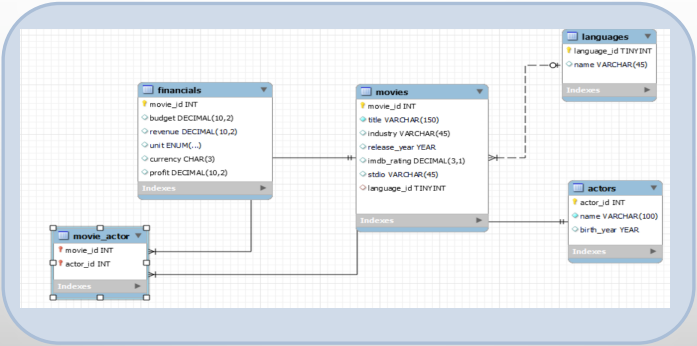
SQL Project

Presented by Cynthia Chinenye Udoye

Introduction

Atliq, a top computer hardware maker, is growing its data team. This team looks at important numbers like Gross Profit and suggests ways to do better, like making more products or offering good deals.

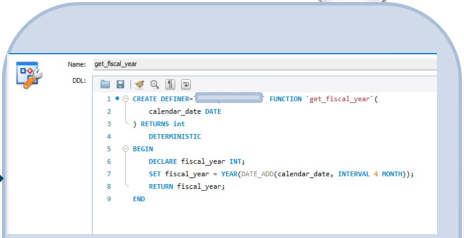
Creation of the database from an Entity Relationship Diagram and what the EER Diagram looks like



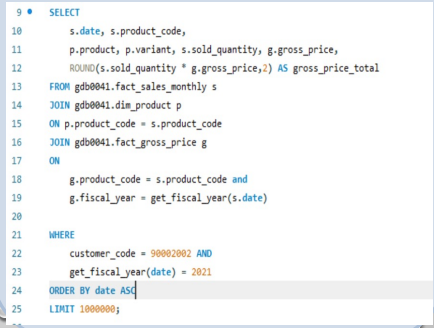
Task 1

Generate a report of individual sales (aggregated on a monthly basis at the product code level) for Croma India Customer for FY=2021 so that I can track individual product sales and run further product analytics on it in excel

First created a User Defined Function for fiscal year



After which we called the function to use to generate the report



```
SELECT
    s.date, s.product_code,
    p.product, p.variant, s.sold_quantity, g.gross_price,
    ROUND(s.sold_quantity * g.gross_price,2) AS gross_price_total
FROM gdb0041.fact_sales_monthly s
JOIN gdb0041.dim_product p
ON p.product_code = s.product_code
JOIN gdb0041.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 ASC
LIMIT 1000000;
```

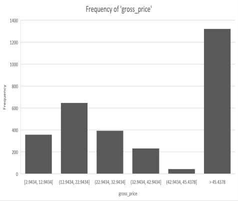
Output in MYSQL

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

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
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
2020-09-01	A0519150203	AQ Mforce Gen Y	Standard 3	38	26.5871	1010.31
2020-09-01	A0519150204	AQ Mforce Gen Y	Plus 1	149	26.1081	3890.11
2020-09-01	A0519150205	AQ Mforce Gen Y	Plus 2	29	29.7008	861.32
2020-09-01	A0519150206	AQ Mforce Gen Y	Plus 3	28	31.2439	874.83
2020-09-01	A0519150207	AQ Mforce Gen Y	Premium 1	171	32.4427	5547.70
2020-09-01	A0519150208	AQ Mforce Gen Y	Premium 2	118	30.5816	3608.63
2020-09-01	A0619150301	AQ Mforce Gen Z	Standard 1	51	30.4696	1553.95
2020-09-01	A0619150302	AQ Mforce Gen Z	Standard 2	191	34.0973	6512.58
2020-09-01	A0620150303	AQ Mforce Gen Z	Standard 3	167	34.2412	5718.28

Output in Excel: Now the user can run any further analysis using the excel as requested

