DATA-DRIVEN DECISION-MAKING: AD-HOC INSIGHTS AT ATLIQ HARDWARES

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Objectives of the Project:

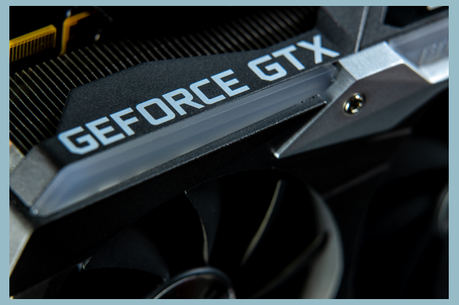
1. Enhance Decision-Making: Improve the quality and speed of decision-making processes within Atliq Hardwares by leveraging data insights.
2. Expand Data Analytics Team: Grow the data analytics team by hiring skilled junior data analysts to support data-driven initiatives and enhance organizational capabilities.
3. Identify Top Talent: Identify candidates with strong technical and soft skills through the SQL challenge, ensuring alignment with the company's requirements and culture.
4. Drive Business Growth: Utilize data analytics to identify opportunities for business growth, market expansion, and operational efficiency improvements across various markets and product lines.
5. Improve Competitiveness: Enhance Atliq Hardwares competitive edge by leveraging data-driven insights to stay ahead of market trends, customer preferences, and industry developments.

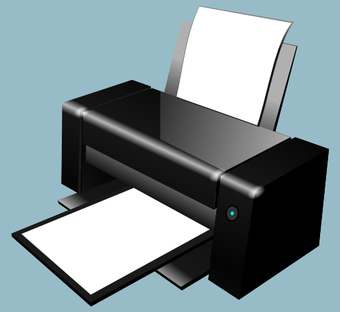
Company Details:

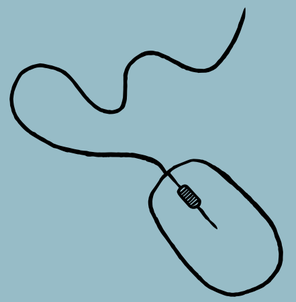
Name: Atliq Hardwares

Industry: Computer Hardware Manufacturing

Location: India (headquarters), Expanded Operations in Multiple Countries







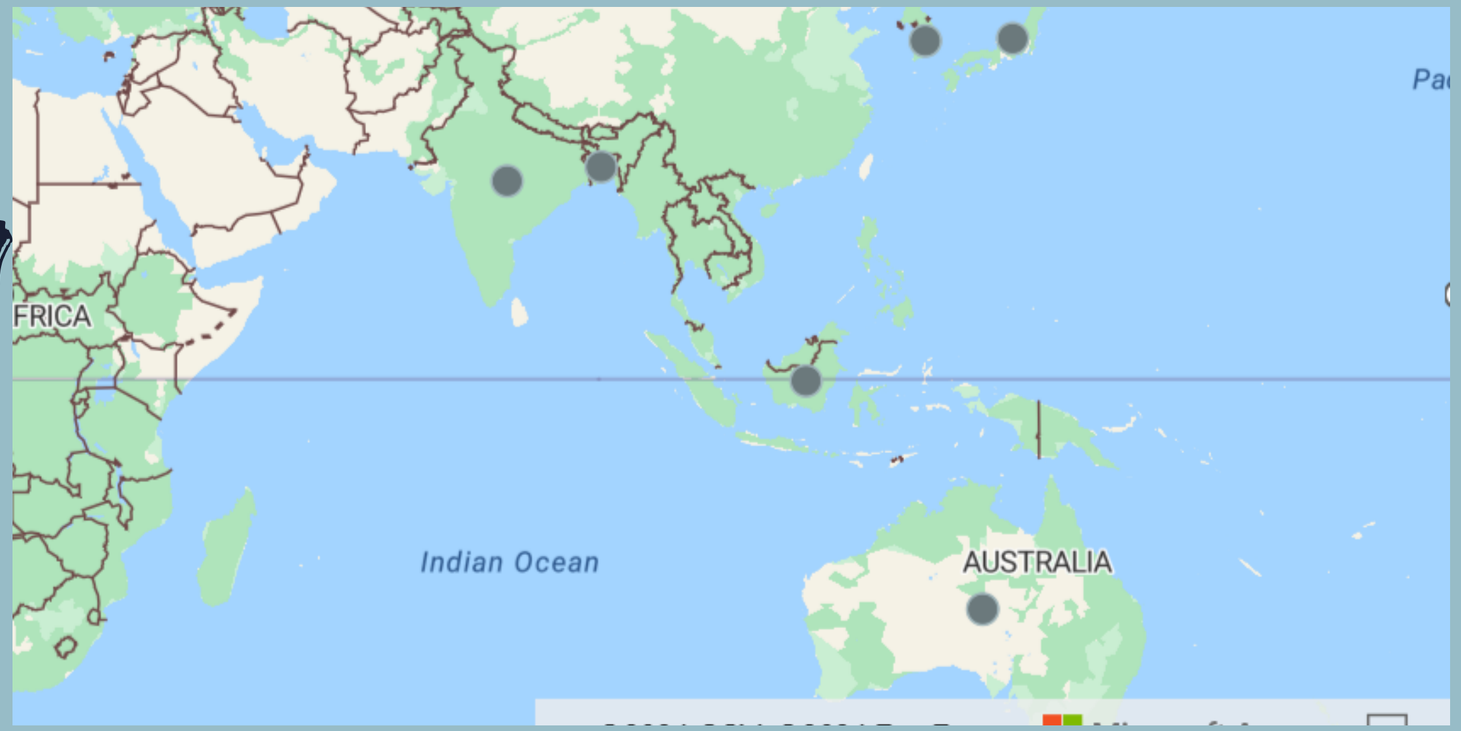
Market for "Atliq Exclusive" in APAC Region:

