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ABOUT ATLIQ AND PROBLEM STATEMENT

AtliQ Hardware, a prominent company renowned for its global presence, specializes in manufacturing PCs, printers, mice, and computers

The increased size of Excel files has resulted in performance issues, causing delays and inefficiencies. AtliQ Hardware has initiated a project to address this challenge, forming a team of data analysts. Leveraging MySQL as their database management system, the team aims to extract valuable insights from the data. These insights will empower the company to improve decision-making and streamline operations, leading to enhanced overall performance.

PROJECT OVERVIEW

This project aims to analyze and derive valuable insights from the provided database, encompassing sales, products, customers, and regions data for Atliq Hardware. The objective is to address specific inquiries regarding sales reports, market analysis, customer behavior, and supply chain forecasting.

TABLES

Tables in SQL are database objects that store data in a structured manner. They consist of rows and columns, where each column represents an attribute, and each row contains specific data values

VIEWS

Views in SQL are virtual tables based on the result of a SELECT query. They provide a way to represent specific data subsets or join operations without altering the underlying database structure.

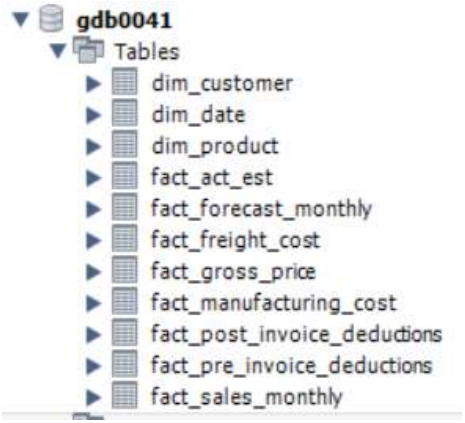
FUNCTIONS

Functions in SQL are reusable pieces of code that perform a specific operation on the database. They can accept parameters, process data, and return a result. Examples include mathematical operations and date functions.

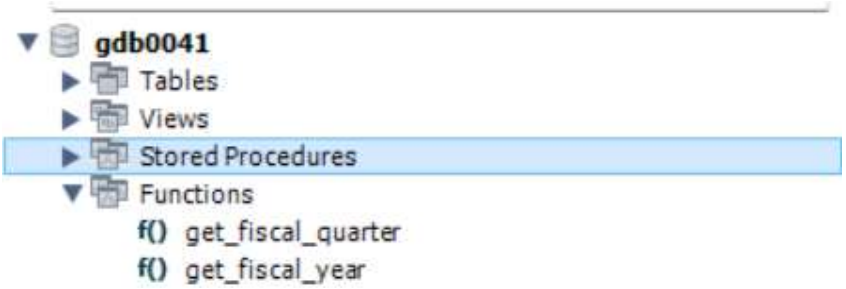
STORED PROCEDURES

Stored Procedures in SQL are precompiled sets of one or more SQL statements that are stored in the database. They can be executed by invoking the procedure's name and are useful for encapsulating complex logic or performing repetitive tasks

TABLES

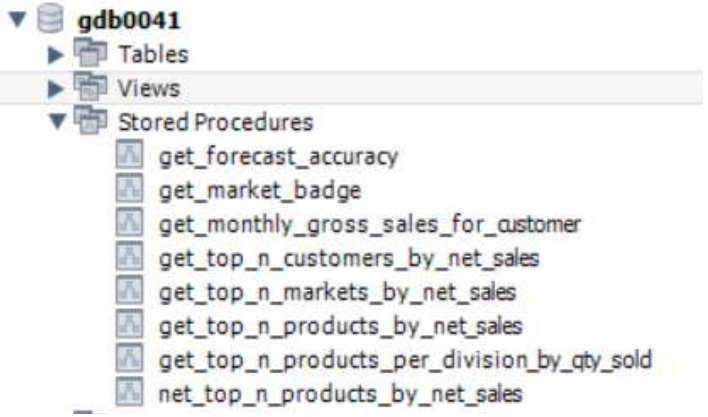


FUNCTIONS



VIEWS

STORED PROCEDURES



2021 SALES REPORT FOR CROMA CATEGORIZED BY PRODUCT

SQL QUERY

```sql
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 s
JOIN dim_product p
ON p.product_code=s.product_code
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" and
     get_fiscal_year(date)=2021
ORDER BY date DESC
```

