SQL PROJECT

Finance Analytics of AtliQ Hardwares

About Company and Problem statement

AtliQ Hardware is a company which has grown vastly in recent years and is all over the globe. The company specializes in selling computer hardware and related products through three channels i.e. Retailers, Direct and Distributors.

Excel is a common and accessible way for individuals and businesses to analyze and visualize data. Despite having a wide range of tools and functions for performing basic to advanced data analysis tasks, on the other hand, working with large Excel files can be slow and unresponsive, often crashing or freezing during use. The struggle with handling extensive datasets leads to performance issues and data corruption risks.

In this project, I utilized SQL to address the limitations of Excel in handling and analyzing vast datasets. This enables the generation of required reports and extracts valuable insights, leading to enhanced company operational efficiency.

Croma India product-wise sales report for fiscal year 2021

```sql
SELECT
        sales.date,
        LEFT(DATE_FORMAT(sales.date, '%M'), 3) AS month,
        sales.product_code,
        p.product, p.variant,
        sales.sold_quantity,
        ROUND(gross.gross_price,2) AS gross_price,
        ROUND((sales.sold_quantity * gross.gross_price),2) AS
total_gross_price

FROM fact_sales_monthly AS sales
JOIN dim_product AS p
  ON
    sales.product_code = p.product_code
JOIN fact_gross_price AS gross
   ON
   sales.product_code = gross.product_code
   AND
     get_fiscal_year(sales.date) = gross.fiscal_year
WHERE
customer_code = 90002002 AND
get_fiscal_year(sales.date) = 2021
ORDER BY date
LIMIT 1000000;
```

date	month	product_code	product	variant	sold_quantity	gross_price	total_gross_price
2020-09-01	Sep	A0118150101	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Standard	202	19.06	3849.57
2020-09-01	Sep	A0118150102	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Plus	162	21.46	3475.95
2020-09-01	Sep	A0118150103	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Premium	193	21.78	4203.44
2020-09-01	Sep	A0118150104	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Premium Plus	146	22.97	3354.04
2020-09-01	Sep	A0219150201	AQ WereWolf NAS Internal Hard Drive HDD – 8....	Standard	149	23.70	3531.11
2020-09-01	Sep	A0219150202	AQ WereWolf NAS Internal Hard Drive HDD – 8....	Plus	107	24.73	2646.24
2020-09-01	Sep	A0220150203	AQ WereWolf NAS Internal Hard Drive HDD – 8....	Premium	123	23.62	2904.69
2020-09-01	Sep	A0320150301	AQ Zion Saga	Standard	146	23.72	3463.46
2020-09-01	Sep	A0321150302	AQ Zion Saga	Plus	236	27.10	6396.24
2020-09-01	Sep	A0321150303	AQ Zion Saga	Premium	137	28.01	3836.81
2020-09-01	Sep	A0418150103	AQ Mforce Gen X	Standard 3	23	19.52	449.04
2020-09-01	Sep	A0418150104	AQ Mforce Gen X	Plus 1	82	19.92	1633.76
2020-09-01	Sep	A0418150105	AQ Mforce Gen X	Plus 2	86	20.08	1726.59
2020-09-01	Sep	A0418150106	AQ Mforce Gen X	Plus 3	48	19.94	956.95
2020-09-01	Sep	A0519150201	AQ Mforce Gen Y	Standard 1	138	22.40	3090.98
2020-09-01	Sep	A0519150202	AQ Mforce Gen Y	Standard 2	72	24.93	1794.95
2020-09-01	Sep	A0519150203	AQ Mforce Gen Y	Standard 3	38	26.59	1010.31
2020-09-01	Sep	A0519150204	AQ Mforce Gen Y	Plus 1	149	26.11	3890.11
2020-09-01	Sep	A0519150205	AQ Mforce Gen Y	Plus 2	29	29.70	861.32
2020-09-01	Sep	A0519150206	AQ Mforce Gen Y	Plus 3	28	31.24	874.83
2020-09-01	Sep	A0519150207	AQ Mforce Gen Y	Premium 1	171	32.44	5547.70
2020-09-01	Sep	A0519150208	AQ Mforce Gen Y	Premium 2	118	30.58	3608.63