- SQL Query: Identify all markets where the customer "Atliq Exclusive" operates within the APAC region.

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

- Insight: Understanding the geographical presence of a key customer in the APAC region can help in targeted marketing and sales strategies.

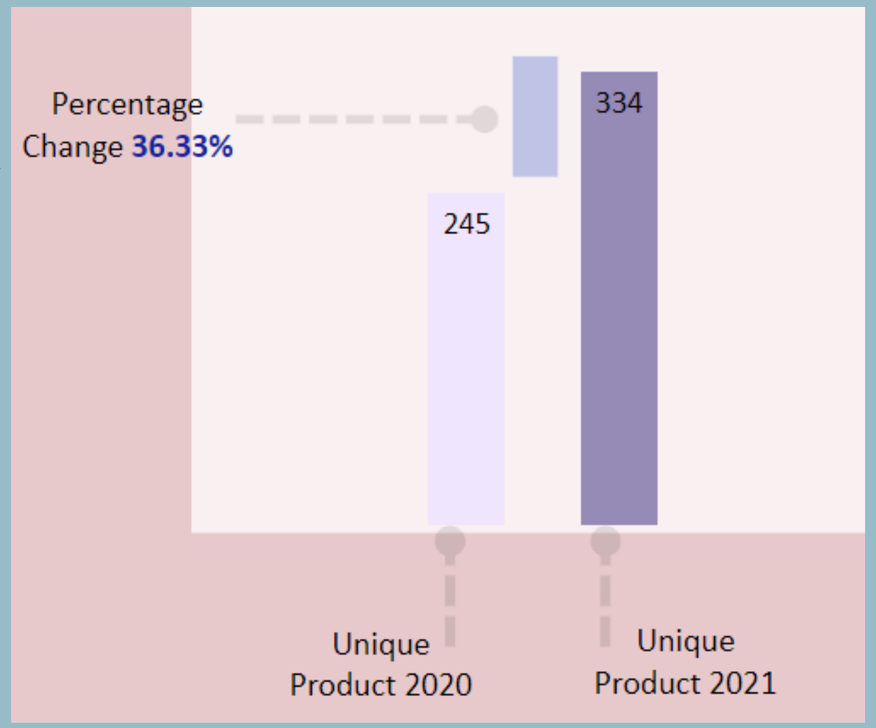
market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh



Percentage Increase in Unique Products from 2020 to 2021:

- SQL Query: Calculate the percentage increase in the number of unique products between 2020 and 2021.
- Insight: This insight provides an overview of product expansion or diversification over the years, indicating the company's growth trajectory.

