Consumer Goods Ad-Hoc Insights

SQL RESUME PROJECT – CODEBASICS CHALLENGE #4

Jainam Jain
Aspiring Analytics Professional

AtliQ Hardware

The Business Challenge

📌 *AtliQ Hardware was struggling with delayed⏱️ and inconsistent insight for operational decision-making.*

📌 *Their analytics team was handed 10 ad-hoc data queries from leadership.🧩*

📌 *Objective: Generate actionable insights💡 from raw sales & product data using SQL.*

TOOLS & SQL CONCEPTS APPLIED

🔧 **Tools Used:**

- 🐬 MySQL — Querying & transforming data
- 📈 Power BI & 🎨 Canva — Visual storytelling & insight presentation

🧠 **SQL Concepts Mastered:**

- Clauses: SELECT, WHERE, GROUP BY, ORDER BY
- Aggregates: SUM(), COUNT(), AVG(), MIN(), MAX()
- Joins: INNER JOIN, LEFT JOIN, CROSS JOIN
- Advanced: CTEs (WITH), Subqueries
- Functions: WINDOW FUNCTIONS, RANK(), CASE WHEN, ROUND()

HOW WE SOLVED IT

🛠️ Received 10 business questions from AtliQ Hardware’s leadership

🔍 Wrote SQL queries to retrieve, clean, and analyze key data

📈 Visualized findings using Canva and Power BI

🧠 Shared insights + recommendations for better decisions

PROVIDE THE LIST OF MARKETSIN WHICH CUSTOMER"ATLIQ EXCLUSIVE" OPERATES ITS BUSINESS IN THE APAC REGION.

```sql
SELECT DISTINCT
    market
FROM
    dim_customer
WHERE
    region = 'APAC'
        AND customer = 'Atliq Exclusive';
```

market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

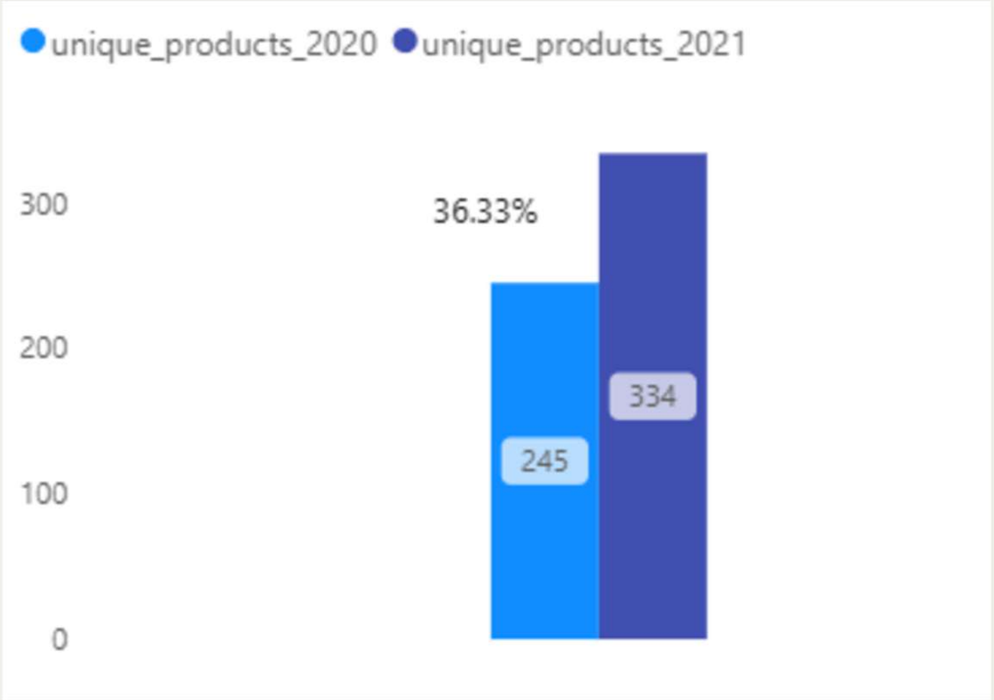
"Atliq Exclusive" operates its business in 8 countries the APAC region.

