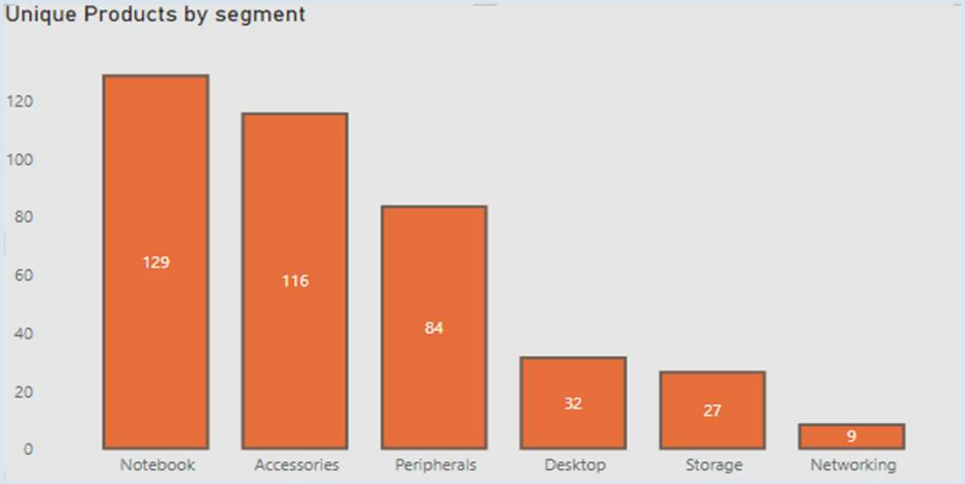
```
With
unique_prod_20 as(
select
count(distinct product_code) as unique_product_2020
from fact_sales_monthly
where fiscal_year= 2020
),
unique_prod_21 as(
select count(distinct product_code) as unique_product_2021
from fact_sales_monthly
where fiscal_year= 2021
)
select
a.unique_product_2020,        b.unique_product_2021,
round((b.unique_product_2021-
a.unique_product_2020)*100/a.unique_product_2020,2) as
percentage_chg
from      unique_prod_20 a,
unique_prod_21 b;
```

unique_product_2020	unique_product_2021	percentage_chg
245	334	36.33



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

```
select
 segment,
count(distinct product_code) as product_count
from       dim_product
group by segment
order by  product_count DESC;
```



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

```
with
prod_count_20 as(
select     p.segment,
count(distinct s.product_code) as product_count_2020
from fact_sales_monthly s
join dim_product p
on s.product_code = p.product_code
where s.fiscal_year = 2020
group by p.segment
),
prod_count_21 as(
select     p.segment,
count(distinct s.product_code) as product_count_2021
from fact_sales_monthly s
join dim_product p on s.product_code = p.product_code
where s.fiscal_year = 2021
group by p.segment
)
select
a.segment,      a.product_count_2020,      b.product_count_2021,
(b.product_count_2021-a.product_count_2020) as difference
from    prod_count_20 a
join prod_count_21 b
on a.segment = b.segment
order by  difference desc;
```

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

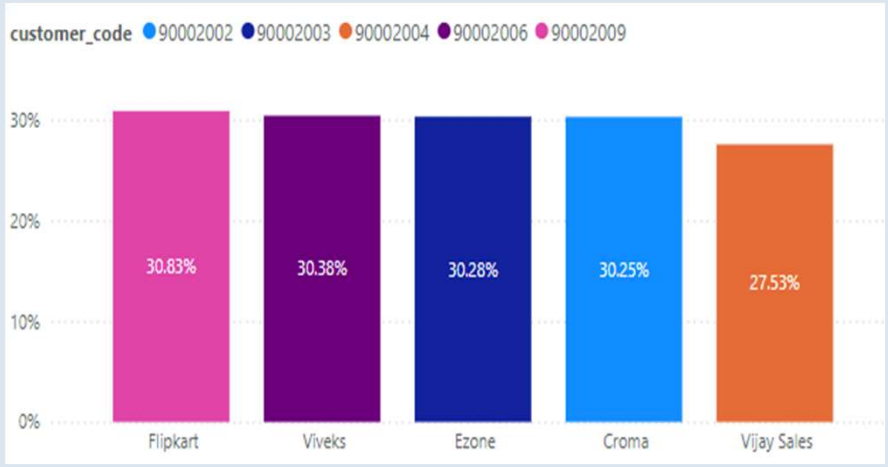
5. Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields: product_code, product manufacturing_cost

```
select
p.product_code,      p.product,
m.manufacturing_cost
from fact_manufacturing_cost m
join dim_product p
on m.product_code = p.product_code
where m.manufacturing_cost in(
                        select max(manufacturing_cost)
from fact_manufacturing_cost
union
                        select min(manufacturing_cost)
from fact_manufacturing_cost
)
order by m.manufacturing_cost desc;
```