Gross monthly total sales report

```sql
SELECT
      CONCAT(LEFT(DATE_FORMAT(sales.date, '%M'),3),',',YEAR(sales.date)) AS month,
      SUM(ROUND(sales.sold_quantity * gross.gross_price,2)) AS monthly_gross_sales

FROM fact_sales_monthly AS sales
JOIN fact_gross_price AS gross
   ON sales.product_code = gross.product_code
   AND get_fiscal_year(sales.date) = gross.fiscal_year

WHERE customer_code = 90002002
GROUP BY sales.date
ORDER BY date;
```

month	monthly_gross_sales
Sep,2017	122407.57
Oct,2017	162687.56
Dec,2017	245673.84
Jan,2018	127574.73
Feb,2018	144799.54
Apr,2018	130643.92
May,2018	139165.06
Jun,2018	125735.36
Aug,2018	125409.90
Sep,2018	343337.14
Oct,2018	440562.10
Dec,2018	653944.72
Jan,2019	359025.06
Feb,2019	356607.19
Apr,2019	379549.74
May,2019	340152.29
Jun,2019	343792.08
Aug,2019	338108.87
Sep,2019	808250.42

Data is from September 2017 to December 2021

- **From September 2017 to August 2020:** The average monthly sales were **421,531.81**
- **August 2020 to December 2020:** Sales grew slowly during this period.
- **January 2021:** A decline of **43.52%** in sales was observed.
- **January 2021 to August 2021:** The average sales was **2,288,581.03**
- **September 2021 to December 2021:** Sales continued to increase, with a **67.57%** increase from September to October, and a **39.64%** increase from October to December.

Yearly gross sales report

```sql
SELECT
      get_fiscal_year(sales.date) AS fiscal_year,
      ROUND(SUM(sales.sold_quantity * gross.gross_price/1000000),2)
      AS 'yearly_gross_sales (mln)'

FROM fact_sales_monthly AS sales
JOIN fact_gross_price AS gross
   ON sales.product_code = gross.product_code
   AND get_fiscal_year(sales.date) = gross.fiscal_year

WHERE customer_code = 90002002
GROUP BY get_fiscal_year(sales.date)
ORDER BY fiscal_year;
```

fiscal_year	yearly_gross_sales (mln)
2018	1.32
2019	3.56
2020	6.50
2021	23.22
2022	44.64

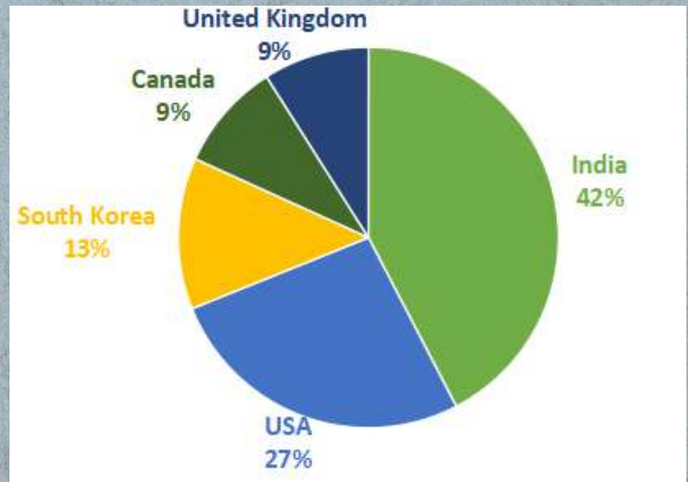
Top markets, products and customers for a given fiscal year 2021

```sql
-- Market

CREATE DEFINER=`root`@`localhost` PROCEDURE`get_top_N_markets_by_net_sales`(
        in_fiscal_year INT,
        in_top_N INT
)
BEGIN
    SELECT
        market,
        ROUND(SUM(net_sales/1000000),2) AS net_sales_mln
    FROM gdb0041.net_sales
WHERE fiscal_year = in_fiscal_year
GROUP BY market
ORDER BY net_sales_mln desc
LIMIT in_top_N;
END
```

market	net_sales_mln
India	210.67
USA	132.05
South Korea	64.01
Canada	45.89
United Kingdom	44.73