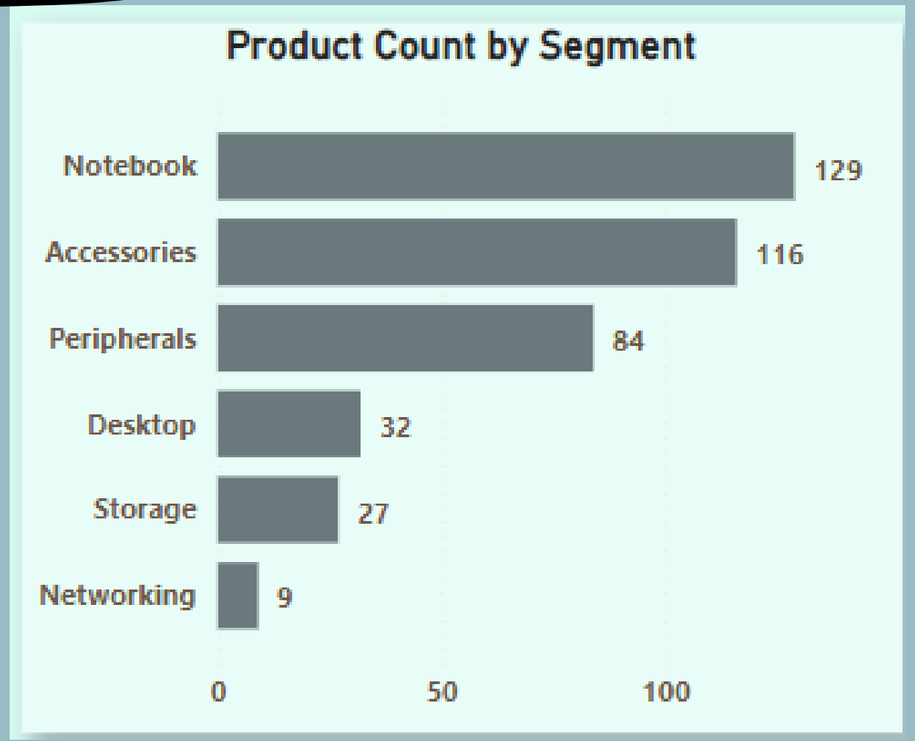
```sql
with cte1 as
(
select count(distinct product_code) as unique_products_2020
from fact_sales_monthly
where fiscal_year=2020
) ,
cte2 as
(
select count(distinct product_code) as unique_products_2021
from fact_sales_monthly
where fiscal_year=2021
)
select *,
       round(((unique_products_2021 - unique_products_2020)*100)/unique_products_2020,2) as percentage_chg
       from cte1
       cross join cte2;
```



Unique Product Counts by Segment:

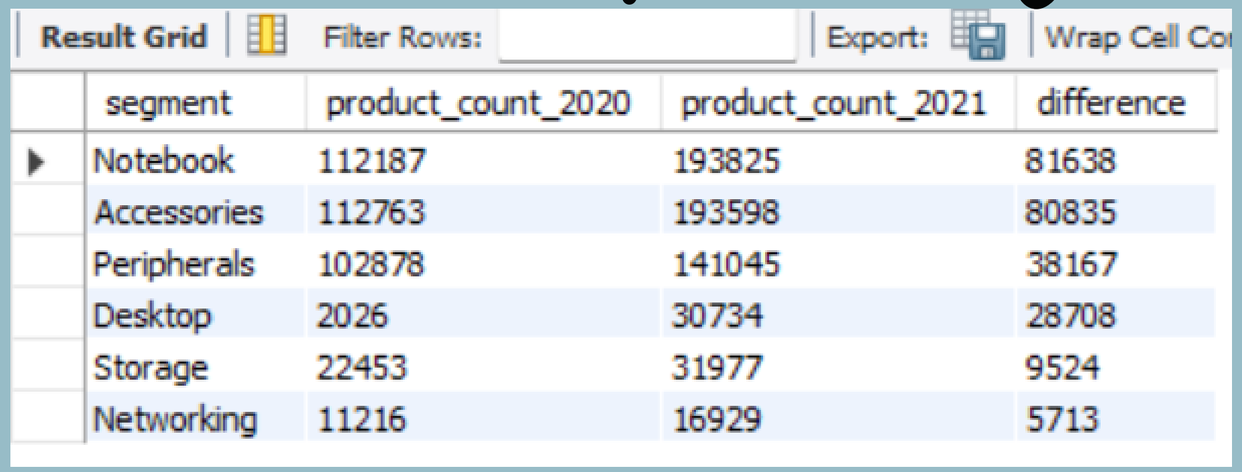
- SQL Query: Count the unique products for each segment and sort them in descending order.
- Insight: Understanding which segments have the most diverse product offerings can guide resource allocation and market prioritization.

