Project Description

- **Company Overview** : AtliQ Hardware is a company which supplies computer hardware and peripherals to many of clients.

- **Project Objective** : To analyze sales data, forecast accuracy, and market performance for AtliQ Hardware using SQL queries.

- **Scope of Work** : The project involved generating various sales and forecast reports for fiscal year 2021.

AGENDA

Task 1. Croma India Product wise sales report for fiscal year 2021.

Task 2. Gross Monthly Total Sales report for Croma India Customer.

Task 3. Generate a yearly report for Croma India where there are two columns.

Task 4. Get top 5 market by net sales in fiscal year 2021.

Task 5. Get top 5 products by net sales in fiscal year 2021.

Task 6. Get top 5 customers by net sales in fiscal year 2021.

Task 7. Retrieve the top 2 markets in every region by their gross sales   amount in FY=2021.

Task 8. Net Sale Percentage Share Global.

Task. 9. Net Sales Percentage Share by Region.

Task. 10. Forecast Accuracy for all customers for a given fiscal year.

Task 1. Croma India Product wise sales report for fiscal year 2021.

```
-- Gross Monthly Total Sales report for Croma India Customer --
SELECT
    s.date,
    ROUND(SUM(g.gross_price * s.sold_quantity), 2) AS total_gross_sales
FROM
    fact_sales_monthly s
        JOIN
    fact_gross_price g ON g.product_code = s.product_code
        AND g.fiscal_year = GET_FISCAL_YEAR(s.date)
WHERE
    customer_code = 90002002
GROUP BY s.date
ORDER BY s.date;
-- 90002002 customer_code for Croma India
-- get_fiscal_year is user defined function
```
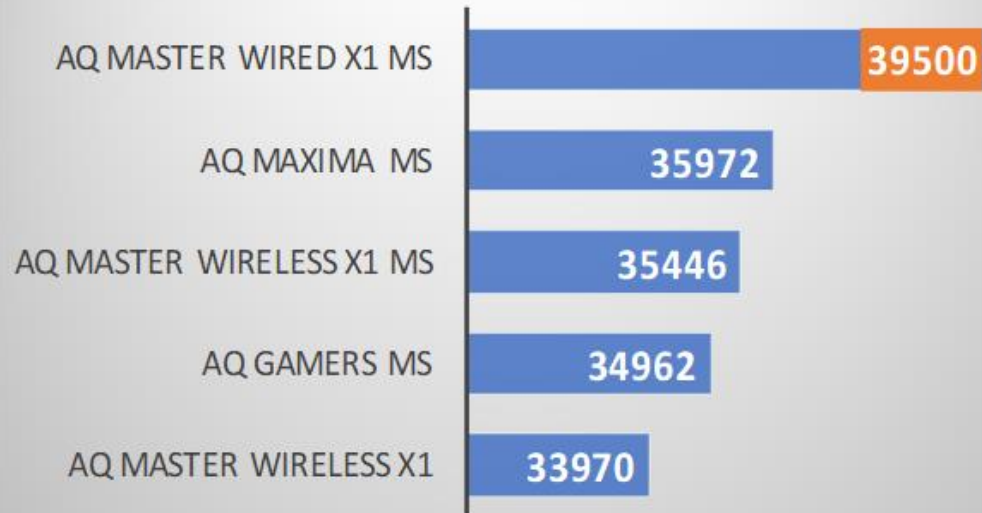
date	product_code	product	variant	sold_quantity	gross_price	gross_price_total
2020-09-01	A0118150101	AQ Dracula HDD – 3.5 I...	Standard	202	19.0573	3849.57
2020-09-01	A0118150102	AQ Dracula HDD – 3.5 I...	Plus	162	21.4565	3475.95
2020-09-01	A0118150103	AQ Dracula HDD – 3.5 I...	Premium	193	21.7795	4203.44
2020-09-01	A0118150104	AQ Dracula HDD – 3.5 I...	Premium Plus	146	22.9729	3354.04
2020-09-01	A0219150201	AQ WereWolf NAS Inter...	Standard	149	23.6987	3531.11
2020-09-01	A0219150202	AQ WereWolf NAS Inter...	Plus	107	24.7312	2646.24
2020-09-01	A0220150203	AQ WereWolf NAS Inter...	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
2020-09-01	A0418150106	AQ Mforce Gen X	Plus 3	48	19.9365	956.95
2020-09-01	A0519150201	AQ Mforce Gen Y	Standard 1	138	22.3984	3090.98
2020-09-01	A0519150202	AQ Mforce Gen Y	Standard 2	72	24.9298	1794.95

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

Task 1. Croma India Product wise sales report for fiscal year 2021.