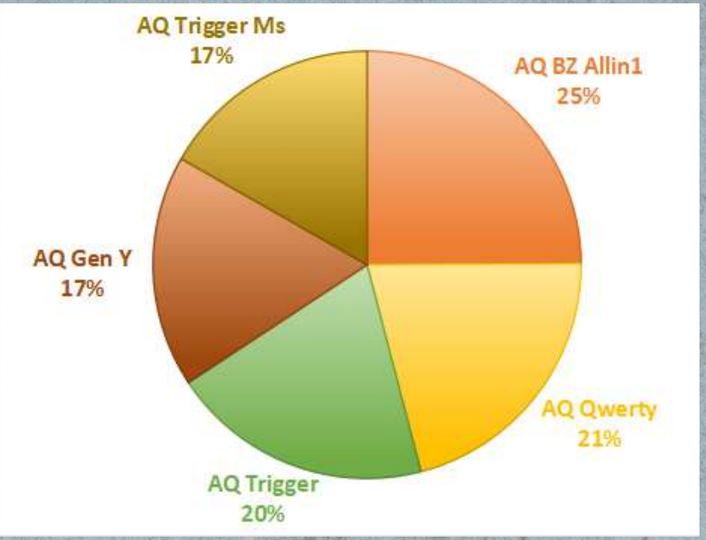
Top 5 Markets (2021)



```sql
-- Products
CREATE DEFINER=`root`@`localhost` PROCEDURE `get_top_N_product_by_net_sales`(
        in_fiscal_year INT,
        in_top_N INT,
        in_market VARCHAR(40)
)
BEGIN
    SELECT
       product,
       ROUND(SUM(net_sales/1000000),2) AS net_sales_mln
    FROM gdb0041.net_sales
    WHERE fiscal_year = in_fiscal_year AND
          market = in_market
    GROUP BY product
    ORDER BY net_sales_mln desc
    LIMIT in_top_N;
END
```

product	net_sales_mln
AQ BZ Allin1	8.54
AQ Qwerty	7.22
AQ Trigger	6.78
AQ Gen Y	6.02
AQ Trigger Ms	5.74

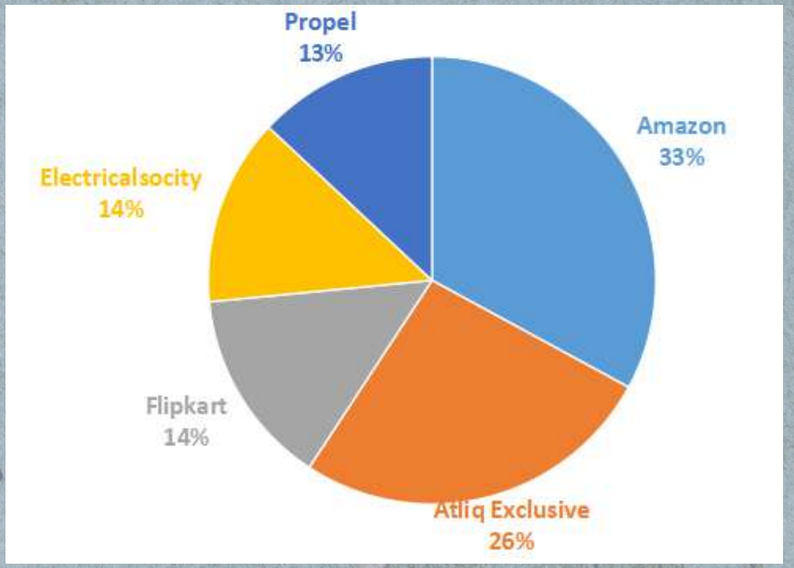
Top 5 products in Indian Market (2021)



```sql
-- Customers
CREATE DEFINER=`root`@`localhost` PROCEDURE `get_top_N_customers_by_net_sales`(
          in_fiscal_year INT,
          in_top_N INT,
          in_market VARCHAR(40)
)
BEGIN
     SELECT
        customer,
        ROUND(SUM(net_sales/1000000),2) AS net_sales_mln
     FROM gdb0041.net_sales AS n
     JOIN dim_customer AS c
        ON c.customer_code = n.customer_code
     WHERE
          n.fiscal_year = in_fiscal_year AND
          n.market = in_market
     GROUP BY customer
     ORDER BY net_sales_mln desc
   LIMIT in_top_N;
END
```

customer	net_sales_mln
Amazon	30.00
Atliq Exclusive	23.98
Flipkart	12.96
Electricalsocity	12.31
Propel	11.86

Top 5 Customers in Indian market (2021)



