AtliQ Hardware

Consumer Goods Ad-Hoc Insights

Agenda

E R Diagram

Ad-Hoc Insights (10 queries)

By: Mayur Mehta

Agenda :

About Company:

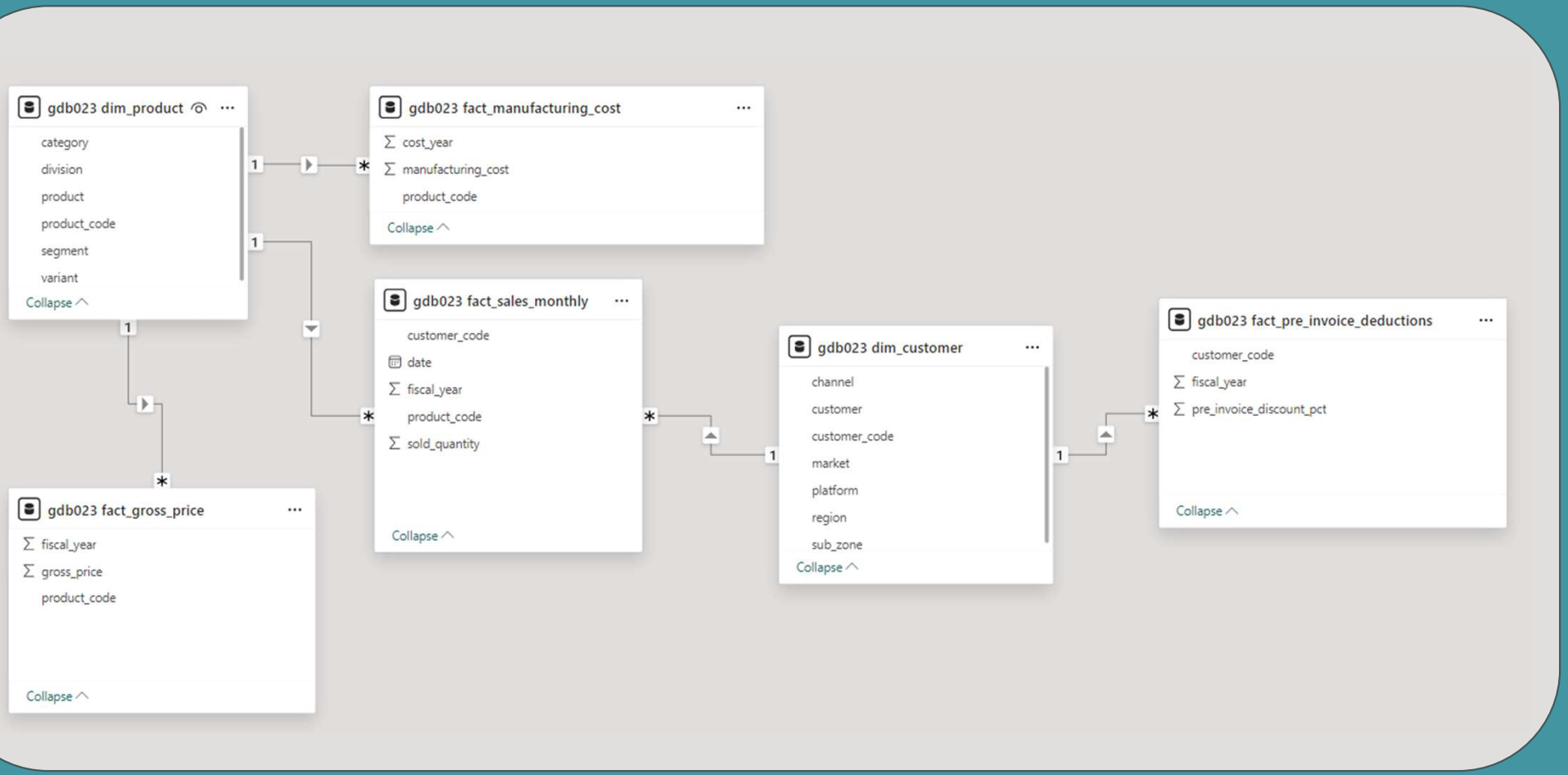
Atliq Hardware (imaginary company) is one of the leading computer hardware producers in India and well expanded in other countries too.

Problem statement:

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. There are 10 ad-hoc requests for which the business needs insights.
2. Task is to write SQL queries to answer these requests.
3. Create presentation to show insights to Top-Level Management.