Top 5 Products on Quantity

Product	Quantity
AQ MASTER WIRED X1 MS	39500
AQ MAXIMA MS	35972
AQ MASTER WIRELESS X1 MS	35446
AQ GAMERS MS	34962
AQ MASTER WIRELESS X1	33970

Top 5 Products on Gross Sales

Product	Gross Sale
AQ BZ ALLIN1	925596.8
AQ QWERTY	760927.47
AQ TRIGGER	691435.12
AQ GEN X	625218.37
AQ GEN Y	616265.01
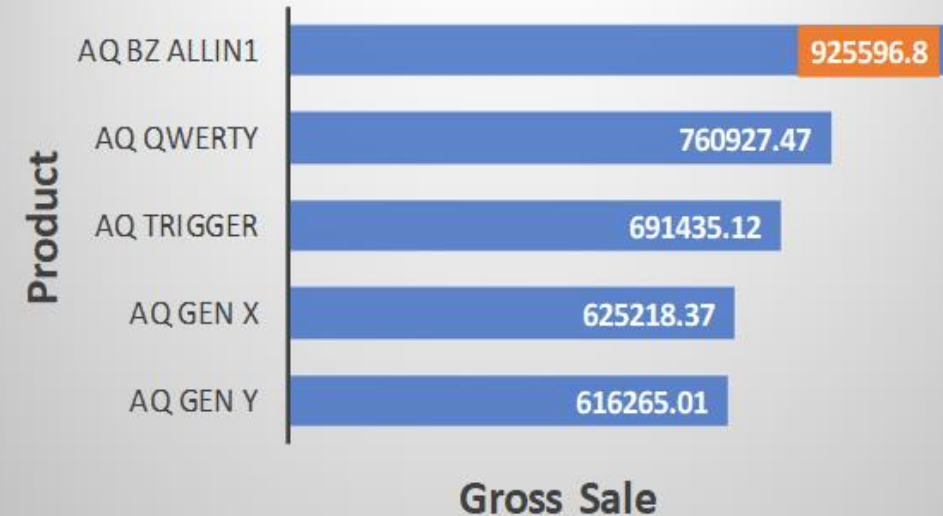
- Top 5 products by quantity sold (25% of sales) only contribute 7% of revenue, while top 5 by gross sales (16% of revenue) only account for 8% of sales volume.
- High-volume products are popular but lower-priced, while high-revenue products have higher margins but sell in lower quantities.
- Focus on promoting high-volume items to drive traffic and upsell high-margin products to maximize profitability.