Net sales % share by Customers

```sql
with cte1 AS(
      SELECT
          c.customer,
          ROUND(SUM(net_sales/1000000),2) AS net_sales_mln

FROM net_sales AS n
JOIN dim_customer AS c
    ON c.customer_code = n.customer_code
WHERE
    n.fiscal_year = 2021
GROUP BY c.customer )

SELECT *,
ROUND(net_sales_mln*100/SUM(net_sales_mln) over(),2) AS pct_net_sales

FROM cte1
ORDER BY net_sales_mln desc;
```

customer	net_sales_mln	pct_net_sales
Amazon	109.03	13.23
Atliq Exclusive	79.92	9.70
Atliq e Store	70.31	8.53
Sage	27.07	3.29
Flipkart	25.25	3.06
Leader	24.52	2.98
Neptune	21.01	2.55
Ebay	19.88	2.41
Electricalsocity	16.25	1.97
Synthetic	16.10	1.95
Electricalslytical	15.64	1.90
Acclaimed Sto...	14.32	1.74
Propel	14.14	1.72
Novus	12.91	1.57
Expression	12.90	1.57
Reliance Digital	12.75	1.55
walmart	12.63	1.53
Costco	12.19	1.48
Staples	11.49	1.39
Girias	11.30	1.37
Vijay Sales	11.27	1.37
Path	11.02	1.34
Lotus	10.53	1.28
Ezone	10.30	1.25

Net sales % share by different Regions

```sql
with cte1 AS(
          SELECT
              c.customer, c.region,
              ROUND(SUM(net_sales/1000000),2) AS net_sales_mln

FROM net_sales AS n
JOIN dim_customer AS c
   ON c.customer_code = n.customer_code
WHERE
      n.fiscal_year = 2021
GROUP BY c.customer, c.region  )

SELECT *,
ROUND(net_sales_mln*100/SUM(net_sales_mln) over(partition
by region),2) AS pct_net_sales

FROM cte1
ORDER BY region, net_sales_mln desc;
```

customer	region	net_sales_mln	pct_net_sales
Amazon	APAC	57.41	12.99
Atliq Exclusive	APAC	51.58	11.67
Atliq e Store	APAC	36.97	8.36
Leader	APAC	24.52	5.55
Sage	APAC	22.85	5.17
Neptune	APAC	21.01	4.75
Electricalsocity	APAC	16.25	3.68
Propel	APAC	14.14	3.20
Synthetic	APAC	14.14	3.20
Flipkart	APAC	12.96	2.93
Novus	APAC	12.91	2.92
Expression	APAC	12.90	2.92
Girias	APAC	11.30	2.56
Vijay Sales	APAC	11.27	2.55
Ebay	APAC	11.14	2.52
Reliance Digital	APAC	11.10	2.51
Electricalslytical	APAC	11.08	2.51
Lotus	APAC	10.53	2.38
Ezone	APAC	10.30	2.33
Viveks	APAC	10.09	2.28
Croma	APAC	9.88	2.24
Zone	APAC	6.91	1.56
Acclaimed Sto...	APAC	5.79	1.31
Taobao	APAC	4.31	0.98

Regional Sales Performance (2021)

- **APAC:** Amazon and AtliQ Exclusive are the top contributors.
- **EU:** AtliQ e-store dominates the market.
- **LATAM:** Amazon and AtliQ e-store have significant shares.
- **NA:** Amazon is the primary sales driver.

In terms of markets, **India**, **USA**, and **South Korea** continue to be the company's **primary markets**.

In terms of products, **Amazon** has been the leading contributor to net sales since 2018.