OUTPUT

date	product_code	product	variant	sold_quantity	gross_price	gross_price_total
2021-08-01	A7321160303	AQ Wi Power Dx3	Premium	158	42.8483	6770.03
2021-08-01	A7321160302	AQ Wi Power Dx3	Plus	193	43.9446	8481.31
2021-08-01	A7321160301	AQ Wi Power Dx3	Standard	459	40.7954	18725.09
2021-08-01	A7220160203	AQ Wi Power Dx2	Premium	586	37.4784	21962.34
2021-08-01	A7220160202	AQ Wi Power Dx2	Plus	264	35.2053	9294.20
2021-08-01	A7219160201	AQ Wi Power Dx2	Standard	531	32.9575	17500.43
2021-08-01	A7119160103	AQ Wi Power Dx1	Premium	137	28.7736	3941.98
2021-08-01	A7119160102	AQ Wi Power Dx1	Plus	454	29.9264	13586.59
2021-08-01	A7118160101	AQ Wi Power Dx1	Standard	251	29.6712	7447.47
2021-08-01	A6819160203	AQ Pen Drive DRC	Premium	436	5.0984	2222.90
2021-08-01	A6818160202	AQ Pen Drive DRC	Plus	1538	3.8531	5926.07
2021-08-01	A6818160201	AQ Pen Drive DRC	Standard	774	2.9990	2321.23
2021-08-01	A6720160103	AQ Pen Drive 2 IN 1	Premium	433	4.4411	1923.00
2021-08-01	A6620160501	AQ Clx3	Standard	339	22.8530	7747.17
2021-08-01	A6520160403	AQ Clx2	Premium	940	21.2830	20006.02
2021-08-01	A6520160402	AQ Clx2	Plus	110	20.1650	2218.15
2021-08-01	A6519160401	AQ Clx2	Standard	778	20.2889	15784.76
2021-08-01	A6419160303	AQ Clx1	Premium	772	19.3342	14926.00
2021-08-01	A6419160302	AQ Clx1	Plus	926	19.6723	18216.55
2021-08-01	A6419160301	AQ Clx1	Standard	572	17.8043	10184.06

MONTHLY TOTAL GROSS SALES REPORT FOR CROMA

SQL QUERY

```
SELECT
s.date,
sum(round(g.gross_price*s.sold_quantity,2)) as gross_price_total
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 ASC
```

OUTPUT

date	gross_price_total
2017-09-01	122407.57
2017-10-01	162687.56
2017-12-01	245673.84
2018-01-01	127574.73
2018-02-01	144799.54
2018-04-01	130643.92
2018-05-01	139165.06
2018-06-01	125735.36
2018-08-01	125409.90
2018-09-01	343337.14
2018-10-01	440562.10
2018-12-01	653944.72
2019-01-01	359025.06
2019-02-01	356607.19
2019-04-01	379549.74
2019-05-01	340152.29
2019-06-01	343792.08
2019-08-01	338108.87
2019-09-01	808250.42
2019-10-01	1092622.30
2019-12-01	1488174.01
2020-01-01	812929.77

ANNUAL GROSS SALES OVERVIEW FOR CROMA INDIA

SQL QUERY

```
SELECT
get_fiscal_year(s.date) as Fiscal_year,
sum(round(g.gross_price*s.sold_quantity,2)) as gross_price_total
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 get_fiscal_year(s.date) ASC
```

OUTPUT

Fiscal_year	gross_price_total
2018	1324097.48
2019	3555079.19
2020	6502182.12
2021	23216512.73
2022	44638199.11

KEY MARKETS AND PRIME CUSTOMERS IN THE FINANCIAL YEAR -2021'

CUSTOMERS

SQL QUERY

```sql
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 c.customer
    order by net_sales_mln desc
    limit 5
```

OUTPUT

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

KEY MARKETS AND PRIME CUSTOMERS IN THE FINANCIAL YEAR -2021'

MARKETS

SQL QUERY

```
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
```

OUTPUT

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

% OF NET SALES CONTRIBUTED BY CUSTOMERS IN THE MARKET SHARE

SQL QUERY

```sql
with cte1 as (
        select
            customer,
            round(sum(net_sales)/1000000,2) as net_sales_mln
            from net_sales s
            join dim_customer c
            on s.customer_code=c.customer_code
            where s.fiscal_year=2021
            group by customer)
    select
            *,
            net_sales_mln*100/sum(net_sales_mln) over() as pct_net_sales
    from cte1
    order by net_sales_mln desc
```

OUTPUT

customer	net_sales_mln	pct_net_sales
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
Electricalslytical	15.64	1.898289
Acclaimed Sto...	14.32	1.738075
Propel	14.14	1.716228
Novus	12.91	1.566938
Expression	12.90	1.565724
Reliance Digital	12.75	1.547518
walmart	12.63	1.532953
Costco	12.19	1.479548
Staples	11.49	1.394587
Girias	11.30	1.371526

% OF MARKET SHARE BY REGION BASED ON NET SALES

SQL QUERY

```
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
            *,
            net_sales_mln*100/sum(net_sales_mln)
            over (partition by region) as pct_share_region
    from cte1
    order by region, pct_share_region desc
```

