



SQL PROJECT

FINANCE & SUPPLY CHAIN
ANALYTICS AT ATLIQ HARDWARE

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PROJECT OVERVIEW

OPTIMIZING ATLIQ HARDWARE'S OPERATIONS THROUGH SQL

In this project, we aim to address the growing challenges **AtliQ Hardware** faces due to the size and complexity of their current data management in Excel. As a leading global manufacturer of hardware products, AtliQ Hardware requires efficient, data-driven insights to remain competitive in the market.

Our approach leverages **SQL to analyze key datasets**—spanning sales performance, customer behaviour, market trends, and supply chain operations—allowing us to transform raw data into actionable insights. By utilizing SQL for structured querying and analysis, we will streamline data processing, forecast trends, and provide recommendations to improve operational efficiency, increase sales, and optimize inventory management.

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ATLIQ HARDWARE & BUSINESS MODEL



AtliQ Hardware is a renowned global leader in electronics manufacturing, known for its expertise in producing and distributing a wide range of high-quality hardware products.

Our portfolio includes personal computers, printers, mice, and various other computer peripherals, designed to meet the diverse needs of customers around the world.

PROBLEM STATEMENT & PROBLEM OVERVIEW

PROBLEM STATEMENT

AtliQ Hardware is experiencing performance inefficiencies driven by the growing size and complexity of its Excel-based data management system. To resolve these challenges, the company has established a specialized team of data analysts tasked with utilizing MySQL to extract meaningful insights and enhance overall operational efficiency. This transition aims to streamline data processes and enable more informed, data-driven decision-making.

PROBLEM OVERVIEW

The Scope of this project entails conduction an in-depth analysis of the dataset provided by AtliQ Hardware. The primary goal is to derive actionable insights regarding sales performance, market dynamics, customer behaviour, and to forecast supply chain trends