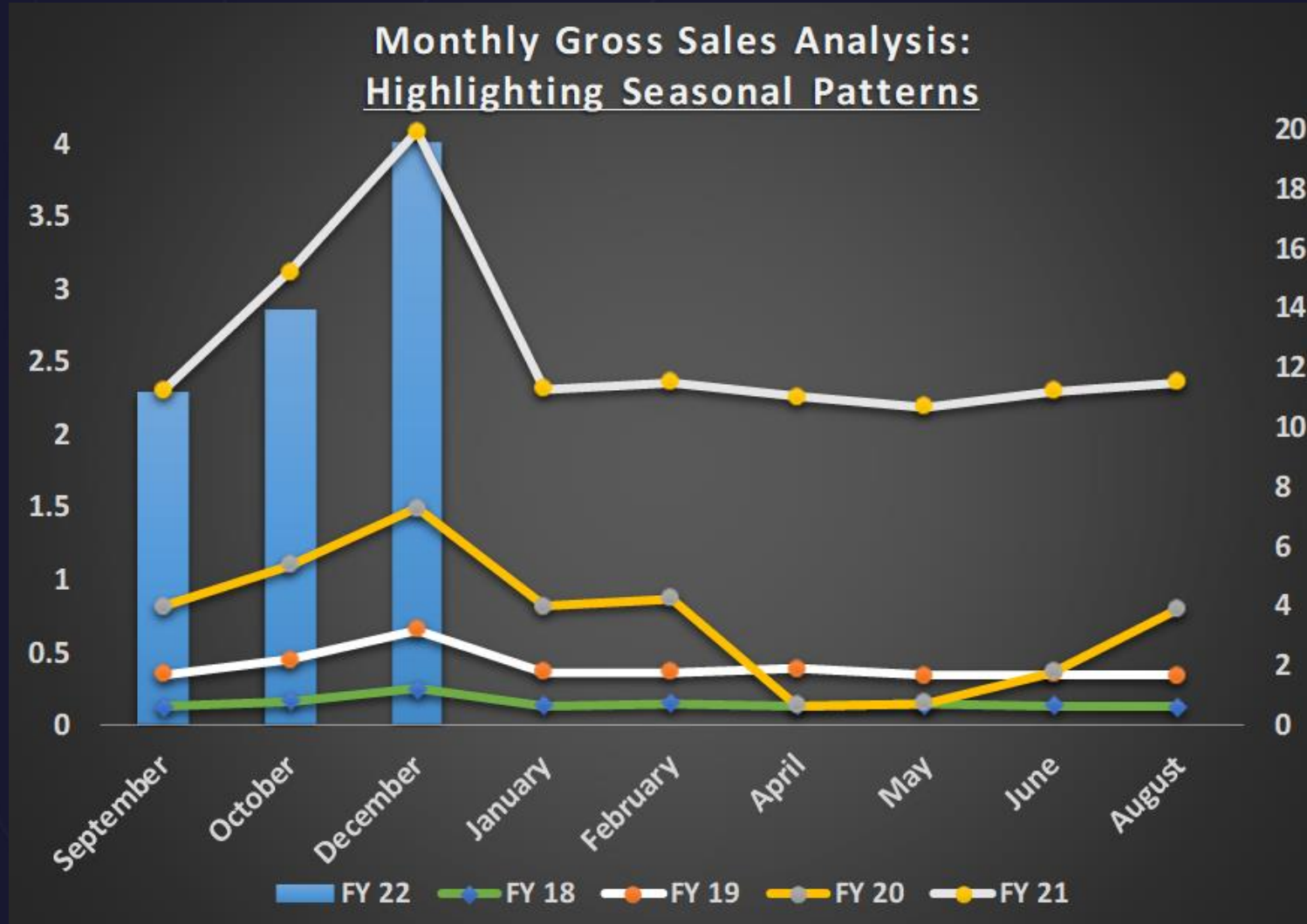# Task 2. Gross Monthly Total Sales report for Croma India Customer

```sql
-- Gross Monthly Total Sales report for Croma India Customer --
SELECT
    s.date,
    ROUND(SUM(g.gross_price * s.sold_quantity), 2) AS total_gross_sales
FROM
    fact_sales_monthly s
        JOIN
    fact_gross_price g ON g.product_code = s.product_code
        AND g.fiscal_year = GET_FISCAL_YEAR(s.date)
WHERE
    customer_code = 90002002
GROUP BY s.date
ORDER BY s.date;
-- 90002002 customer_code for Croma India
-- get_fiscal_year is user defined function
```

date	total_gross_sales
2017-09-01	122407.56
2017-10-01	162687.57
2017-12-01	245673.80
2018-01-01	127574.74
2018-02-01	144799.52
2018-04-01	130643.90
2018-05-01	139165.10
2018-06-01	125735.38

Task 2. Gross Monthly Total Sales report for Croma India Customer

Monthly Gross Sales Analysis: Highlighting Seasonal Patterns

- There are consistent peaks in gross sales every October and December across all fiscal years.

- This pattern indicates strong seasonal demand during these months, likely due to festive seasons and holiday sales.

- Management can capitalize on this by planning marketing campaigns, promotions, and inventory stock-ups ahead of these peak periods to maximize sales.

Task 3. Generate a yearly report for Croma India where there are two columns : fiscal_year and total gross sales amount In that year

```
                                        Task - 3
-- Yearly Total Gross Sales report for Croma India Customer --
SELECT
    GET_FISCAL_YEAR(s.date) AS fiscal_year,
    ROUND(SUM(g.gross_price * s.sold_quantity), 2) AS yearly_sales
FROM
    fact_sales_monthly s
        JOIN
    fact_gross_price g ON g.product_code = s.product_code
        AND g.fiscal_year = GET_FISCAL_YEAR(s.date)
WHERE
    customer_code = 90002002
GROUP BY GET_FISCAL_YEAR(s.date)
ORDER BY fiscal_year;

-- 90002002 customer_code for Croma India
-- get_fiscal_year is user defined function
```