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

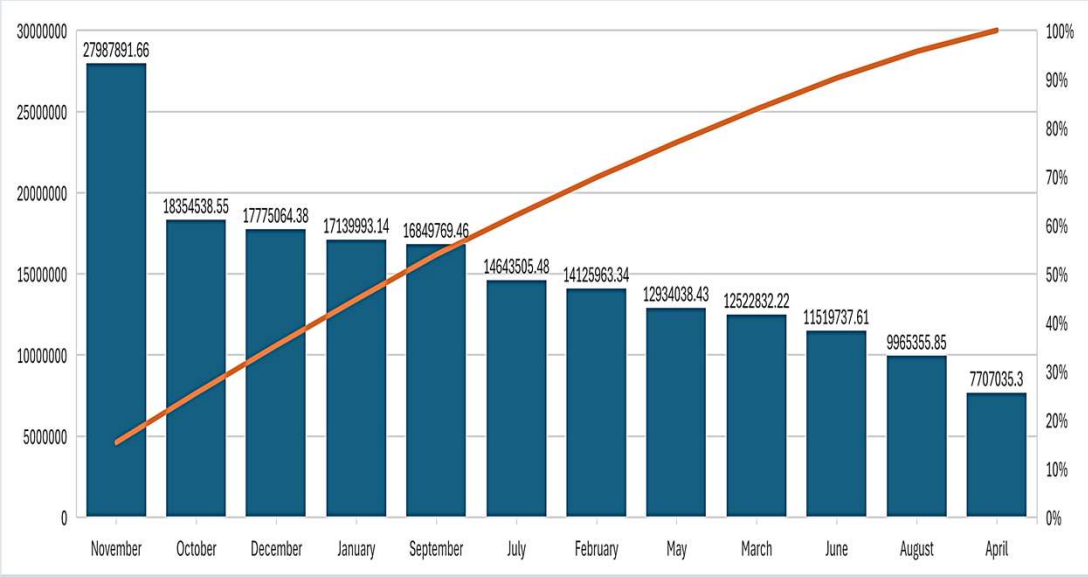
6. Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields: customer_code, customer, and average_discount_percentage

```
select
c.customer_code,
c.customer,      avg(p.pre_invoice_discount_pct) as
average_discount_percentage
from fact_pre_invoice_deductions p
join dim_customer c
on p.customer_code = c.customer_code
where c.market ="India" and
fiscal_year = 2021
group by c.customer
order by p.pre_invoice_discount_pct desc
limit 5;
```