DATA-SET

DIMENSION TABLES

DIM_CUSTOMER

DIM_DATE

DIM_PRODUCT

FACT TABLES

FACT_FORECAST_MONTHLY

FACT_FREIGHT_COST

FACT_GROSS_PRICE

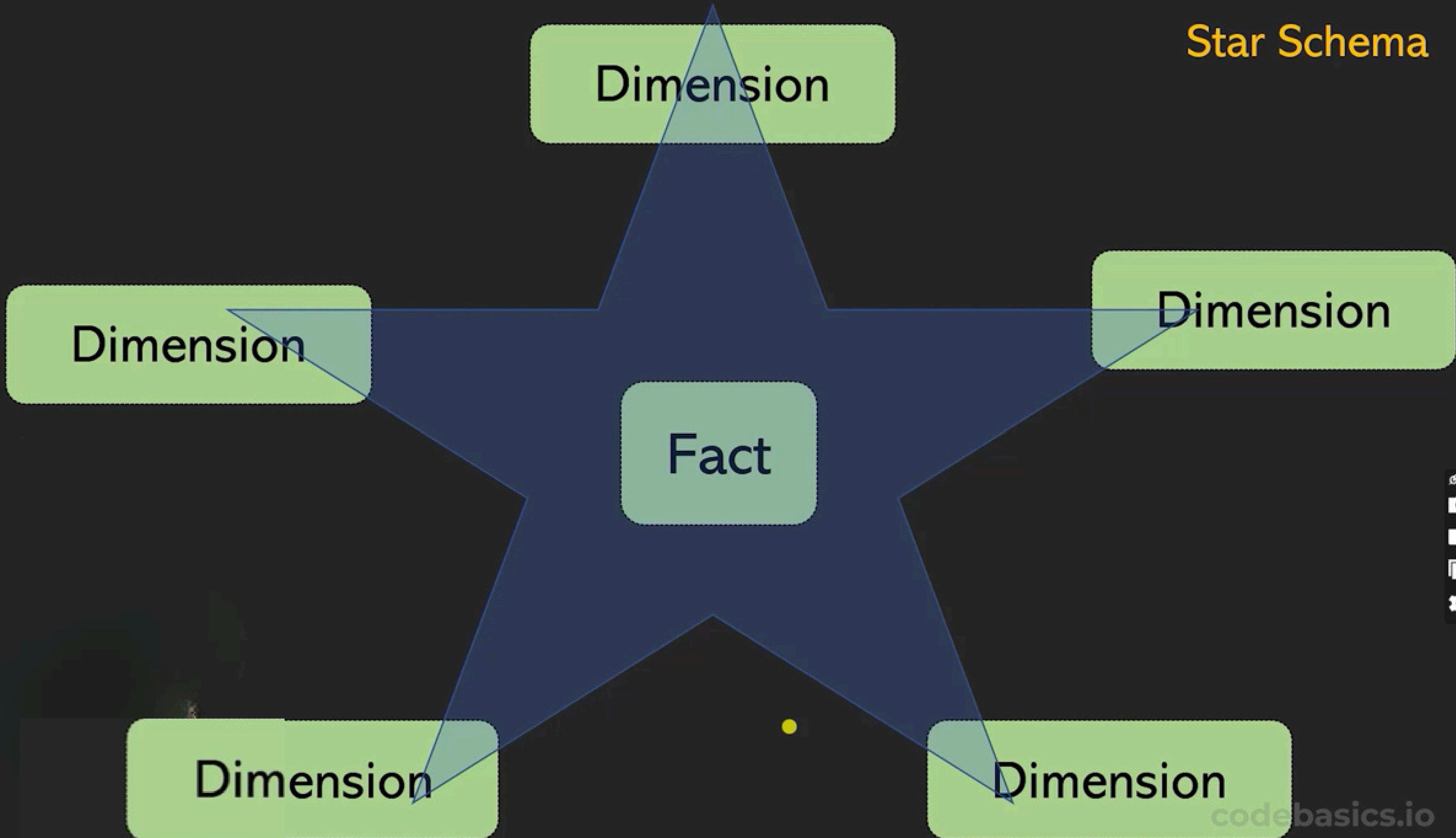
FACT_MANUFACTURING_COST

FACT_POST_INVOICE_DEDUCTIONS

FACT_PRE_INVOICE_DEDUCTIONS

FACT_SALES_MONTHLY

Star Schema



ATLIQ MARKET



1. GET ALL THE SALES TRANSACTION DATA FROM FACT_SALES_MONTHLY TABLE FOR THAT CUSTOMER(CROMA: 90002002) IN THE FISCAL_YEAR 2021

SELECT

*

FROM

fact_sales_monthly

WHERE

customer_code = 90002002

AND YEAR(DATE_ADD(date, INTERVAL 4 MONTH)) = 2021

ORDER BY date ASC

LIMIT 100000;

	date	fiscal_year	product_code	customer_code	sold_quantity
▶	2020-09-01	2021	A0118150101	90002002	202
	2020-09-01	2021	A0118150102	90002002	162
	2020-09-01	2021	A0118150103	90002002	193
	2020-09-01	2021	A0118150104	90002002	146
	2020-09-01	2021	A0219150201	90002002	149
	2020-09-01	2021	A0219150202	90002002	107
	2020-09-01	2021	A0220150203	90002002	123
	2020-09-01	2021	A0320150301	90002002	146
	2020-09-01	2021	A0321150302	90002002	236
	2020-09-01	2021	A0321150303	90002002	137
	2020-09-01	2021	A0418150103	90002002	23
	2020-09-01	2021	A0418150104	90002002	82
	2020-09-01	2021	A0418150105	90002002	86

2. CREATE A FUNCTION 'GET_FISCAL_YEAR' TO GET FISCAL YEAR BY PASSING THE DATE

```
CREATE ` FUNCTION `GET_FISCAL_YEAR`(  
    calendar_date DATE  
) RETURNS int  
DETERMINISTIC  
BEGIN  
    declare fiscal_year INT;  
    SET fiscal_year = YEAR(DATE_ADD(calendar_date,  
    INTERVAL 4 MONTH));  
    RETURN fiscal_year;  
END
```

3. GENERATE A REPORT DETAILING THE INDIVIDUAL PRODUCT SALES FOR CROMA INDIA CUSTOMER THROUGHOUT THE FISCAL YEAR 2021

```
SELECT
    s.date, s.product_code, p.product, p.variant,
    s.sold_quantity, g.gross_price,
    ROUND (g.gross_price * s.sold_quantity, 2) AS gross_price_total
FROM
    fact_sales_monthly AS s
    JOIN
        dim_product AS p ON s.product_code = p.product_code
    JOIN
        fact_gross_price AS g ON g.product_code = s.product_code
        AND g.fiscal_year = GET_FISCAL_YEAR(s.date)
WHERE
    customer_code = 90002002
        AND GET_FISCAL_YEAR (date) = 2021
ORDER BY date ASC;
```

