MYSQL Case Study

by Rashi Singla

Overview

- Atliq Hardwares is one of the leading computer hardware producers in India and well expanded in other countries too.
- However, the management noticed that they do not get enough insights to make quick and smart data-informed decisions.
- They want to expand their data analytics team by adding several junior data analysts.
- Tony Sharma, their data analytics director wanted to hire someone who is good at both tech and soft skills.

1. Provide the list of markets in which the customers “AtliQ Exclusive” operates its business in APAC region.

```
select market,customer,region
from dim_customer
where customer = 'Atliq Exclusive' and region = 'APAC'
group by market;
```

market	customer	region
India	Atliq Exclusive	APAC
Indonesia	Atliq Exclusive	APAC
Japan	Atliq Exclusive	APAC
Philiphines	Atliq Exclusive	APAC
South Korea	Atliq Exclusive	APAC
Australia	Atliq Exclusive	APAC
Newzealand	Atliq Exclusive	APAC
Bangladesh	Atliq Exclusive	APAC

Insights:

Here is the list of the market in which the customers “AtliQ Exclusive ” operated its business in APAC region

2. What is the percentage of unique product increase in 2021 vs 2020?

```
select X.A as unique_product_2020, Y.B as unique_product_2021 , round((B-A)*100/A,2) as  '% change'
from (
(select count(distinct product_code) as 'A' from fact_sales_monthly where fiscal_year = 2020) as X,
(select count(distinct product_code) as 'B' from fact_sales_monthly where fiscal_year = 2021) as Y
) ;
```

	unique_product_2020	unique_product_2021	% change
▶	245	334	36.33

Insights:

The Demand and production both are increased

3. Provide a report with all the unique product counts for each segment and sort them in desc order of product count.

```
select segment , count(product) 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

Insights:

1. Segments Notebook, Accessories , Peripherals are showing significant growth as compared to Desktop, Storage , Networking.
2. The Notebook , Accessories ,Peripherals are contribute 83% of the total Manufactured product.

4. Which Segment had the most increase in unique products in 2020 vs 2021 ?

```
with output1 as (select segment,count(product) as 'product_count_2020'
from dim_product d
join fact_gross_price g
on g.product_code = d.product_code
where fiscal_year = 2020
group by segment),
output2 as (select segment,count(product) as 'product_count_2021'
from dim_product d
join fact_gross_price g
on g.product_code = d.product_code
where fiscal_year = 2021
group by segment)
select output1.segment,output1.product_count_2020,output2.product_count_2021,
Output2.product_count_2021 - output1.product_count_2020 as difference
from Output1 join output2
on output1.segment = output2.segment
order by segment asc;
```

segment	product_count_2020	product_count_2021	difference
Accessories	69	103	34
Desktop	7	22	15
Networking	6	9	3
Notebook	92	108	16
Peripherals	59	75	16
Storage	12	17	5

Insights:

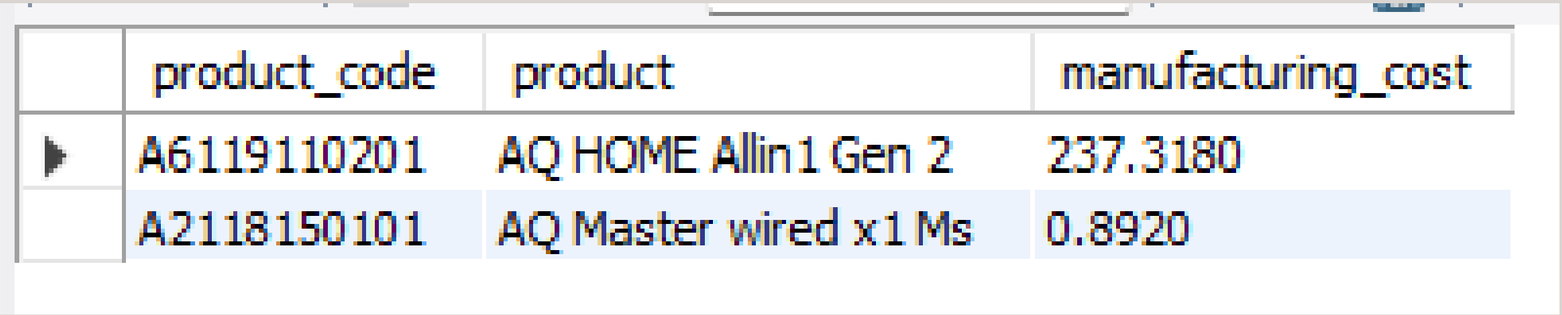
1. Accessories had the largest increase in production.
2. Storage and networking are experiencing slower production growth then other segment.

5. Get the products has the highest and lowest manufacturing cost.

```
(select d.product_code , d.product, f.manufacturing_cost from fact_manufacturing_cost f
join dim_product d on f.product_code = d.product_code
group by d.product order by f.manufacturing_cost desc limit 1 )
UNION
(select d.product_code , d.product, f.manufacturing_cost from fact_manufacturing_cost f
join dim_product d on f.product_code = d.product_code
group by d.product order by f.manufacturing_cost asc limit 1 );
```

Insights:

1. **Personal Desktop - AQ Home** has the highest manufacturing cost.
2. **Mouse - AQ master Wired** has the lowest manufacturing cost



product_code	product	manufacturing_cost
A6119110201	AQ HOME Allin1 Gen 2	237.3180
A2118150101	AQ Master wired x1 Ms	0.8920

6. Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for fiscal year 2021 and in Indian market ?