Yearly Gross Sales Trend

- 2018 — 1.32 M
- 2019 — 3.56 M
- 2020 — 6.50 M
- 2021 — 23.22 M
- 2022 — 44.64 M
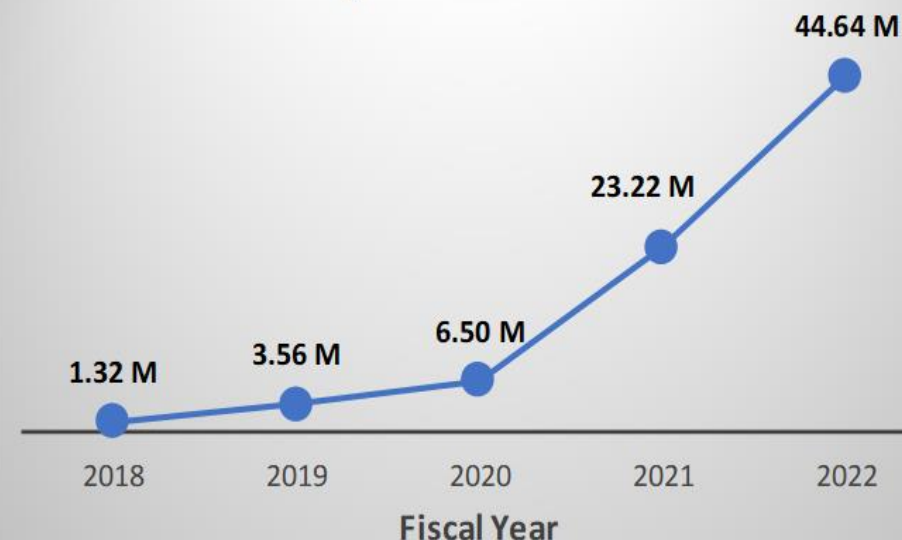
Fiscal Year

fiscal_year	yearly_sales
2018	1324097.44
2019	3555079.02
2020	6502181.91
2021	23216512.22
2022	44638198.92

- Croma India's sales grew from 1.32M in 2018 to 44.64M in 2022, with a CAGR of 131%, highlighting strong market demand for AtliQ Hardware's products.
- The increase in distinct products from 22 in 2018 to 68 in 2021 correlated with substantial sales growth, emphasizing the role of product variety in driving revenue.
- Despite the product count plateauing at 68 in 2021-2022, sales continued to rise, indicating that focusing on product quality and optimization rather than quantity can sustain growth.
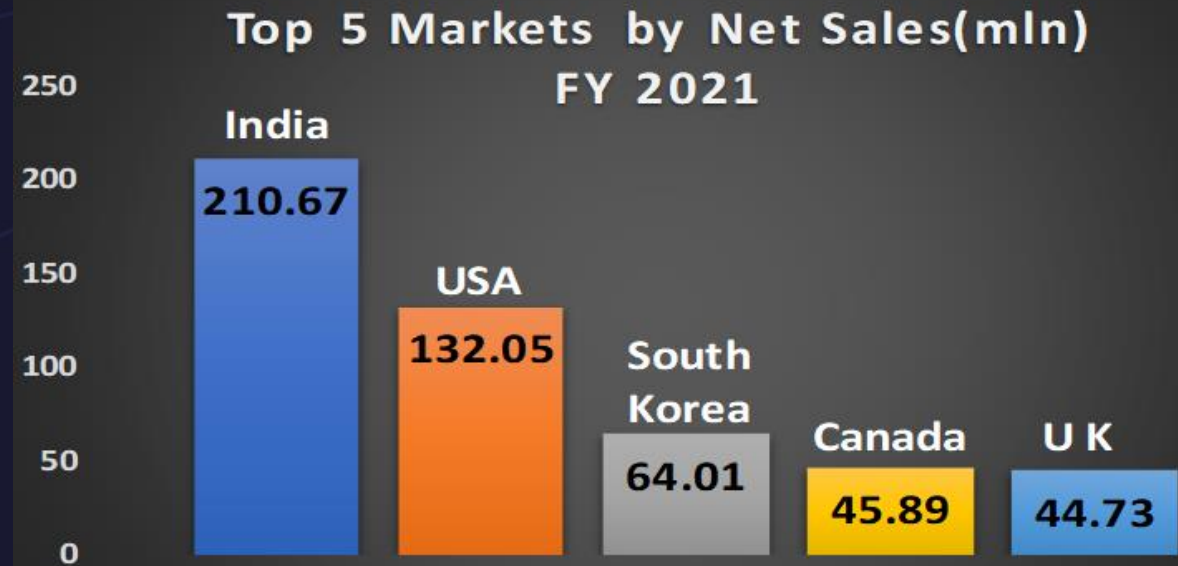
Task 4. Get top 5 market by net sales in fiscal year 2021

```
Task - 4

-- GET Top 5 Markets by Net Sales in Millions for FY 2021 --
SELECT
    market, ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_mln
FROM
    net_sales
WHERE
    fiscal_year = 2021
GROUP BY market
ORDER BY net_sales_mln DESC
LIMIT 5;

-- net_sales is not a physical table, it is a created
-- database view
```


Top 5 Markets by Net Sales(mln) FY 2021

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

- The top 5 markets for FY 2021 contributed 497.35 million, accounting for 60.4% of AtliQ Hardware's total net sales of 823.89 million.