Top 2 markets in every region by their gross sales for a given fiscal year

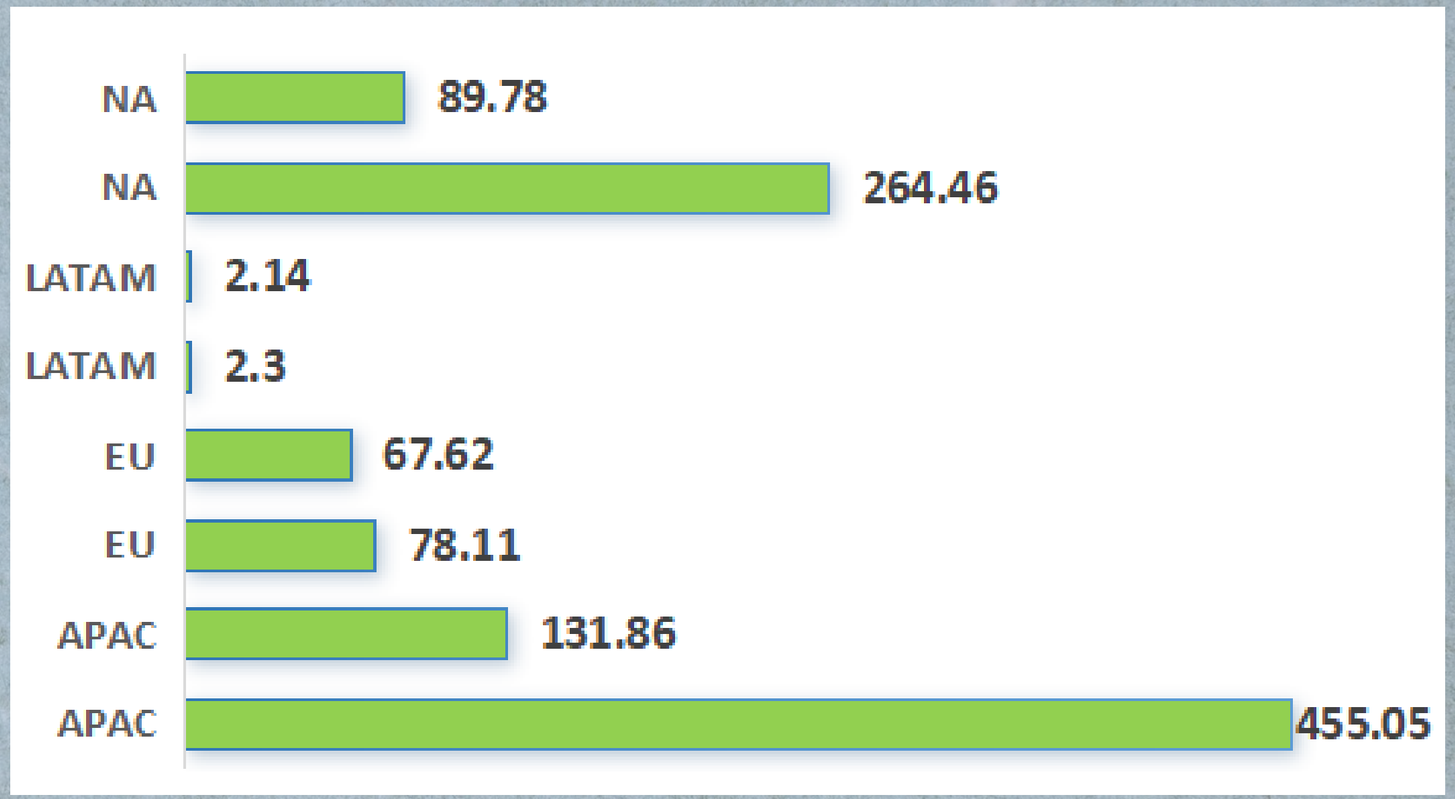
```sql
WITH cte1 AS(
        SELECT
            g.market, c.region,
            ROUND(SUM(g.total_gross_price/1000000),2) AS gross_sales_mln

FROM gross_sales AS g
JOIN dim_customer AS c
    ON g.customer_code = c.customer_code
WHERE
       g.fiscal_year = 2021
GROUP BY g.market, c.region  ),

cte2 AS
(SELECT *, dense_rank() over(partition by region order by
gross_sales_mln desc) AS drnk
FROM cte1)

SELECT * FROM cte2
WHERE drnk <= 2;
```

market	region	gross_sales_mln	drnk
India	APAC	455.05	1
South Korea	APAC	131.86	2
United Kingdom	EU	78.11	1
France	EU	67.62	2
Mexico	LATAM	2.30	1
Brazil	LATAM	2.14	2
USA	NA	264.46	1
Canada	NA	89.78	2



- **APAC** region dominates as **India** is the top-performing market with **455.05 million** gross sales.
- **Indian** and **USA** markets account for a large portion of the total gross sales, indicating potential market concentration.
- **EU** and **NA** regions show **moderate** market performance.
- **LATAM** markets struggle compared to others.