	date	product_code	product	variant	sold_quantity	gross_price	gross_price_total
▶	2020-09-01	A0118150101	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Standard	202	19.0573	3849.57
	2020-09-01	A0118150102	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Plus	162	21.4565	3475.95
	2020-09-01	A0118150103	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Premium	193	21.7795	4203.44
	2020-09-01	A0118150104	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Premium Plus	146	22.9729	3354.04
	2020-09-01	A0219150201	AQ WereWolf NAS Internal Hard Drive HDD – 8....	Standard	149	23.6987	3531.11
	2020-09-01	A0219150202	AQ WereWolf NAS Internal Hard Drive HDD – 8....	Plus	107	24.7312	2646.24
	2020-09-01	A0220150203	AQ WereWolf NAS Internal Hard Drive HDD – 8....	Premium	123	23.6154	2904.69
	2020-09-01	A0320150301	AQ Zion Saga	Standard	146	23.7223	3463.46
	2020-09-01	A0321150302	AQ Zion Saga	Plus	236	27.1027	6396.24
	2020-09-01	A0321150303	AQ Zion Saga	Premium	137	28.0059	3836.81
	2020-09-01	A0418150103	AQ Mforce Gen X	Standard 3	23	19.5235	449.04
	2020-09-01	A0418150104	AQ Mforce Gen X	Plus 1	82	19.9239	1633.76
	2020-09-01	A0418150105	AQ Mforce Gen X	Plus 2	86	20.0766	1726.59

4. GENERATE A YEARLY REPORT FOR CROMA INDIA WHERE THERE ARE TWO COLUMNS:

1. FISCAL YEAR

2. TOTAL GROSS SALES AMOUNT IN THAT YEAR FROM CROMA

SELECT

GET_FISCAL_YEAR(date) AS fiscal_year,
SUM(ROUND(sold_quantity * g.gross_price, 2)) AS yearly_sales

FROM

fact_sales_monthly s

JOIN

fact_gross_price g ON g.fiscal_year = GET_FISCAL_YEAR(s.date)
AND g.product_code = s.product_code

WHERE

customer_code = 90002002

GROUP BY GET_FISCAL_YEAR(date)

ORDER BY fiscal_year;

The screenshot shows a data grid with the following structure:

	fiscal_year	yearly_sales
▶	2018	1324097.48
	2019	3555079.19
	2020	6502182.12
	2021	23216512.73
	2022	44638199.11

The grid has a header row with columns for an empty header, 'fiscal_year', and 'yearly_sales'. The data rows show the total yearly sales for each year from 2018 to 2022. The values are displayed in a light blue color.

5. WRITE A STORED PROCEDURE THAT CAN RETRIEVE MARKET BADGE. I.E. IF TOTAL SOLD QUANTITY > 5 MILLION THAT MARKET IS CONSIDERED "GOLD" ELSE "SILVER"

```
CREATE PROCEDURE `get_market_badge`(
    IN in_market varchar(45),
    IN in_fiscal_year year,
    OUT out_badge varchar(45)
)
BEGIN
    declare qty int default 0;
    # Set default market to be in India
    if in_market = "" then
        set in_market = "India";
    end if;
    # Retrieve total sold quantity for a given market in a given year
    SELECT
        SUM(s.sold_quantity) into qty
    FROM
        fact_sales_monthly AS s
        JOIN
            dim_customer AS c ON s.customer_code = c.customer_code
    WHERE
        GET_FISCAL_YEAR(s.date) = in_fiscal_year
        AND c.market = 'India'
    GROUP BY in_market;
    # Determine Gold vs Silver status
    if qty >5000000 then
        set out_badge = "Gold";
    Else
        set out_badge = "Silver";
    end if;
END
```

6.

**GENERATE
MONTHLY
GROSS SALES
REPORT FOR
ANY
CUSTOMER
USING
STORED
PROCEDURE**

```
CREATE PROCEDURE `get_monthly_gross_sales_for_customer`  
(in_customer_codes TEXT)  
BEGIN  
    SELECT  
        s.date,  
        SUM(ROUND(s.sold_quantity * g.gross_price, 2)) AS monthly_sales  
    FROM  
        fact_sales_monthly s  
    JOIN  
        fact_gross_price g ON s.product_code = g.product_code  
    AND g.fiscal_year = GET_FISCAL_YEAR(s.date)  
    WHERE  
        find_in_set(s.customer_code, in_customer_codes )>0  
    GROUP BY s.date;  
END
```

**7. CREATE A VIEW FOR
GROSS SALES. IT SHOULD
HAVE THE FOLLOWING
COLUMNS:**

-
**DATE, FISCAL_YEAR,
CUSTOMER_CODE,
CUSTOMER, MARKET,
PRODUCT_CODE, PRODUCT,
VARIANT,
SOLD_QUANITY,
GROSS_PRICE_PER_ITEM,
GROSS_PRICE_TOTAL**

```
CREATE VIEW `gross sales` AS
    SELECT
        s.date, s.fiscal_year, s.customer_code,
        c.customer,
        c.market, s.product_code, p.product, p.variant,
        s.sold_quantity, g.gross_price as
        gross_price_per_item,
        round(s.sold_quantity*g.gross_price,2) as
        gross_price_total
    from fact_sales_monthly s
    join dim_product p
    on s.product_code=p.product_code
    join dim_customer c
    on s.customer_code=c.customer_code
    join fact_gross_price g
    on g.fiscal_year=s.fiscal_year
    and g.product_code=s.product_code;
```