- India and the USA are the largest markets, making up 25.6% and 16.0% of total sales, respectively.
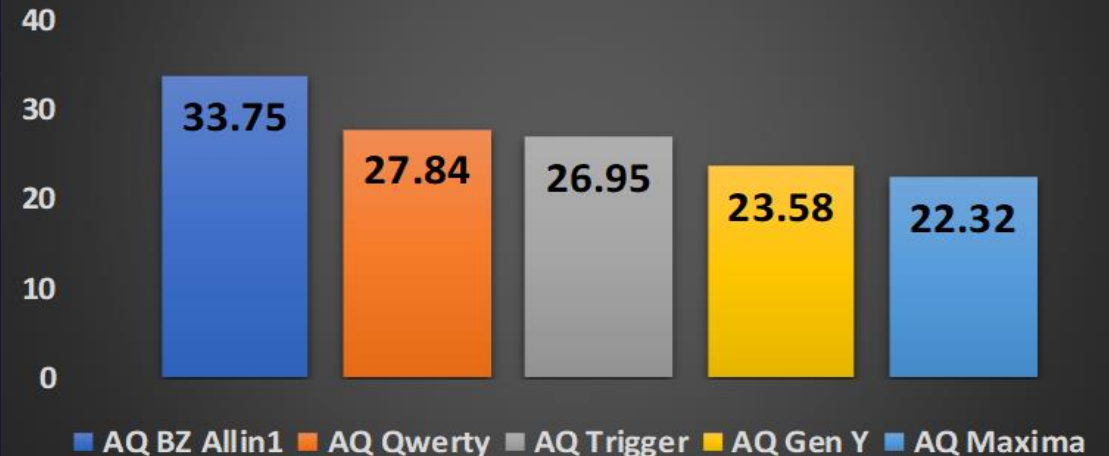
Task 5. Get top 5 products by net sales in fiscal year 2021

```
Task - 5

-- GET Top 5 Products by Net Sales in Millions for FY 2021 --
SELECT
    product, ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_mln
FROM
    net_sales
WHERE
    fiscal_year = 2021
GROUP BY product
ORDER BY net_sales_mln DESC
LIMIT 5;

-- net_sales is not a physical table, it is a created
-- database view
```

Top 5 Products by Net Sales(mln) FY 2021

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

- The top 5 products by net sales in FY 2021 accounted for 134.44 million, representing 16.3% of AtliQ Hardware's total net sales of 823.89 million.

- Management should focus on maintaining and enhancing the performance of these top products while exploring strategies to boost sales across the broader product portfolio.

Task 6. Get top 5 customers by net sales in fiscal year 2021

```sql
Task - 6

-- GET Top 5 Customers by Net Sales in Millions for FY 2021 --
SELECT
    c.customer,
    ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_mln
FROM
    net_sales n
        JOIN
    dim_customer c ON c.customer_code = n.customer_code
WHERE
    fiscal_year = 2021
GROUP BY c.customer
ORDER BY net_sales_mln DESC
LIMIT 5;

-- net_sales is not a physical table, it is a created
-- database view
```