E R Diagram :


gdb023 dim_product
category
division
product
product_code
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gdb023 fact_manufacturing_cost
cost_year
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gdb023 fact_sales_monthly
customer_code
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product_code
sold_quantity
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gdb023 dim_customer
channel
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customer_code
market
platform
region
sub_zone
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gdb023 fact_pre_invoice_deductions
customer_code
fiscal_year
pre_invoice_discount_pct
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gdb023 fact_gross_price
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gross_price
product_code
Collapse
1
*

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';
```

Result Grid | Filter Rows: | Export:

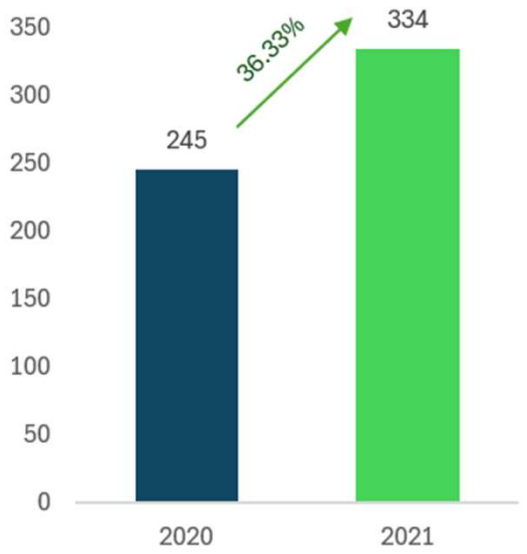
MARKET
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

2.What is the percentage of unique product increase in 2021 vs. 2020?

```
WITH T2020
AS
(SELECT COUNT(distinct(PRODUCT_CODE)) AS CNT_2020 FROM FACT_SALES_MONTHLY
    WHERE FISCAL_YEAR = '2020'),
T2021
AS
(SELECT COUNT(distinct(PRODUCT_CODE)) AS CNT_2021 FROM FACT_SALES_MONTHLY
    WHERE FISCAL_YEAR = '2021')
SELECT T2020.CNT_2020 AS unique_products_2020 , T2021.CNT_2021 AS unique_products_2021,
ROUND((((T2021.CNT_2021 - T2020.CNT_2020) / T2020.CNT_2020)*100),2) AS "percentage_chg"
    FROM T2020,T2021;
```

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

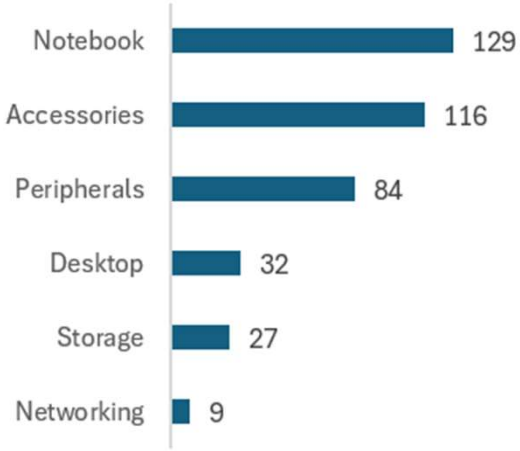
unique_products_2020	unique_products_2021	percentage_chg
245	334	36.33



- Around 89 unique products were produced in Year - 2021

3.Provide a report with all the unique product counts for each segment and sort them descending order of product counts.

```
SELECT SEGMENT ,COUNT(PRODUCT_CODE) AS CNT FROM DIM_PRODUCT
GROUP BY SEGMENT
ORDER BY COUNT(PRODUCT_CODE) DESC;
```



Result Grid | Filter Rows:

SEGMENT	CNT
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9

- Notebook segment recorded 129 unique products followed By Accessories

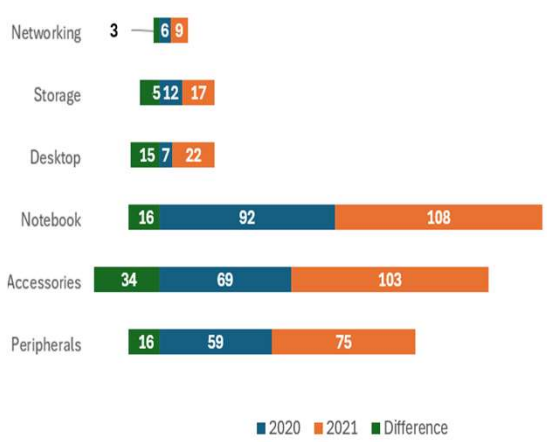
- Storage & Networking Recorded least product count.

4.Follow-up: Which segment had the most increase in unique products in 2021 vs 2020?