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



Segment with the Most Increase in Unique Products (2021 vs. 2020):

- SQL Query: Compare the unique product counts for each segment between 2020 and 2021 to identify the segment with the highest increase.
- Insight: Identifying segments experiencing significant product growth helps focus marketing efforts and capitalize on emerging trends.



Result Grid | Filter Rows: | Export: | Wrap Cell Co

segment	product_count_2020	product_count_2021	difference
Notebook	112187	193825	81638
Accessories	112763	193598	80835
Peripherals	102878	141045	38167
Desktop	2026	30734	28708
Storage	22453	31977	9524
Networking	11216	16929	5713

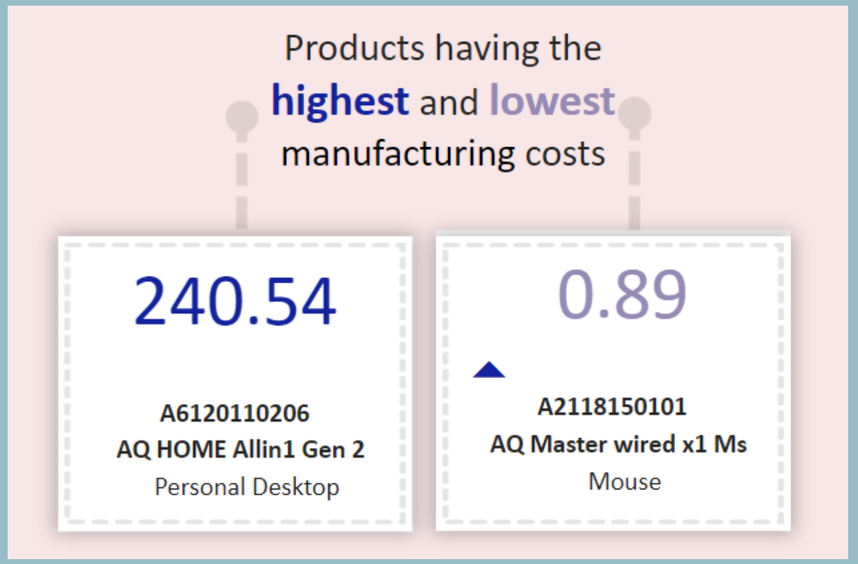
Segment	Product Count 2020	Product Count 2021	Difference
Accessories	69	103	34
Notebook	92	108	16
Peripherals	59	75	16
Desktop	7	22	15
Storage	12	17	5
Networking	6	9	3

Products with the Highest and Lowest Manufacturing Costs:

- SQL Query: Retrieve products with the highest and lowest manufacturing costs.
- Insight: Understanding cost variations across products informs pricing strategies and profitability analysis.

```sql
SELECT p.product_code,p.product, m.manufacturing_cost
FROM dim_product p join fact_manufacturing_cost m on p.product_code=m.product_code
WHERE manufacturing_cost = (SELECT MAX(manufacturing_cost) FROM fact_manufacturing_cost)
   OR manufacturing_cost = (SELECT MIN(manufacturing_cost) FROM fact_manufacturing_cost)
   order by manufacturing_cost desc;
```