Top 5 Customers by Net Sales (mln) FY 2021
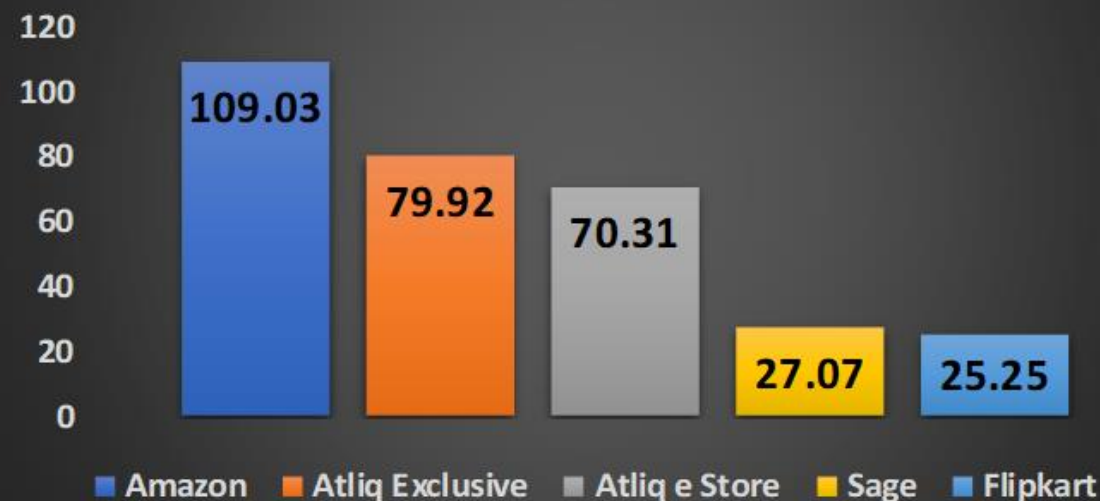
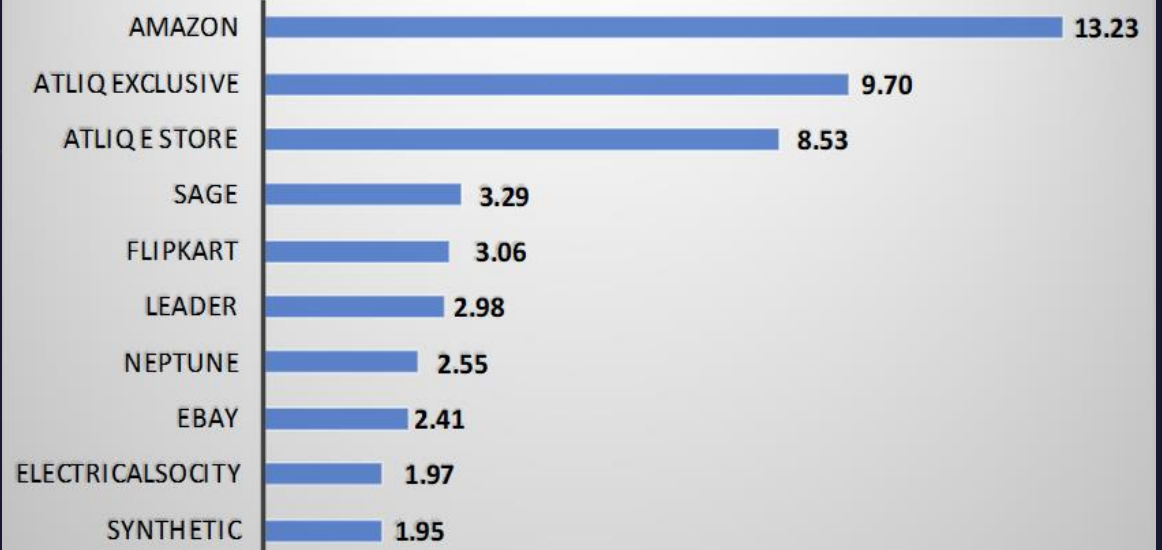| customer	net_sales_mln
Amazon	109.03
Atliq Exclusive	79.92
Atliq e Store	70.31
Sage	27.07
Flipkart	25.25

- The top 5 customers contributed 311.58 million, forming a significant portion(38 %) of AtliQ Hardware's revenue.
- Amazon and AtliQ Exclusive are the largest customers, accounting for 13.2% and 9.7% of total sales, respectively.

Task 7. Net Sale Percentage Share Global

```sql
-- Net Sales %age Share Global --
WITH cte1 as (SELECT
    c.customer,
    ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_mln
FROM
    net_sales n
        JOIN
    dim_customer c ON c.customer_code = n.customer_code
WHERE
    fiscal_year = 2021
GROUP BY c.customer)
SELECT
    *,
    net_sales_mln*100/sum(net_sales_mln) OVER() as percentage_share
FROM cte1
ORDER BY net_sales_mln DESC;
```

Task - 8

Net Sale % Share Global

	AMAZON	13.23
	ATLIQ EXCLUSIVE	9.70
	ATLIQ E STORE	8.53
	SAGE	3.29
	FLIPKART	3.06
	LEADER	2.98
	NEPTUNE	2.55
	EBAY	2.41
	ELECTRICALSOCITY	1.97
	SYNTHETIC	1.95

| customer	net_sales_mln	percentage_share
Amazon	109.03	13.233402
Atliq Exclusive	79.92	9.700206
Atliq e Store	70.31	8.533803
Sage	27.07	3.285593
Flipkart	25.25	3.064692
Leader	24.52	2.976089
Neptune	21.01	2.550067
Ebay	19.88	2.412914
Electricalsocity	16.25	1.972327
Synthetic	16.10	1.954121
Electricalsytical	15.64	1.898289