```sql
SELECT A.SEGMENT AS segment,
MAX(CASE WHEN A.FISCAL_YEAR =2020 THEN A.CONT END) AS product_count_2020 ,
MAX(CASE WHEN A.FISCAL_YEAR = 2021 THEN A.CONT END) AS product_count_2021,
(
MAX(CASE WHEN A.FISCAL_YEAR = 2021 THEN A.CONT END)
-
MAX(CASE WHEN A.FISCAL_YEAR =2020 THEN A.CONT END)
) AS difference
FROM
(
SELECT SEGMENT , P.FISCAL_YEAR, COUNT(DIM_PRODUCT.PRODUCT_CODE) AS CONT FROM DIM_PRODUCT,
FACT_GROSS_PRICE P
WHERE DIM_PRODUCT.PRODUCT_CODE = P.PRODUCT_CODE
AND P.FISCAL_YEAR IN (2020,2021)
GROUP BY SEGMENT,P.FISCAL_YEAR
) A
GROUP BY A.SEGMENT;
```

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

segment	product_count_2020	product_count_2021	difference
Peripherals	59	75	16
Accessories	69	103	34
Notebook	92	108	16
Desktop	7	22	15
Storage	12	17	5
Networking	6	9	3



- Accessories segment found most increase unique codes with difference of 34 in Year 2020 vs 2021

5.Get the products that have the highest and lowest manufacturing costs.

```
SELECT A.product_code, D.product, A.manufacturing_cost FROM
fact_manufacturing_cost A join dim_product D
ON A.PRODUCT_CODE = D.PRODUCT_CODE WHERE manufacturing_cost
IN
(
SELECT MAX(manufacturing_cost) AS manufacturing_cost FROM FACT_MANUFACTURING_COST
union
SELECT Min(manufacturing_cost) AS manufacturing_cost FROM FACT_MANUFACTURING_COST
);
```

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

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

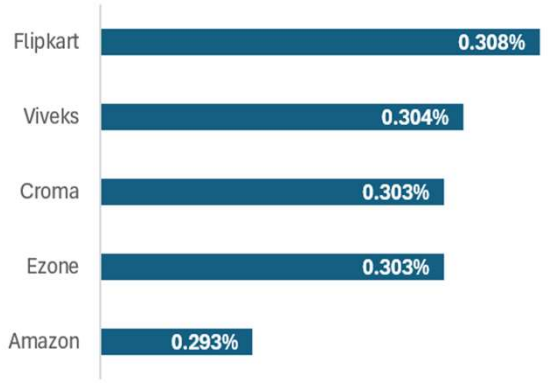
AQ HOME Allin1 Gen 2

AQ Master wired x1 Ms

- Personal desktop has highest manufacturing cost of $240.54
- Mouse has lowest manufacturing cost of $0.89

6.Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for FY2021 and in the Indian market.

```sql
SELECT D.customer_code, D.customer,
concat(ROUND(AVG(A.pre_invoice_discount_pct),3),'%') AS average_discount_percentage
FROM fact_pre_invoice_deductions A JOIN DIM_CUSTOMER D
ON A.customer_code= D.customer_code
WHERE D.MARKET ='INDIA' AND A.FISCAL_YEAR=2021
GROUP BY A.customer_code
ORDER BY AVG(A.pre_invoice_discount_pct) DESC
LIMIT 5;
```



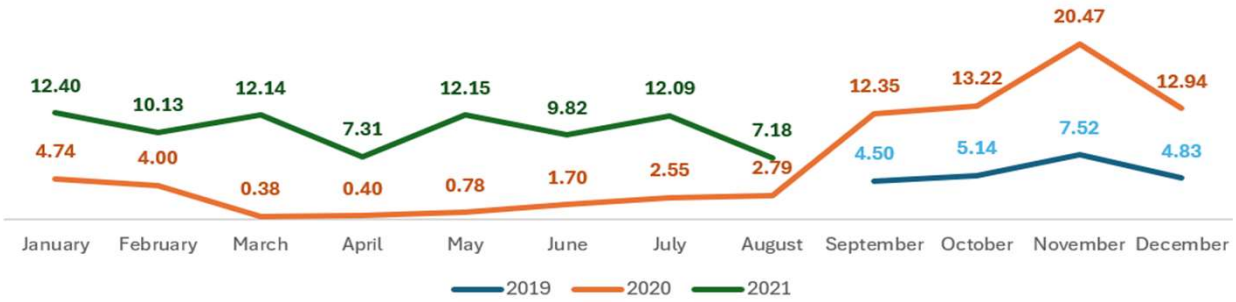
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customer_code	customer	average_discount_percentage
90002009	Flipkart	0.308%
90002006	Viveks	0.304%
90002003	Ezone	0.303%
90002002	Croma	0.303%
90002016	Amazon	0.293%

- Flipkart recorded highest average pre-invoice discount percentage followed by Viveks, Croma, Ezone, Amazon.

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.