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

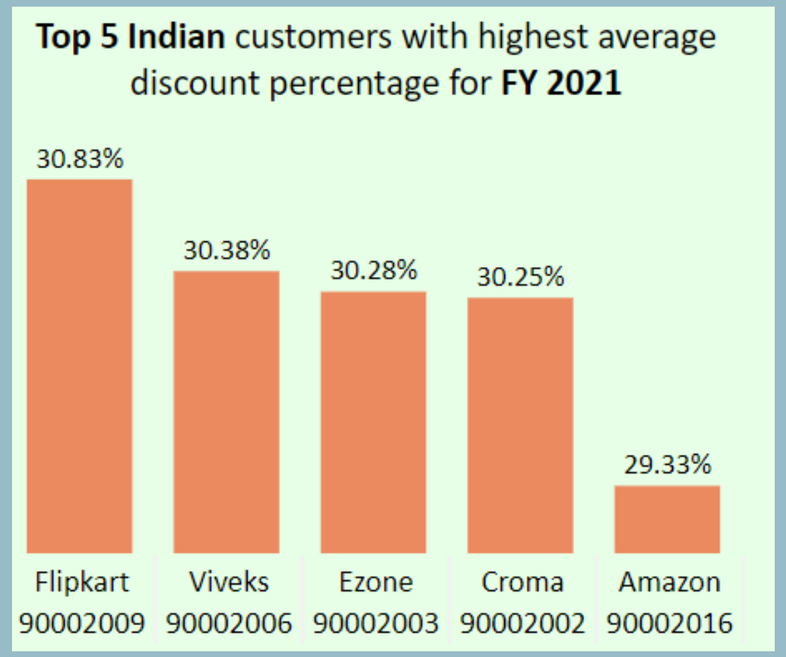


Top 5 Customers with High Average Pre-Invoice Discount Percentage (Fiscal Year 2021, Indian Market):

- SQL Query: Identify the top 5 customers with the highest average pre-invoice discount percentage in the fiscal year 2021 within the Indian market.
- Insight: Recognizing customers with high discount rates provides insights into pricing strategies and customer loyalty.

```sql
WITH cte1 AS
(SELECT customer_code AS A, AVG(pre_invoice_discount_pct) AS B FROM fact_pre_invoice_deductions
WHERE fiscal_year = '2021'
GROUP BY customer_code),
     cte2 AS
(SELECT customer_code AS C, customer AS D FROM dim_customer
WHERE market = 'India')

SELECT cte2.C AS customer_code, cte2.D AS customer, ROUND (cte1.B, 4) AS average_discount_percentage
FROM cte1 JOIN cte2
ON cte1.A = cte2.C
ORDER BY average_discount_percentage DESC
LIMIT 5  ;
```



Monthly Gross Sales Amount for "Atliq Exclusive":

- SQL Query: Calculate the gross sales amount for the customer "Atliq Exclusive" for each month.
- Insight: Monitoring monthly sales performance helps identify seasonal trends and optimize inventory management.

```sql
SELECT CONCAT(MONTHNAME(s.date), ' (', YEAR(s.date), ')') AS 'Month', s.fiscal_year,
       ROUND(SUM(g.gross_price*s.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 g ON s.product_code = g.product_code
WHERE c.customer = 'Atliq Exclusive'
GROUP BY  Month, s.fiscal_year
ORDER BY s.fiscal_year ;
```

fiscal_year	Gross_sales_Amount
⊟ 2021	224.42M
November (2020)	32.25M
October (2020)	21.02M
December (2020)	20.41M
January (2021)	19.57M
September (2020)	19.53M
May (2021)	19.20M
March (2021)	19.15M
July (2021)	19.04M
February (2021)	15.99M
June (2021)	15.46M
April (2021)	11.48M
August (2021)	11.32M
⊟ 2020	79.50M
November (2019)	15.23M
October (2019)	10.38M
December (2019)	9.76M
January (2020)	9.58M
September (2019)	9.09M
February (2020)	8.08M
August (2020)	5.64M
July (2020)	5.15M
June (2020)	3.43M
May (2020)	1.59M
April (2020)	0.80M
March (2020)	0.77M
Total	303.93M

Quarter with Maximum Total Sold Quantity in 2020:

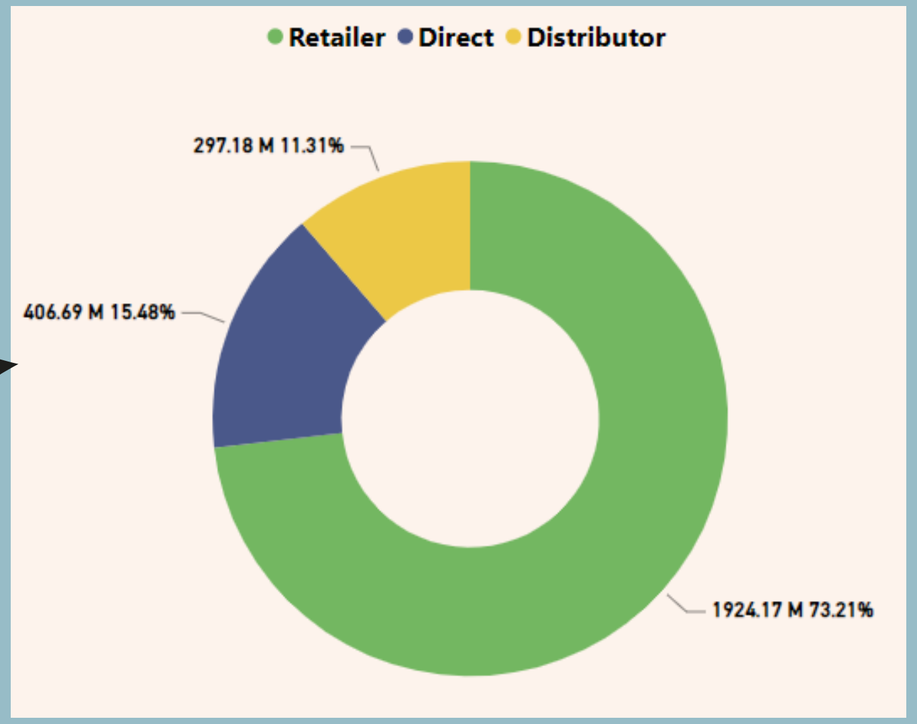
- SQL Query: Determine the quarter in 2020 with the highest total sold quantity.
- Insight: Understanding sales patterns by quarter informs resource allocation and production planning.

```sql
SELECT
CASE
    WHEN date BETWEEN '2019-09-01' AND '2019-11-01' then 1
    WHEN date BETWEEN '2019-12-01' AND '2020-02-01' then 2
    WHEN date BETWEEN '2020-03-01' AND '2020-05-01' then 3
    WHEN date BETWEEN '2020-06-01' AND '2020-08-01' then 4
    END AS Quarters,
    SUM(sold_quantity) AS total_sold_quantity
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY Quarters
ORDER BY total_sold_quantity DESC;
```

Channel Contribution to Gross Sales in Fiscal Year 2021:

- SQL Query: Analyze which sales channels contributed the most to gross sales in fiscal year 2021 and calculate their percentage contribution.
- Insight: Identifying high-performing sales channels guides investment decisions and resource allocation for marketing and distribution.

```sql
WITH Output AS
(
SELECT c.channel,
       ROUND(SUM(g.gross_price*s.sold_quantity/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 s.product_code = g.product_code
WHERE s.fiscal_year = 2021
GROUP BY 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 Output) A,
(SELECT * FROM Output) B
)
ORDER BY percentage DESC
```



Top 3 Products with High Total Sold Quantity in Each Division (Fiscal Year 2021):

- SQL Query: Rank products by total sold quantity within each division and select the top 3.
- Insight: Recognizing top-selling products in each division facilitates inventory management and informs marketing strategies.

```sql
WITH Output1 AS
(
SELECT p.division, s.product_code, p.product, SUM(s.sold_quantity) AS Total_sold_quantity
FROM dim_product p JOIN fact_sales_monthly s
ON p.product_code = s.product_code
WHERE s.fiscal_year = 2021
GROUP BY  s.product_code, division, p.product
),
Output2 AS
(
SELECT division, product_code, product, Total_sold_quantity,
       RANK() OVER(PARTITION BY division ORDER BY Total_sold_quantity DESC) AS 'Rank_Order'
FROM Output1
)
 SELECT Output1.division, Output1.product_code, Output1.product, Output2.Total_sold_quantity, Output2.Rank_Order
 FROM Output1 JOIN Output2
 ON Output1.product_code = Output2.product_code
WHERE Output2.Rank_Order IN (1,2,3)
```

division	product_code	product	Total_sold_quantity	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 Digit	17275	3

Thank You

Codebasics & AtliQ