Task 8. Net Sales % Share by Region

```sql
-- Net Sales %age Share Regional --
WITH cte1 as (SELECT
    c.customer,
    c.region,
    ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_mln
FROM
    net_sales n
        JOIN
    dim_customer c ON c.customer_code = n.customer_code
WHERE
    fiscal_year = 2021
GROUP BY c.customer,c.region)
SELECT
    *,
    net_sales_mln*100/sum(net_sales_mln) OVER (partition by region) as percentage_share
    FROM cte1
ORDER BY region,net_sales_mln DESC;
```
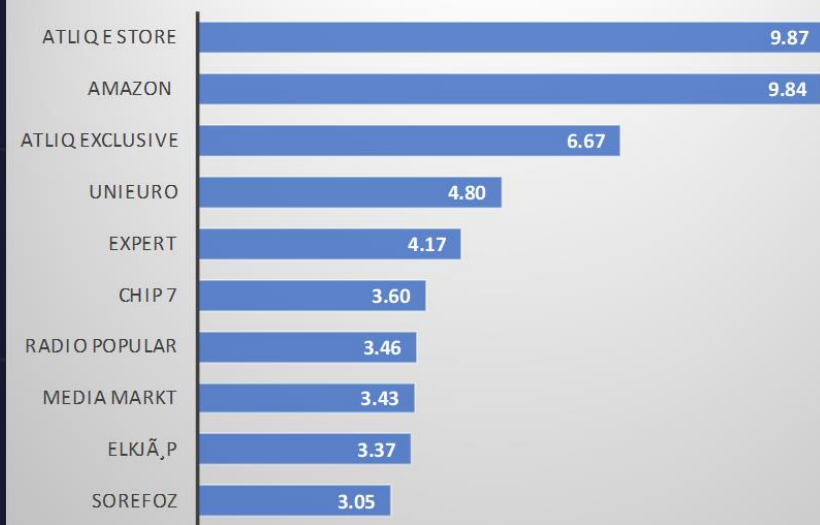
customer	region	net_sales_mln	percentage_share
Amazon	APAC	57.41	12.988688
Atliq Exclusive	APAC	51.58	11.669683
Atliq e Store	APAC	36.97	8.364253
Leader	APAC	24.52	5.547511
Sage	APAC	22.85	5.169683
Neptune	APAC	21.01	4.753394
Electricalsocity	APAC	16.25	3.676471
Synthetic	APAC	14.14	3.199095
Propel	APAC	14.14	3.199095
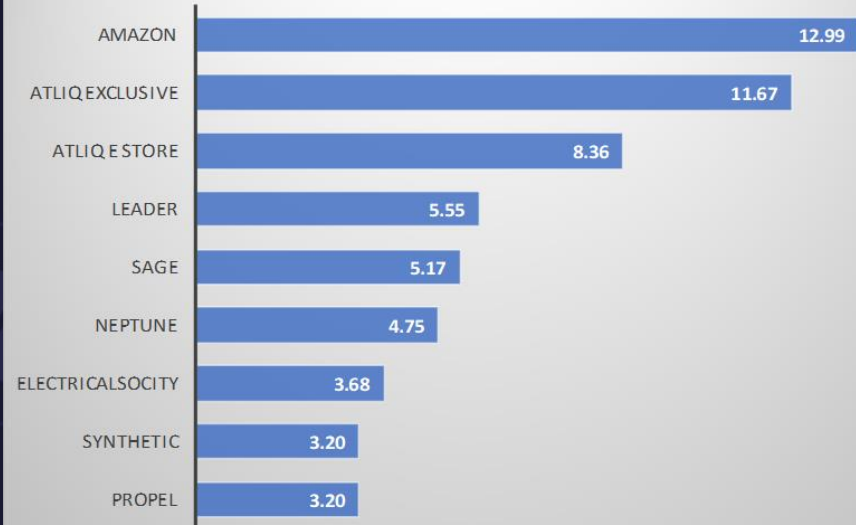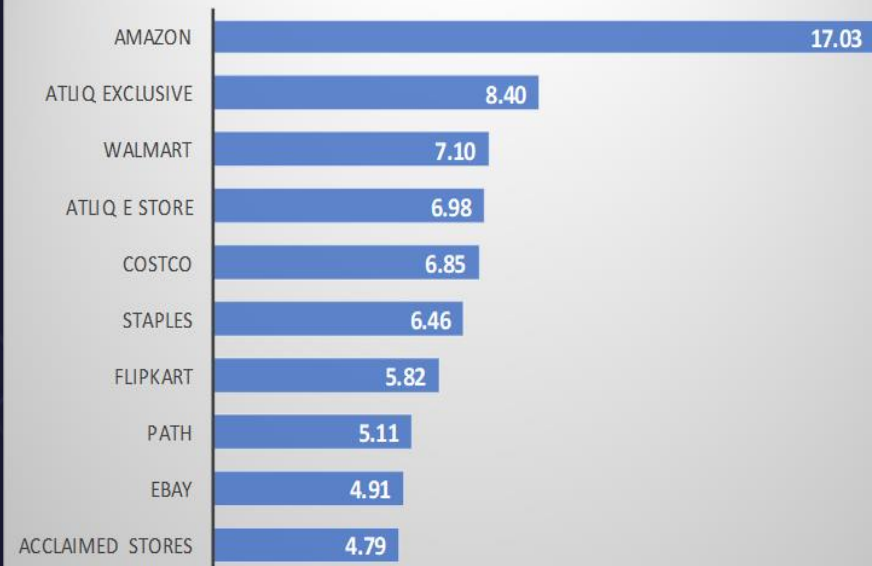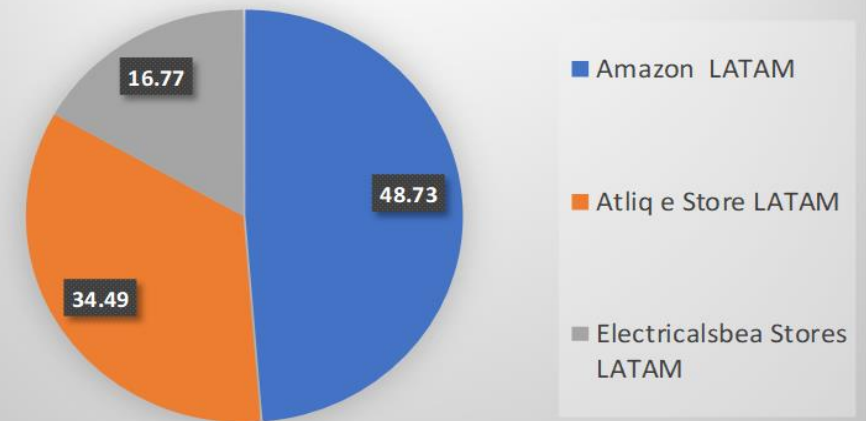
Task 9. Retrieve the top 2 markets in every region by their gross sales amount in FY=2021.

```sql
Task - 10

-- Retrieve the top 2 markets in every region by their gross sales amount in FY=2021--
WITH cte1 as (SELECT
  c.market,
    c.region,
    round(sum(gross_price_total)/1000000,2) as gross_sales_mln
FROM gross_sales g
JOIN dim_customer c
ON c.customer_code = g.customer_code
WHERE fiscal_year = 2021
GROUP BY c.region,c.market
ORDER BY gross_sales_mln DESC),
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

Task 10. Forecast Accuracy report for all customers for a given fiscal year