```sql
select d.customer_code,customer , round(avg(pre_invoice_discount_pct),4) as 'average'
from dim_customer d
join fact_pre_invoice_deductions f
on d.customer_code = f.customer_code
where market = 'India' and fiscal_year = 2021
group by customer
order by average desc
limit 5;
```

customer_code	customer	average
90002009	Flipkart	0.3083
90002006	Viveks	0.3038
90002003	Ezone	0.3028
90002002	Croma	0.3025
90002004	Vijay Sales	0.2753

Insights:

1. The largest average pre_invioce_discount was given to flipkart.
2. The least average pre_invioce_discount was given to Vijay Sales.

7. Get the complete report of the gross sales amount for the customer “AtliQ Exclusive” for each month.

```sql
select concat(monthname(date),' (',year(f.date),')') as 'month', f.fiscal_year,
round(sum(f.sold_quantity*g.gross_price),2) as 'total_sales'
from fact_sales_monthly f
join dim_customer d
on f.customer_code = d.customer_code
join fact_gross_price g
on g.product_code = f.product_code
where customer = 'Atliq Exclusive'
group by f.date;
```

month	fiscal_year	total_sales
September (2019)	2020	9092670.34
October (2019)	2020	10378637.60
November (2019)	2020	15231894.97
December (2019)	2020	9755795.06
January (2020)	2020	9584951.94
March (2020)	2020	766976.45
April (2020)	2020	800071.95
May (2020)	2020	1586964.48
June (2020)	2020	3429736.57
July (2020)	2020	5151815.40
August (2020)	2020	5638281.83
September (2020)	2021	19530271.30
October (2020)	2021	21016218.21
November (2020)	2021	32247289.79
December (2020)	2021	20409063.18
January (2021)	2021	19570701.71
February (2021)	2021	15986603.89
March (2021)	2021	19149624.92
April (2021)	2021	11483530.30
May (2021)	2021	19204309.41
June (2021)	2021	15457579.66
July (2021)	2021	19044968.82
August (2021)	2021	11324548.34

Insights:

The Demand and production both are increased

8. In which Quarter of 2020, got the maximum total sold quantity ?

```sql
select
case
when date between '2019-09-01' and '2019-11-01' then 1
when date between '2019-12-01' and '2020-02-01' then 2
when date between '2020-03-01' and '2020-05-01' then 3
when date between '2020-06-01' and '2020-08-01' then 4
end as quarter,
sum(sold_quantity) as 'total_quantity'
from fact_sales_monthly
where fiscal_year = 2020
group by Quarter
order by Quarter asc;
```

quarter	total_quantity
1	7005619
2	6649642
3	2075087
4	5042541

Insights:

1. Quarter 1 of FY2020 saw the most units sold overall , while Quarter 3 has the fewest.
2. The Quarter 1 accounts approx. 34 % of the total sold quantity for FY2020.

9. Which channel helped to bring more glass sales in the fiscal year 2021 and the percentage of contributor ?

```sql
with output as (
select channel, round(sum(gross_price * sold_quantity/1000000),2) as 'Gross_sales_mln'
from dim_customer d
join fact_sales_monthly s
on d.customer_code = s.customer_code
join fact_gross_price g
on g.product_code = s.product_code
where s.fiscal_year = 2021
group by channel)
select channel, concat(gross_sales_mln, ' M') as gross_sales_mln ,
concat(round(gross_sales_mln*100/total,2), ' %') as percentage
from (
(select sum(gross_sales_mln) as total from output) A ,
(select * from output ) B
)
order by percentage;
```

channel	gross_sales_mln	percentage
Distributor	297.18 M	11.31 %
Direct	406.69 M	15.48 %
Retailer	1924.17 M	73.22 %

Insights:

1. Channel ‘Retailer’ helped bring the maximum sales to the company with 73.22 % as contributor percentage.
2. Channel ‘Distributor’ makes the least contribution

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6. Get the top 3 product in each division that have a high sold quantity in fiscal_year 2021 ?

```
with output1 as (select division, f.product_code , product , fiscal_year,
sum(sold_quantity) as total_sold_quantity
from dim_product d
join fact_sales_monthly f
on d.product_code = f.product_code
where fiscal_year= 2021
group by product),
Output2 as
(select division, product_code , product, total_sold_quantity,
rank() over (partition by division order by total_sold_quantity desc) as 'Rank_order'
from output1)
select output1.division , output1.product_code, output1.product,output1.total_sold_quantity,output2.rank_order
from output1 join output2
on output1.product_code = output2.product_code
where output2.rank_order in (1,2,3);
```

division	product_code	product	total_sold_quantity	rank_order
N & S	A6818160201	AQ Pen Drive DRC	2034569	1
N & S	A6218160101	AQ Digit SSD	1240149	2
N & S	A6419160301	AQ Clx1	1238683	3
P & A	A2319150301	AQ Gamers Ms	2477098	1
P & A	A2520150501	AQ Maxima Ms	2461991	2
P & A	A2218150201	AQ Master wireless x1 Ms	2448784	3
PC	A4218110201	AQ Digit	135092	1
PC	A4620110601	AQ Gen Y	135031	2
PC	A4419110401	AQ Elite	134431	3

Insights:

Every division has a product with different variant that appears twice in the top 3 products by division list.

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Thank You

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