8. WRITE A STORED PROCEDURE TO GET THE TOP N PRODUCTS BY NET SALES FOR A GIVEN YEAR. USE PRODUCT NAME WITHOUT A VARIANT. INPUT OF STORED PROCEDURE IS FISCAL_YEAR AND TOP_N PARAMETER

```
CREATE PROCEDURE `get_top_n_products_by_net_sales`(  
    in_fiscal_year INT,  
    in_top_n INT  
)  
  
BEGIN  
  
    SELECT  
        product,  
        round(sum(net_sales)/1000000,2) as net_sales_mln  
    FROM gdb0041.net_sales  
    WHERE fiscal_year=in_fiscal_year  
    GROUP BY product  
    ORDER BY net_sales_mln desc  
    LIMIT in_top_n;  
  
END
```

9. GENERATE A REPORT GETTING TOP 5 MARKETS BY NET SALES IN FISCAL YEAR 2021

```
SELECT  
    market,  
    ROUND(SUM(Net_sales)/1000000,2) as net_sales_mln  
FROM gdb0041.net_sales  
WHERE fiscal_year = 2021  
GROUP BY market  
ORDER BY net_sales_mln desc  
LIMIT 5;
```

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

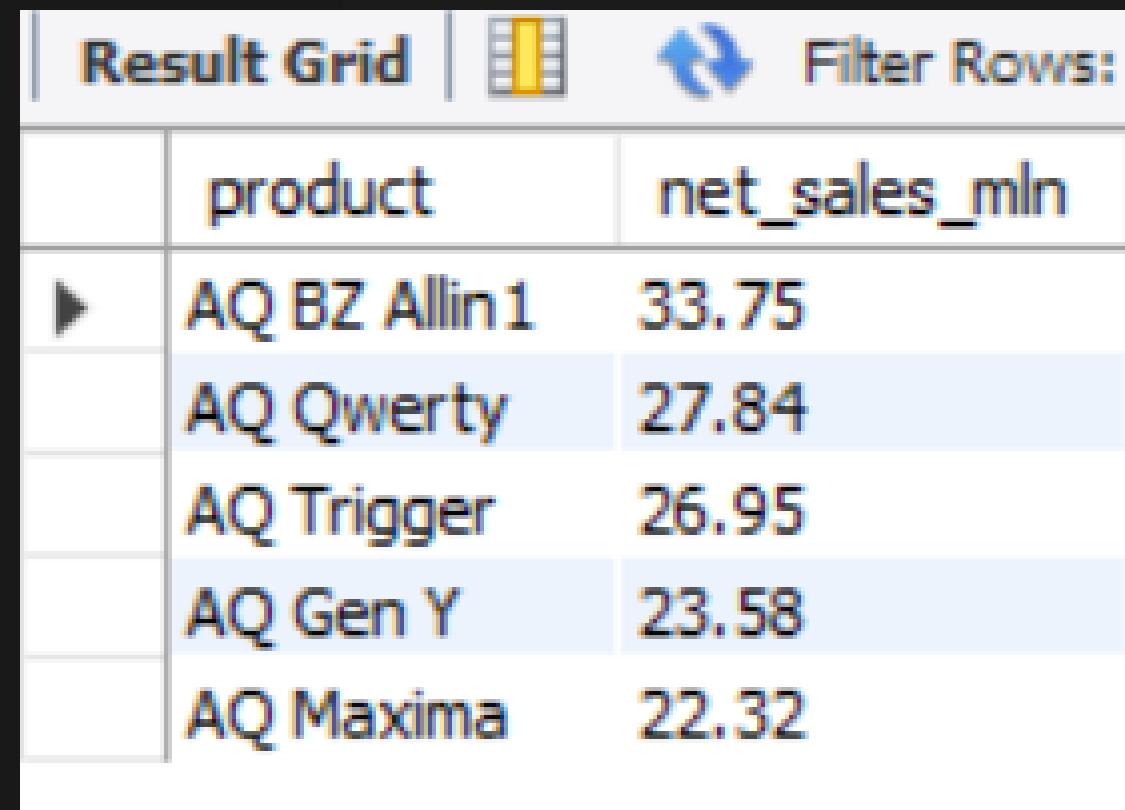
10. GENERATE A REPORT GETTING TOP 5 CUSTOMERS BY NET SALES IN FISCAL YEAR 2021

```
SELECT  
    c.customer,  
    ROUND(SUM(Net_sales)/1000000,2) as net_sales_mln  
FROM gdb0041.net_sales n  
JOIN dim_customer c  
ON n.customer_code = c.customer_code  
WHERE fiscal_year = 2021  
GROUP BY customer  
ORDER BY net_sales_mln desc  
LIMIT 5;
```

	customer	net_sales_mln
▶	Amazon	109.03
	Atiq Exclusive	79.92
	Atiq e Store	70.31
	Sage	27.07
	Flipkart	25.25