```sql
-- Forecast Accuracy for all customers for a given fiscal year --
WITH forecast_err_table as (SELECT
  s.customer_code,
    sum(s.sold_quantity) as total_sold_qty,
    sum(s.forecast_quantity) as total_forecast_qty,
    sum(forecast_quantity-sold_quantity) as net_error,
    sum((forecast_quantity-sold_quantity))*100/sum(forecast_quantity) as net_error_pct,
    sum(abs(forecast_quantity-sold_quantity)) as abs_error,
    sum(abs(forecast_quantity-sold_quantity))*100/sum(forecast_quantity) as abs_error_pct
FROM fact_act_est s
WHERE s.fiscal_year=2021
GROUP BY s.customer_code)
SELECT
  e.customer_code,
    c.customer,
    c.market,
    e.total_sold_qty,
    e.total_forecast_qty,
    e.net_error,e.abs_error,
    if(abs_error_pct > 100,0,round((100-abs_error_pct),2)) as forecast_accuracy_pct
FROM forecast_err_table e
JOIN dim_customer c
using (customer_code)
ORDER BY forecast_accuracy_pct desc;
```

customer_code	customer	market	total_sold	total_forecast	net_error	abs_error	forecast_accuracy
90013120	Coolblue	Italy	109547	133532	23985	70467	47.23
70010048	Atliq e Store	Bangladesh	119439	142010	22571	75711	46.69
90023027	Costco	Canada	236189	279962	43773	149303	46.67
90023026	Relief	Canada	228988	273492	44504	146948	46.27
90017051	Forward Stores	Portugal	86823	118067	31244	63568	46.16
90017058	Mbit	Portugal	86860	110195	23335	59473	46.03
90023028	walmart	Canada	239081	283323	44242	153058	45.98
90023024	Sage	Canada	246397	287233	40836	155610	45.82
90013124	Amazon	Italy	110898	136116	25218	73826	45.76
90015146	Mbit	Norway	147152	210507	63355	114189	45.76

THANKYOU