WHAT IS THE PERCENTAGE OF UNIQUE PRODUCT INCREASE IN 2021 VS. 2020?

```sql
WITH cte1 AS (
    SELECT
        fiscal_year,
        COUNT(DISTINCT Product_code) AS unique_products
    FROM
        fact_sales_monthly
    GROUP BY
        fiscal_year
)

SELECT
    up_2020.unique_products AS unique_products_2020,
    up_2021.unique_products AS unique_products_2021,
    ROUND(
        ((up_2021.unique_products - up_2020.unique_products) / up_2020.unique_products * 100), 2
    ) AS percentage_change
FROM
    cte1 up_2020
CROSS JOIN
    cte1 up_2021
    WHERE
    up_2020.fiscal_year = 2020
    AND up_2021.fiscal_year = 2021;
```

	unique_products_2020	unique_products_2021	percentage_chg
▶	245	334	36.33

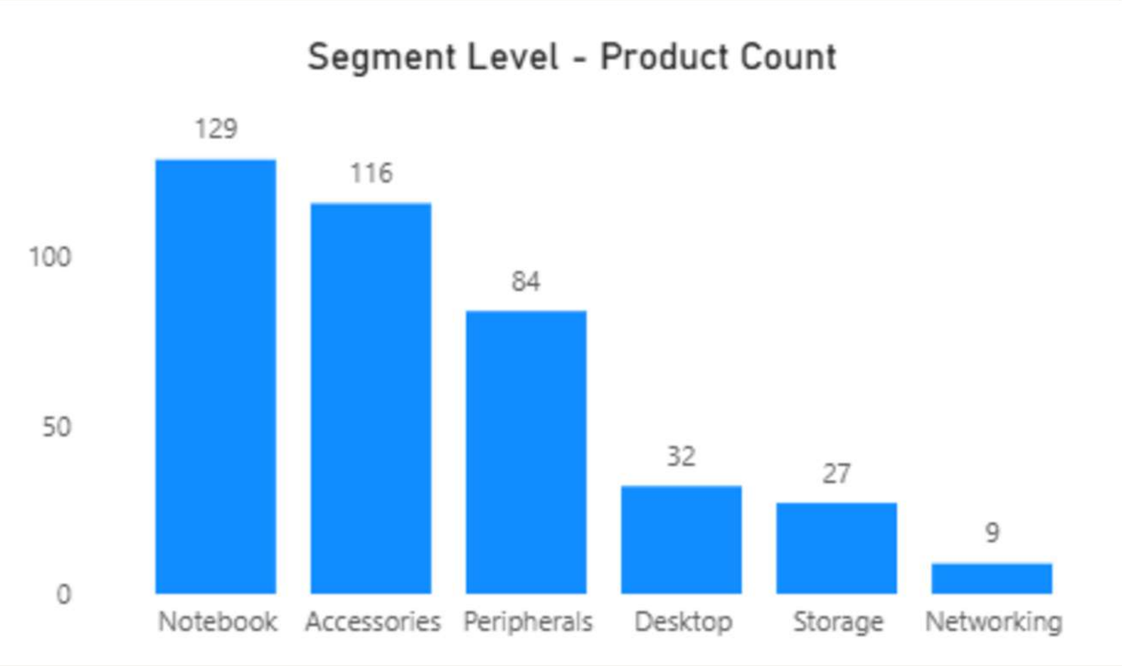


There was a 36.33% increase in total Products between 2020 & 2021

PROVIDE A REPORT WITH ALL THE UNIQUE PRODUCT COUNTS FOR EACH SEGMENT AND SORT THEM IN DESCENDING ORDER OF PRODUCT COUNTS.

```sql
SELECT
    segment, COUNT(DISTINCT product_code) AS product_count
FROM
    dim_product
GROUP BY segment
ORDER BY product_count DESC;
```