OUTPUT

customer	region	net_sales_mln	pct_share_region
Acclaimed Sto...	APAC	5.79	1.309955
Taobao	APAC	4.31	0.975113
Digimarket	APAC	3.97	0.898190
Forward Stores	APAC	3.83	0.866516
Insight	APAC	3.61	0.816742
Sound	APAC	3.44	0.778281
Surface Stores	APAC	2.78	0.628959
Logic Stores	APAC	2.21	0.500000
Epic Stores	APAC	1.93	0.436652
Path	APAC	1.92	0.434389
Control	APAC	1.62	0.366516
Nomad Stores	APAC	1.55	0.350679
All-Out	APAC	1.06	0.239819
Electricalsbea...	APAC	0.95	0.214932
Flawless Stores	APAC	0.90	0.203620
Info Stores	APAC	0.89	0.201357
Atliq e Store	EU	19.83	9.874514
Amazon	EU	19.77	9.844637
Atliq Exclusive	EU	13.39	6.667663
UniEuro	EU	9.63	4.795339
Expert	EU	8.38	4.172891
Chip 7	EU	7.23	3.600239
Radio Popular	EU	6.95	3.460811
Media Markt	EU	6.88	3.425954

HIGHEST GROSS SALES IN EACH REGION'S TOP 2 MARKETS

SQL QUERY

```
with cte1 as (
        select
            c.market,
            c.region,
            round(sum(gross_price_total)/1000000,2) as gross_sales_mln
            from gross_sales s
            join dim_customer c
            on c.customer_code=s.customer_code
            where fiscal_year=2021
            group by 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
```

OUTPUT

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

SUPPLY CHAIN – FORECAST QUANTITY -SQL QUERY

```sql
with forecast_err_table as (
            select
                 s.customer_code as customer_code,
                 c.customer as customer_name,
                 c.market as market,
                 sum(s.sold_quantity) as total_sold_qty,
                 sum(s.forecast_quantity) as total_forecast_qty,
                 sum(s.forecast_quantity-s.sold_quantity) as net_error,
                 round(sum(s.forecast_quantity-s.sold_quantity)*100/sum(s.forecast_quantity),1) as net_error_pct,
                 sum(abs(s.forecast_quantity-s.sold_quantity)) as abs_error,
                 round(sum(abs(s.forecast_quantity-sold_quantity))*100/sum(s.forecast_quantity),2) as abs_error_pct
            from fact_act_est s
            join dim_customer c
            on s.customer_code = c.customer_code
            where s.fiscal_year=2021
            group by customer_code
    )
    select
            *,
            if (abs_error_pct > 100, 0, 100.0 - abs_error_pct) as forecast_accuracy
    from forecast_err_table
        order by forecast_accuracy desc;
```

SUPPLY CHAIN – FORECAST QUANTITY -OUTPUT

customer_code	customer_name	market	total_sold_qty	total_forecast_c	net_error	net_error_pct	abs_error	abs_error_	forecast_accuracy
90027207	Amazon	Brazil	32354	44608	11993	26.9	24599	55.14	44.86
90026205	Amazon	Mexico	35030	29882	-5110	-17.1	18510	61.94	38.06
90025209	Electricalsbea Stores	Columbia	13178	15428	2065	13.4	8051	52.18	47.82
90024184	Amazon	Chile	24121	21164	-2939	-13.9	12645	59.75	40.25
90024183	Electricalsbea Stores	Chile	22229	20670	-1583	-7.7	12399	59.99	40.01
90023030	Amazon	Canada	230055	260030	29968	11.5	146186	56.22	43.78
90023029	Staples	Canada	221909	268692	46767	17.4	151139	56.25	43.75
90023028	walmart	Canada	239081	283323	44233	15.6	153039	54.02	45.98
90023027	Costco	Canada	236189	279962	43760	15.6	149274	53.32	46.68
90023026	Relief	Canada	228988	273492	44495	16.3	146921	53.72	46.28
90023025	Premium Stores	Canada	220808	266351	45530	17.1	146208	54.89	45.11
90023024	Sage	Canada	246397	287233	40835	14.2	155585	54.17	45.83
90023023	Amazon	Canada	371184	441346	70162	15.9	248034	56.20	43.80
90023022	Nomad Stores	Canada	225182	264886	39702	15.0	145510	54.93	45.07
90022083	Ebay	USA	500727	431049	-69678	-16.2	271498	62.99	37.01
90022082	Amazon	USA	492326	413788	-78538	-19.0	263364	63.65	36.35
90022081	Amazon	USA	777382	641467	-135915	-21.2	419293	65.36	34.64
90022080	Staples	USA	513823	444777	-69046	-15.5	287308	64.60	35.40
90022079	walmart	USA	516429	436889	-79540	-18.2	285946	65.45	34.55
90022078	Costco	USA	490310	421956	-68354	-16.2	272046	64.47	35.53
90022077	Radio Shack	USA	467929	420833	-47096	-11.2	258990	61.54	38.46
90022076	Circuit City	USA	530884	446132	-84752	-19.0	289910	64.98	35.02
90022075	BestBuy	USA	505147	431868	-73279	-17.0	279385	64.69	35.31
90022074	Flipkart	USA	629907	525718	-104189	-19.8	350847	66.74	33.26