11. GENERATE A REPORT GETTING TOP 5 PRODUCTS BY NET SALES IN FISCAL YEAR 2021

```
SELECT
    product, ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_mln
FROM
    gdb0041.net_sales
WHERE
    fiscal_year = 2021
GROUP BY product
ORDER BY net_sales_mln DESC
LIMIT 5;
```



The screenshot shows a database query results grid with the following data:

	product	net_sales_mln
▶	AQ BZ Allin1	33.75
	AQ Qwerty	27.84
	AQ Trigger	26.95
	AQ Gen Y	23.58
	AQ Maxima	22.32

12.

**FIND OUT TOP
3 PRODUCTS
FROM EACH
DIVISION BY
TOTAL
QUANTITY
SOLD IN A
GIVEN YEAR**

with cte1 as

```
(SELECT
    p.division, p.product,
    sum(sold_quantity) as total_qty
  FROM fact_sales_monthly s
  JOIN dim_product p
    on p.product_code=s.product_code
  WHERE fiscal_year=2021
  Group BY p.product, p.division),
```

cte2 as

```
(SELECT
    *,
    dense_rank() over (partition by division
                        order by total_qty desc) as drnk
  from cte1)
```

SELECT * FROM cte2 WHERE drnk<=3;

13. GENERATE A NET SALES % REPORT OF CUSTOMERS IN DIFFERENT REGIONS

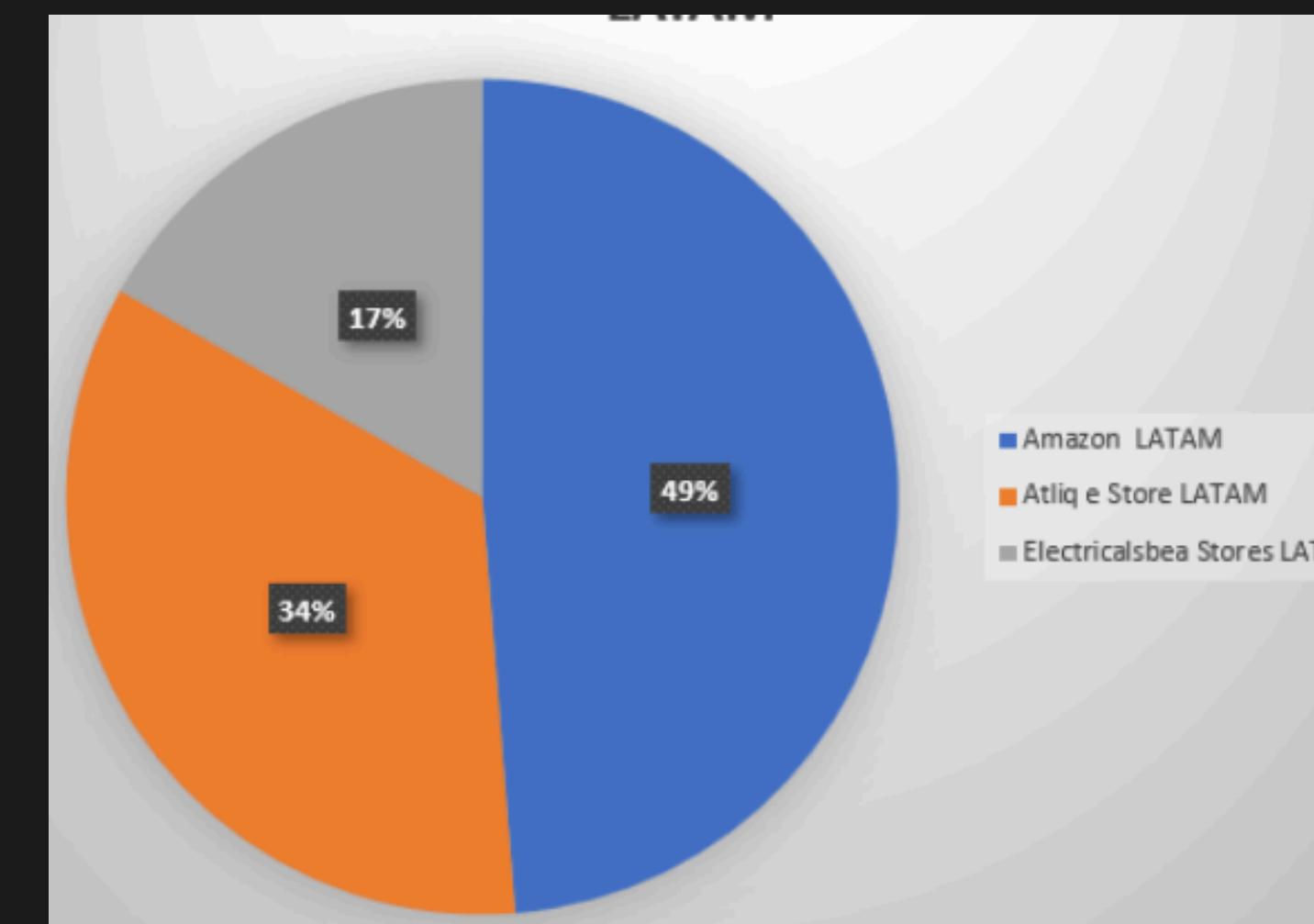
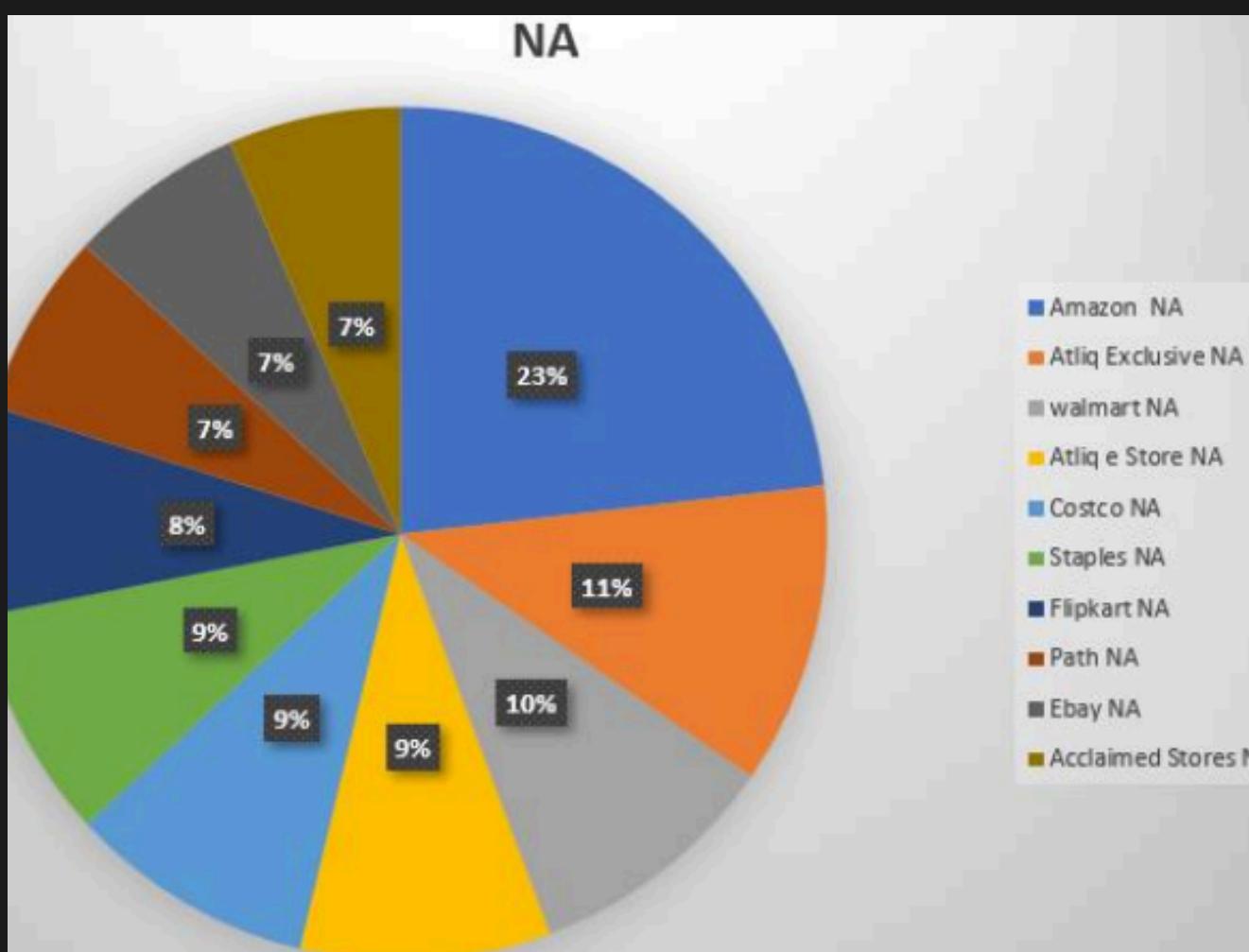