```
SELECT MONTHNAME(SALES.DATE) AS MONTH, YEAR(SALES.DATE) AS YEAR,
CONCAT(ROUND((SUM(PRD.gross_price * SALES.sold_quantity)/1000000),4), ' m') AS "Gross sales Amount"
FROM fact_sales_monthly SALES JOIN fact_gross_price PRD
ON SALES.fiscal_year=PRD.fiscal_year
JOIN DIM_CUSTOMER CUST
ON SALES.CUSTOMER_CODE = CUST.CUSTOMER_CODE
AND SALES.product_code=PRD.product_code
WHERE
CUST.CUSTOMER ='Atliq Exclusive'
GROUP BY
MONTH(SALES.DATE), YEAR(SALES.DATE)
ORDER BY MONTH(SALES.DATE) ASC;
```



- Company has recorded highest gross sales in the month of November’20 that is 20.47 M

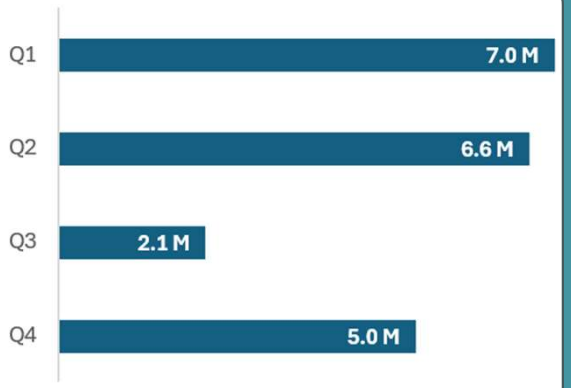
MONTH	YEAR	Gross sales Amount
January	2020	4.7406 m
January	2021	12.3994 m
February	2020	3.9962 m
February	2021	10.1297 m
March	2020	0.3788 m
March	2021	12.1441 m
April	2020	0.3950 m
April	2021	7.3120 m
May	2020	0.7838 m
May	2021	12.1502 m
June	2020	1.6952 m
June	2021	9.8245 m
July	2020	2.5512 m
July	2021	12.0923 m
August	2020	2.7866 m
August	2021	7.1787 m
September	2019	4.4963 m
September	2020	12.3535 m
October	2019	5.1359 m
October	2020	13.2186 m
November	2019	7.5229 m
November	2020	20.4650 m
December	2019	4.8304 m
December	2020	12.9447 m

8.In which quarter of 2020, got the maximum total_sold_quantity?

```sql
SELECT a.quarter, sum(a.total_sold_quantity) as total_sold_quantity from
(
SELECT
CASE
WHEN S.DATE >= '2019-01-01' AND S.DATE <= '2019-11-30' THEN 'Q1'
WHEN S.DATE >= '2019-12-01' AND S.DATE <= '2020-02-29' THEN 'Q2'
WHEN S.DATE >= '2020-03-01' AND S.DATE <= '2020-05-30' THEN 'Q3'
WHEN S.DATE >= '2019-06-01' AND S.DATE <= '2020-08-31' THEN 'Q4'
END AS Quarter, SUM(S.sold_quantity) AS total_sold_quantity FROM
fact_sales_monthly S  WHERE
S.fiscal_year='2020'
GROUP BY S.DATE
) as a
group by a.quarter;
```

Result Grid | Filter Rows: | Export:

quarter	total_sold_quantity
Q1	7005619
Q2	6649642
Q3	2075087
Q4	5042541



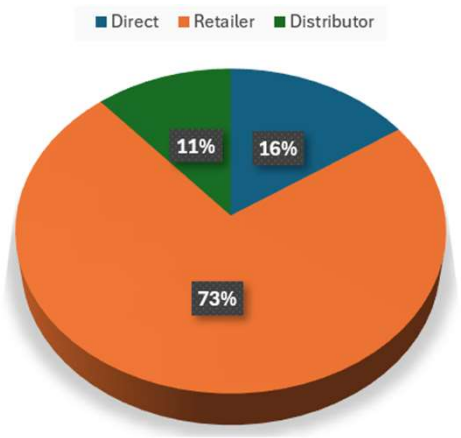
- In Quarter 1, recorded highest total sold Quantity 7.0 M
- In Quarter 3, recorded Lowest total sold Quantity 2.1 M due to covid-19 crisis

9.Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution?

