Ad-hoc Requests and its solutions :

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

```
SELECT distinct market from gdb023.dim_customer
where customer = "Atliq Exclusive" and
 region = "APAC";
```

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 cte1 AS
(
   SELECT COUNT(DISTINCT product_code) AS unique_products
   FROM fact_sales_monthly
   WHERE fiscal_year = 2020
),
cte2 AS
(
   SELECT COUNT(DISTINCT product_code) AS unique_products
   FROM fact_sales_monthly
   WHERE fiscal_year = 2021
)
SELECT
   cte1.unique_products AS unique_products_2020,
   cte2.unique_products AS unique_products_2021,
   CASE
      WHEN cte1.unique_products = 0 THEN NULL
      ELSE ROUND(
         ((cte2.unique_products - cte1.unique_products) * 100.0 / cte1.unique_products),
         2
      )
   END AS pct_change FROM cte1, cte2;
```

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. 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

```
with cte as (select
p.segment,
count(distinct case when s.fiscal_year = 2020 then s.product_code end) as product_count_2020,
count(distinct case when s.fiscal_year = 2021 then s.product_code end) as product_count_2021
from fact_sales_monthly s
join dim_product p
on s.product_code = p.product_code
group by p.segment)
select   *,  product_count_2021-product_count_2020 as difference  from cte;
```

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

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

```
Select d.customer_code, c.customer,
round(avg(d.pre_invoice_discount_pct),4) as average_discount_percentage
from dim_customer c
join fact_pre_invoice_deductions d
on c.customer_code = d.customer_code
where d.fiscal_year = 2021 and c.market = "india"
group by d.customer_code,c.customer
order by average_discount_percentage 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,
   ROUND(SUM(s.sold_quantity * g.gross_price), 2) AS gross_sales_amount
FROM
   fact_sales_monthly s
JOIN
   fact_gross_price g ON g.fiscal_year = s.fiscal_year
JOIN
   dim_customer c ON c.customer_code = s.customer_code
WHERE
   c.customer = 'Atliq Exclusive'
GROUP BY
   month, s.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 ,total_sold_quantity

```
with cte as (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 quarter)
select * from cte
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

```
WITH cte1 as
(
select  c.channel,
round(sum(gross_price*sold_quantity/1000000),2) as gross_sales_mln
from fact_sales_monthly f join dim_customer c
on f.customer_code= c.customer_code
join fact_gross_price g
on f.product_code=g.product_code
where f.fiscal_year=2021 group by c.channel
)
select channel, CONCAT(gross_sales_mln,' M') as Gross_sales_mln ,
CONCAT(ROUND(gross_sales_mln*100/total , 2), ' %') AS percentage
from
(
(select SUM(Gross_sales_mln) as total from cte1) A,
(select * from cte1) B
)
order by percentage desc
```

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_codepercentage,producttotal_sold_quantity,rank_order

```
WITH cte AS (
   SELECT
      p.division,
      p.product_code,
      p.product,
      SUM(s.sold_quantity) AS total_sold_quantity,
      RANK() OVER (PARTITION BY p.division ORDER BY SUM(s.sold_quantity) DESC) AS rank_order
  FROM fact_sales_monthly s
   JOIN dim_product p ON p.product_code = s.product_code
   WHERE s.fiscal_year = 2021
   GROUP BY p.division, p.  product_code, p.product
)
SELECT *
FROM cte
WHERE rank_order IN (1, 2, 3)
ORDER BY division, rank_order;
```