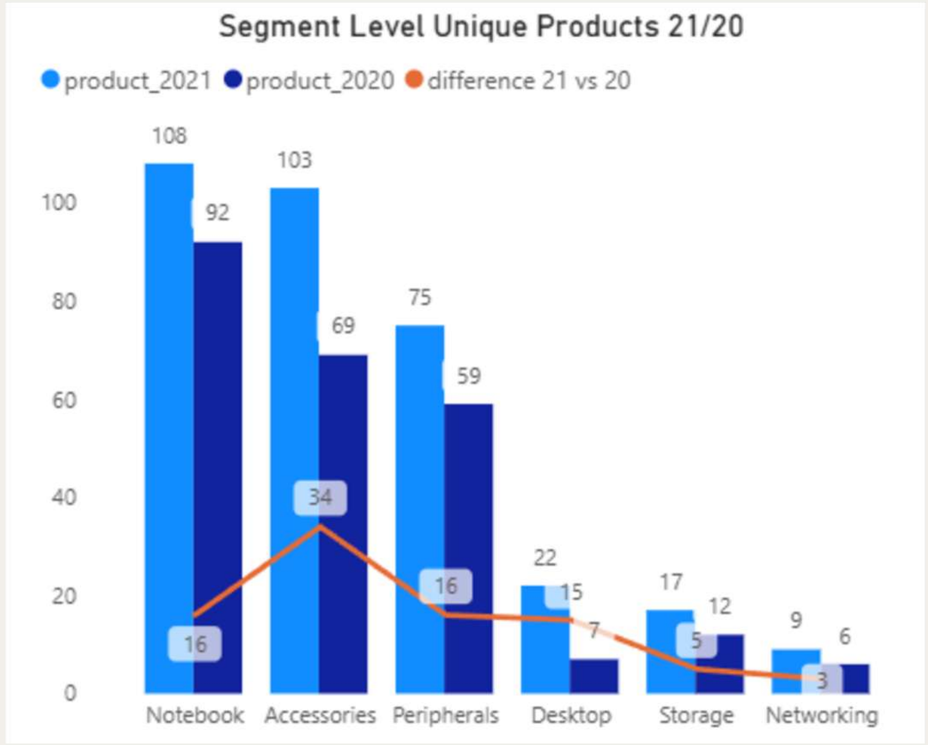
segment	product_count
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9



WHICH SEGMENT HAD THE MOST INCREASE IN UNIQUE PRODUCTS IN 2021 VS 2020?

```sql
WITH cte1 AS (
    SELECT
        dp.segment,
        COUNT(DISTINCT fsm.product_code) AS unique_products,
        fsm.fiscal_year
    FROM
        fact_sales_monthly fsm
    JOIN dim_product dp ON fsm.product_code = dp.product_code
    WHERE fsm.fiscal_year IN (2020, 2021)
    GROUP BY dp.segment, fsm.fiscal_year)
SELECT
    up_2020.segment,
    up_2020.unique_products AS product_count_2020,
    up_2021.unique_products AS product_count_2021,
    up_2021.unique_products - up_2020.unique_products AS difference
FROM
    cte1 up_2020
JOIN
    cte1 up_2021
    ON up_2020.segment = up_2021.segment
WHERE
    up_2020.fiscal_year = 2020 AND up_2021.fiscal_year = 2021
ORDER BY difference DESC;
```