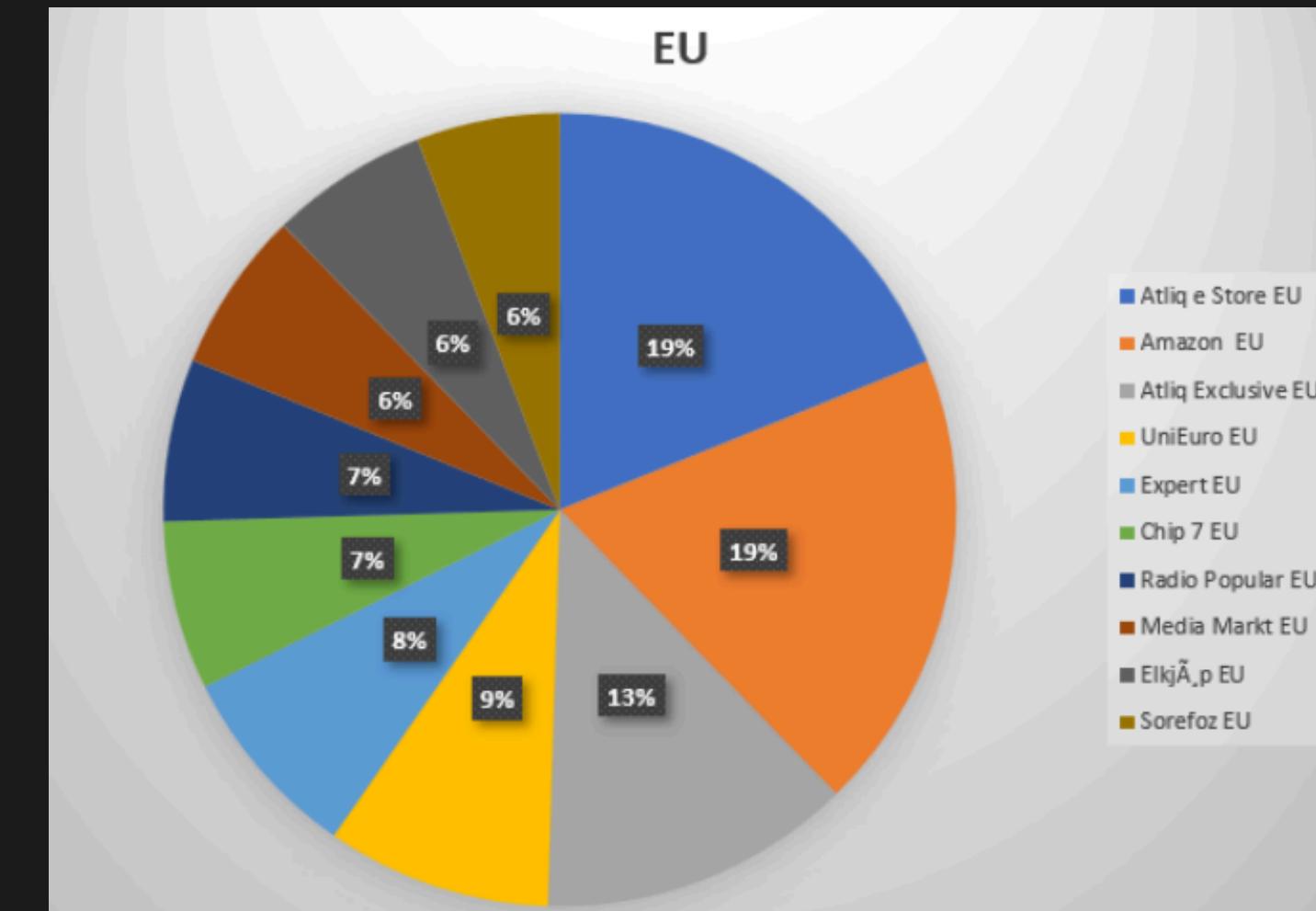
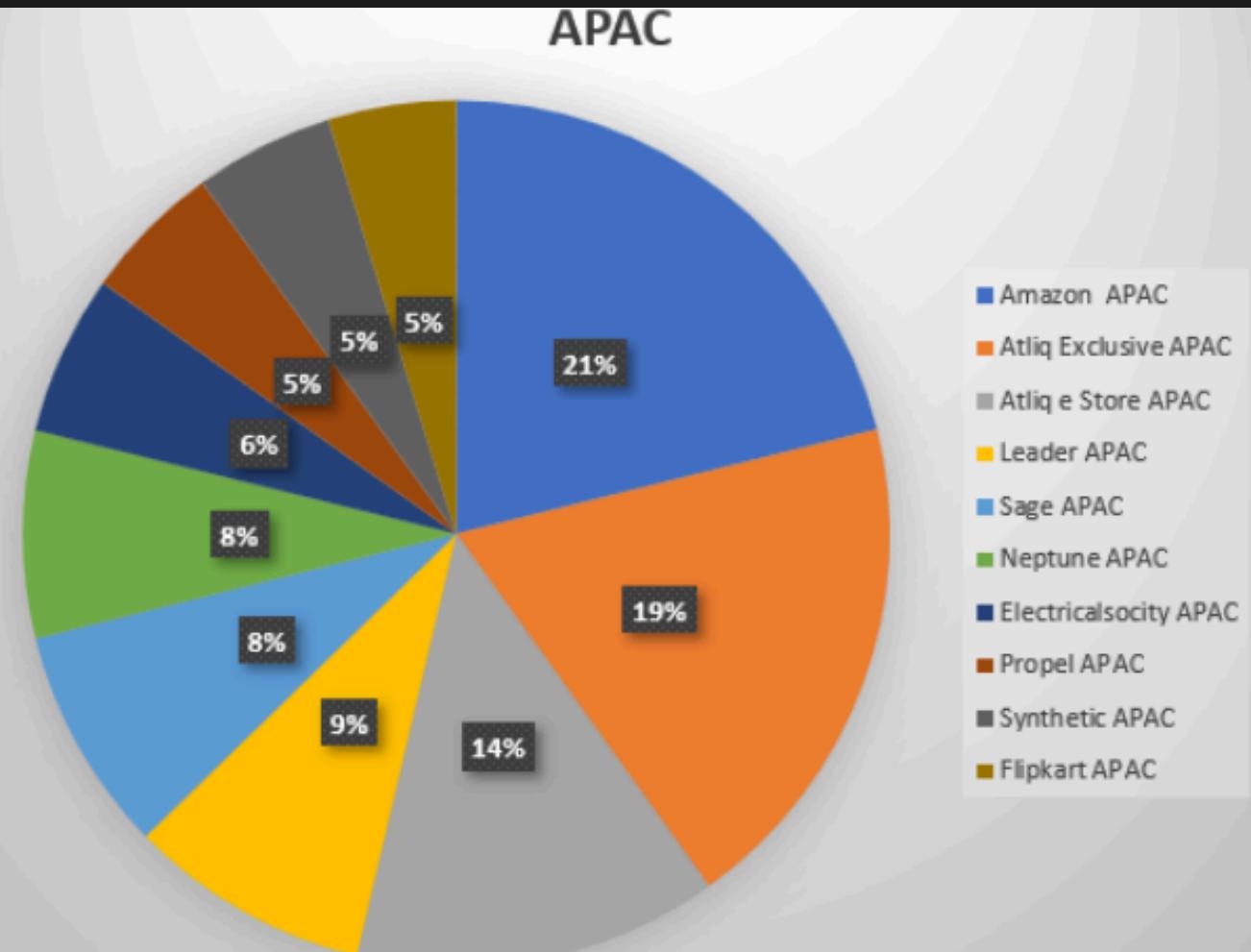
With cte1 as

```
(SELECT  
    c.customer, c.region,  
    ROUND(SUM(Net_sales)/1000000,2) as net_sales_mln  
FROM gdb0041.net_sales n  
JOIN dim_customer c  
ON n.customer_code = c.customer_code  
WHERE 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_share_region  
from cte1  
order by region, net_sales_mln desc;
```

	customer	region	net_sales_mln	pct_share_region
▶	Amazon	APAC	57.41	12.99
	Atiq Exclusive	APAC	51.58	11.67
	Atiq 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
	Electricalsociety	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

14.

MARKET SHARE % - TOP CUSTOMERS IN DIFFERENT REGIONS



CONCLUSION

- ATLIQ HARDWARE ACHIEVED RECORD SALES IN **2022**.
- INDIA WAS THE LARGEST MARKET IN 2021 WITH SALES OF **\$210.67M**
- AMAZON GENERATED THE HIGHEST NET SALES IN 2021 WITH **\$109.03M**
- THE AQ BZ ALL-IN-ONE WAS THE TOP-SELLING PRODUCT IN 2021 WITH THE SALES OF **\$33.75M**
- AMAZON CAPTURES THE TOP MARKET SHARE% IN **APAX, LATAM & NA REGIONS.**
- ATLIQ ESTORE TOPPED THE CHART IN **EU REGION.**



THANK
FOR
ATTENTION

YOU
YOUR