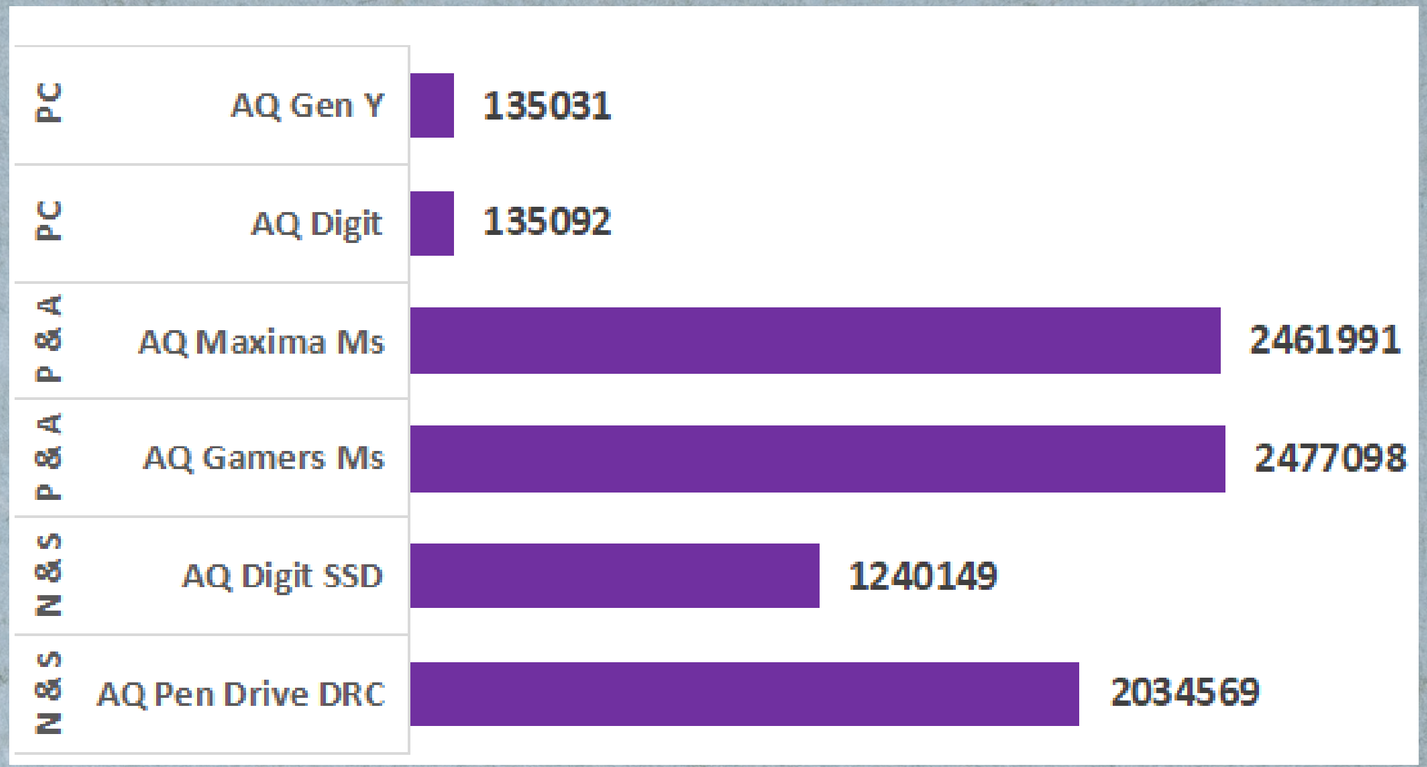
Top 2 products per division by their sold quantity for a given fiscal year

```sql
WITH cte1 AS(
         SELECT
             p.division, p.product,
             SUM(sold_quantity) AS total_quantity

FROM fact_sales_monthly AS s
JOIN dim_product AS p
   ON p.product_code = s.product_code
WHERE
s.fiscal_year = 2021
GROUP BY p.product,p.division),
cte2 AS
(SELECT *, dense_rank() over(partition by division order by
total_quantity desc) AS drnk
FROM cte1)

SELECT * FROM cte2
WHERE drnk <= 3;
```

division	product	total_qty	drnk
N & S	AQ Pen Drive DRC	2034569	1
N & S	AQ Digit SSD	1240149	2
P & A	AQ Gamers Ms	2477098	1
P & A	AQ Maxima Ms	2461991	2
PC	AQ Digit	135092	1
PC	AQ Gen Y	135031	2



- **N&S** and **P&A** divisions are the top performers.
- **AQ Pen Drive DRC** and **AQ Gamers Ms** are the most popular products.

THANK YOU...