```sql
SELECT A.CHANNEL AS channel, A.GROSS_SALES_MLN AS gross_sales_mln,
concat(ROUND(((ROUND(A.GROSS_SALES_MLN,0) / ROUND(B.sales,0))*100),2), '%') AS percentage
FROM
(SELECT C.CHANNEL AS channel, ROUND((SUM(S.sold_quantity * P.gross_price)/1000000),4) AS gross_sales_mln FROM
fact_sales_monthly S JOIN fact_gross_price P
ON S.fiscal_year = P.fiscal_year AND S.product_code = P.product_code
JOIN DIM_CUSTOMER C
ON S.CUSTOMER_CODE = C.CUSTOMER_CODE
WHERE S.fiscal_year = 2021
GROUP BY C.CHANNEL
) A,
(
SELECT ROUND((SUM(S.sold_quantity * P.gross_price)/1000000),4) AS sales
 FROM fact_sales_monthly S JOIN fact_gross_price P
ON S.fiscal_year = P.fiscal_year AND
S.product_code = P.product_code
JOIN DIM_CUSTOMER C
ON S.CUSTOMER_CODE = C.CUSTOMER_CODE
WHERE S.fiscal_year = 2021
)B;
```

Result Grid | Filter Rows:

channel	gross_sales_mln	percentage
Direct	257.5320	15.50%
Retailer	1219.0816	73.21%
Distributor	188.0256	11.29%



- Retailer is winner as contributed majorly to FY 2021 Sales around 73% , followed by Direct (16%) and Distributor (11%)

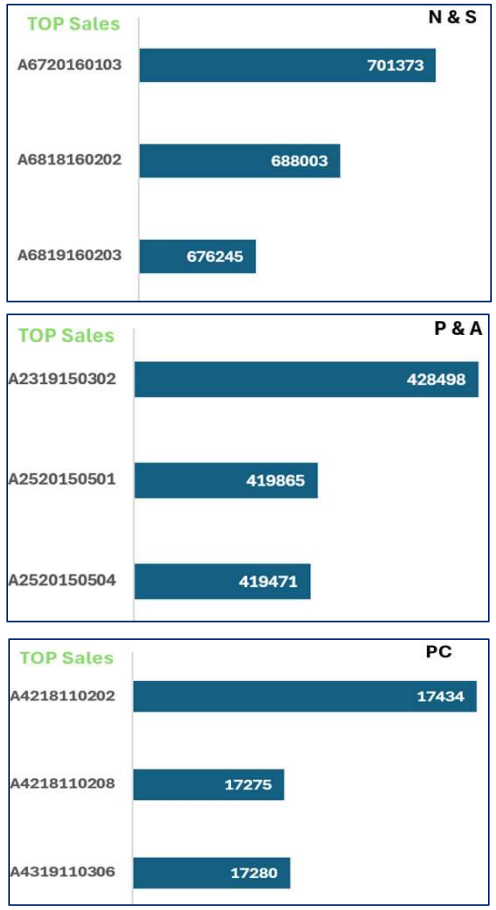
10.Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021?

```sql
SELECT  A.division, A.product_code, A.product,A.QTY AS total_sold_quantity,
A.RANKING AS rank_order FROM
(
SELECT PRD.DIVISION, PRD.product_code,PRD.product,
SUM(SALES.sold_quantity) AS qty, DENSE_RANK() OVER(PARTITION BY PRD.division
ORDER BY division,SUM(SALES.SOLD_QUANTITY) DESC) AS Ranking
FROM fact_sales_monthly SALES JOIN dim_product PRD ON SALES.product_code=PRD.product_CODE
WHERE SALES.fiscal_year='2021'
GROUP BY PRD.DIVISION, PRD.product_code,PRD.product
) A
WHERE A.RANKING <=3
group by A.DIVISION,A.PRODUCT_CODE
```

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

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

- In Division, N & S has recorded higher Sales compared to P&A and PC



Thank You

By: Mayur Mehta