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

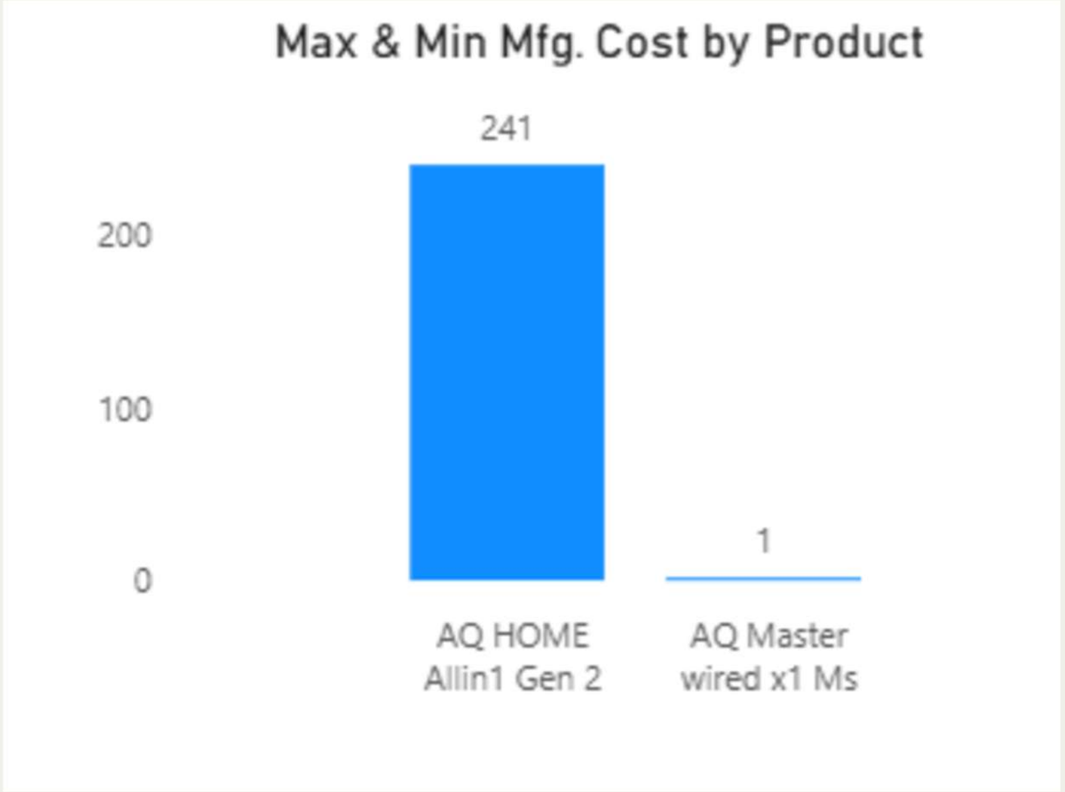


There was a rise of 34 units in ACCESSORIES production between 2020 & 2021

GET THE PRODUCTS THAT HAVE THE HIGHEST AND LOWEST MANUFACTURING COSTS.

```sql
SELECT
    p.product_code, product, manufacturing_cost
FROM
    fact_manufacturing_cost m
        JOIN
    dim_product p 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;
```

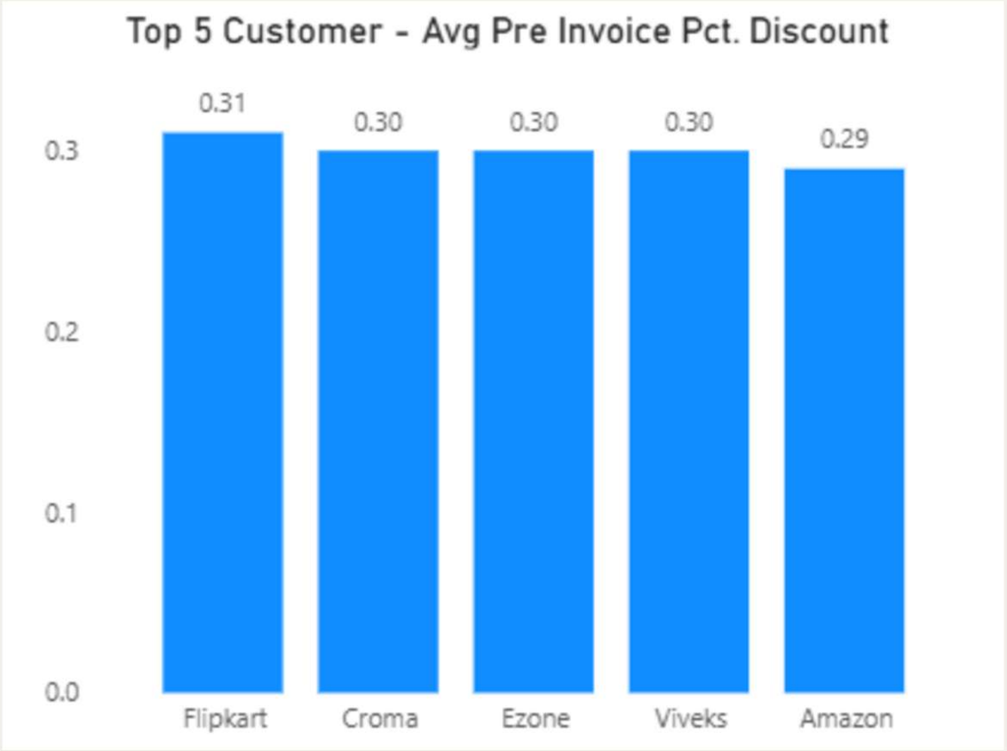
product_code	product	manufacturing_cost
A6120110206	AQ HOME Allin1 Gen 2	240.5364
A2118150101	AQ Master wired x1 Ms	0.8920



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.

```sql
SELECT
    c.customer_code,
    c.customer,
    ROUND(AVG(pre_invoice_discount_pct), 2) AS avg_discount_percentage
FROM
    fact_pre_invoice_deductions pid
        JOIN
    dim_customer c ON c.customer_code = pid.customer_code
WHERE
    fiscal_year = 2021 AND market = 'India'
GROUP BY c.customer_code
ORDER BY avg_discount_percentage DESC
LIMIT 5;
```

customer_code	customer	avg_discount_percentage
90002009	Flipkart	0.31
90002006	Viveks	0.30
90002002	Croma	0.30
90002003	Ezone	0.30
90002016	Amazon	0.29