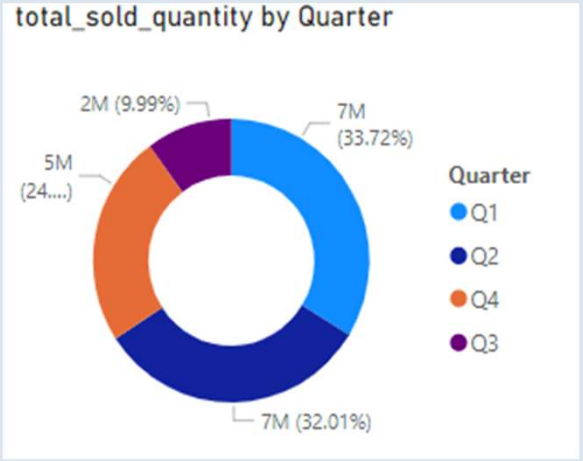
7. Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month. This analysis helps to get an idea of low and high-performing months and take strategic decisions. The final report contains these columns:
Month, Year, Gross sales Amount

```
select
monthname(s.date) as month,
s.fiscal_year as fiscal_year,
round(sum(s.sold_quantity*g.gross_price),2) as gross_sales_amount
from fact_sales_monthly s
join fact_gross_price g
on s.product_code=g.product_code
and s.fiscal_year=g.fiscal_year
join dim_customer c on s.customer_code=c.customer_code
where      c.customer = "Atliq Exclusive“
group by month, fiscal_year
order by fiscal_year;
```



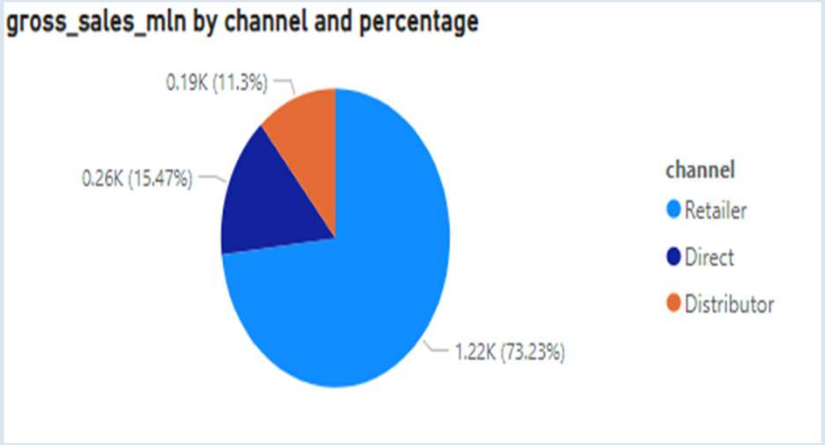
8. In which quarter of 2020, got the maximum total_sold_quantity? The final output contains these fields sorted by the total_sold_quantity, Quarter.

```
select
        case
            when month(date) in (9,10,11) then 'Q1'
            when month(date) in (12,1,2) then 'Q2'
            when month(date) in (3,4,5) then 'Q3'
            when month(date) in (6,7,8) then 'Q4
        end as Quarter,
        sum(sold_quantity) as  total_sold_quantity
from fact_sales_monthly
where fiscal_year= 2020
group by
         case
            when month(date) in (9,10,11) then 'Q1'
            when month(date) in (12,1,2) then 'Q2'
            when month(date) in (3,4,5) then 'Q3'
            when month(date) in (6,7,8) then 'Q4
         end
 order by total_sold_quantity desc;
```



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

```
with
channel_sales_21 as(
select              c.channel,
round(sum(s.sold_quantity*g.gross_price/1000000),2) as gross_sales_mln
from fact_sales_monthly s
join dim_customer c
on s.customer_code = c.customer_code
join fact_gross_price g
on g.product_code=s.product_code
and g.fiscal_year=s.fiscal_year
where s.fiscal_year = 2021
group by c.channel
order by gross_sales_mln desc
),
total_sales_2021 as(
select     sum(gross_sales_mln) as total_gross_sales_mln
from   channel_sales_21
)
select     cs.channel,     cs.gross_sales_mln,
round(cs.gross_sales_mln*100/ts.total_gross_sales_mln,2) as percentage
from
channel_sales_21 cs,
total_sales_2021 ts;
```



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

```
With
    Product_Rank as(
select p.division,      p.product_code,
        p.product,      sum(s.sold_quantity) as
        total_sold_quantity,
        dense_rank() over(partition by division
        order by sum(s.sold_quantity)desc) as
        rank_order
from    fact_sales_monthly s
join dim_product p using (product_code)
where s.fiscal_year = 2021
group by p.division, p.product_code
)
select division,      product_code,      total_sold_quantity
from    Product_Rank
where rank_order<=3;
```