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.

```sql
WITH cte1 AS (
SELECT MONTHNAME(date) AS   months,
    MONTH(date) AS month_num,
    YEAR(date) as year,
    sold_quantity * gross_price AS gross_sales
FROM
    fact_sales_monthly s
        JOIN
    fact_gross_price g ON s.product_code = g.product_code
        JOIN
    dim_customer c ON c.customer_code = s.customer_code
WHERE
    customer = 'Atliq Exclusive')
SELECT
    months,
    year,
    CONCAT(ROUND(SUM(gross_sales) / 1000000, 2), ' M') AS gross_sales_amount
FROM cte1
GROUP BY year , months
ORDER BY year , month_num;
```

months	year	gross_sales_amount
September	2019	9.09 M
October	2019	10.38 M
November	2019	15.23 M
December	2019	9.76 M
January	2020	9.58 M
February	2020	8.08 M
March	2020	0.77 M
April	2020	0.80 M
May	2020	1.59 M
June	2020	3.43 M
July	2020	5.15 M
August	2020	5.64 M
September	2020	19.53 M
October	2020	21.02 M
November	2020	32.25 M
December	2020	20.41 M
January	2021	19.57 M
February	2021	15.99 M
March	2021	19.15 M
April	2021	11.48 M
May	2021	19.20 M
June	2021	15.46 M
July	2021	19.04 M
August	2021	11.32 M

Sales dropped to 0.77m in March 2020 during the COVID Pandemic but reached a high of 32.25m in November 2020

IN WHICH QUARTER OF 2020, GOT THE MAXIMUM TOTAL_SOLD_QUANTITY?

```sql
WITH cte1 AS (
 SELECT
    MONTH(date) AS month_num, date, fiscal_year, sold_quantity
FROM
    fact_sales_monthly)

    SELECT
    CASE
    WHEN month_num BETWEEN 9 AND 11 THEN "Q1"
    WHEN month_num = 12 OR month_num BETWEEN 1 AND 2 THEN "Q2"
    WHEN month_num BETWEEN 3 AND 5 THEN "Q3"
    WHEN month_num BETWEEN 6 AND 8 THEN "Q4"
    END AS quarters,
    ROUND(SUM(sold_quantity)/1000000, 2) AS total_sold_qty_in_millions
    FROM cte1
    WHERE fiscal_year = 2020
    GROUP BY quarters
    ORDER BY total_sold_qty_in_millions DESC;
```

	quarters	total_sold_qty_in_millions
▶	Q1	7.01
	Q2	6.65
	Q4	5.04
	Q3	2.08

QUARTER 1 SAW THE HIGHEST SALES AT 7.01M UNITS

WHICH CHANNEL HELPED TO BRING MORE GROSS SALES IN THE FISCAL YEAR 2021 AND THE PERCENTAGE OF CONTRIBUTION?

```sql
WITH cte1 AS (
SELECT
    channel,
    SUM(gross_price * sold_quantity) AS gross_sales,
    s.fiscal_year
FROM
    fact_sales_monthly s
        JOIN
    fact_gross_price g ON s.product_code = g.product_code
        JOIN
    dim_customer c ON c.customer_code = s.customer_code
    WHERE s.fiscal_year = 2021
    GROUP BY channel
    ORDER BY gross_sales DESC )

    SELECT channel, ROUND(gross_sales/1000000, 2) AS gross_sales_mln, ROUND((gross_sales/SUM(gross_sales) OVER())*100, 2) AS percentage
    FROM cte1;
```

Retailer contributed the most in gross sales with 73.22%, while Distributor contributed the lowest with 11.31%

	channel	gross_sales_mln	percentage
▶	Retailer	1924.17	73.22
	Direct	406.69	15.47
	Distributor	297.18	11.31

GET THE TOP 3 PRODUCTS IN EACH DIVISION THAT HAVE A HIGH TOTAL_SOLD_QUANTITY IN THE FISCAL_YEAR 2021?

```sql
WITH cte1 AS (
SELECT
    division,
    p.product_code,
    product,
    SUM(sold_quantity) AS total_sold_qty
FROM
    dim_product p
        JOIN
    fact_sales_monthly s ON p.product_code = s.product_code
WHERE
    fiscal_year = 2021
    GROUP BY p.product_code),

ranked_products AS (
SELECT *,
    RANK() OVER(PARTITION BY division ORDER BY total_sold_qty DESC) AS rank_order
    FROM cte1)

SELECT * FROM ranked_products
WHERE rank_order <= 3
```

division	product_code	product	total_sold_qty	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

📋 SUMMARY:

✓ Delivered 10 key business insights
✓ Applied intermediate SQL & dashboarding techniques
✓ Shared strategic recommendations for growth & planning

Thank you!