	A	B	C	D	E	F	G
1	date	product_code	product	variant	sold_quantity	gross_price	gross_price_total
2	01/09/2020	A0118150101	AQ Dracula HDD â€" 3.5	Standard	202	19.0573	3849.57
3	01/09/2020	A0118150102	AQ Dracula HDD â€" 3.5	Plus	162	21.4565	3475.95
4	01/09/2020	A0118150103	AQ Dracula HDD â€" 3.5	Premium	193	21.7795	4203.44
5	01/09/2020	A0118150104	AQ Dracula HDD â€" 3.5	Premium Plus	146	22.9729	3354.04
6	01/09/2020	A0219150201	AQ WereWolf NAS Inter	Standard	149	23.6987	3531.11
7	01/09/2020	A0219150202	AQ WereWolf NAS Inter	Plus	107	24.7312	2646.24
8	01/09/2020	A0220150203	AQ WereWolf NAS Inter	Premium	123	23.6154	2904.69
9	01/09/2020	A0320150301	AQ Zion Saga	Standard	146	23.7223	3463.46
10	01/09/2020	A0321150302	AQ Zion Saga	Plus	236	27.1027	6396.24
11	01/09/2020	A0321150303	AQ Zion Saga	Premium	137	28.0059	3836.81
12	01/09/2020	A0418150103	AQ Mforce Gen X	Standard 3	23	19.5235	449.04
13	01/09/2020	A0418150104	AQ Mforce Gen X	Plus 1	82	19.9239	1633.76
14	01/09/2020	A0418150105	AQ Mforce Gen X	Plus 2	86	20.0766	1726.59
15	01/09/2020	A0418150106	AQ Mforce Gen X	Plus 3	48	19.9365	956.95
16	01/09/2020	A0519150201	AQ Mforce Gen Y	Standard 1	138	22.3984	3090.98
17	01/09/2020	A0519150202	AQ Mforce Gen Y	Standard 2	72	24.9298	1794.95
18	01/09/2020	A0519150203	AQ Mforce Gen Y	Standard 3	38	26.5871	1010.31
19	01/09/2020	A0519150204	AQ Mforce Gen Y	Plus 1	149	26.1081	3890.11
20	01/09/2020	A0519150205	AQ Mforce Gen Y	Plus 2	29	29.7008	861.32
21	01/09/2020	A0519150206	AQ Mforce Gen Y	Plus 3	28	31.2439	874.83
22	01/09/2020	A0519150207	AQ Mforce Gen Y	Premium 1	171	32.4427	5547.7
23	01/09/2020	A0519150208	AQ Mforce Gen Y	Premium 2	118	30.5816	3608.63
24	01/09/2020	A0619150301	AQ Mforce Gen Z	Standard 1	51	30.4696	1553.95
25	01/09/2020	A0619150302	AQ Mforce Gen Z	Standard 2	191	34.0973	6512.58
26	01/09/2020	A0620150303	AQ Mforce Gen Z	Standard 3	167	34.2412	5718.28
27	01/09/2020	A0620150304	AQ Mforce Gen Z	Plus 1	122	37.5826	4585.08
28	01/09/2020	A0620150305	AQ Mforce Gen Z	Plus 2	173	36.5679	6326.25
29	01/09/2020	A0620150306	AQ Mforce Gen Z	Plus 3	182	37.5278	6830.06
30	01/09/2020	A0621150307	AQ Mforce Gen Z	Premium 1	177	36.2434	6415.08
31	01/09/2020	A0621150308	AQ Mforce Gen Z	Premium 2	166	39.399	6540.23
32	01/09/2020	A0721150401	AQ GT 21	Standard	22	39.3377	865.43
33	01/09/2020	A0721150402	AQ GT 21	Plus 1	62	39.1465	2427.08
34	01/09/2020	A0721150403	AQ GT 21	Plus 2	57	39.299	2240.04
35	01/09/2020	A0721150404	AQ GT 21	Premium	182	39.1215	7120.11
36	01/09/2020	A0821150501	AQ Marquee P3	Standard	120	40.5013	4860.16
37	01/09/2020	A0821150502	AQ Marquee P3	Plus 1	106	43.2966	4589.44
38	01/09/2020	A0821150503	AQ Marquee P3	Plus 2	172	42.3841	7290.07
39	01/09/2020	A0821150504	AQ Marquee P3	Premium	197	44.7044	8806.77
40	01/09/2020	A0921150601	AQ Marquee P4	Standard	56	45.0813	2524.55
41	01/09/2020	A1018150101	AQ 5000 Series Electron	Standard	91	111.1036	10110.43
42	01/09/2020	A1018150102	AQ 5000 Series Electron	Plus	51	123.4797	6297.46
43	01/09/2020	A1018150103	AQ 5000 Series Electron	Premium	159	123.9315	19705.11
44	01/09/2020	A1118150201	AQ 5000 Series Electron	Standard	106	124.264	13171.98
45	01/09/2020	A1118150202	AQ 5000 Series Electron	Plus	33	129.5836	4276.26
46	01/09/2020	A1119150203	AQ 5000 Series Electron	Premium	158	139.8962	22103.6
47	01/09/2020	A1219150301	AQ 5000 Series Ultron 8	Standard	114	135.6822	15467.77



Went Further to create gross monthly and yearly sales report

```sql
SELECT
    get_fiscal_year(date) as fiscal_year,
    SUM(g.gross_price * s.sold_quantity) AS yearly_sales
FROM gdb0041.fact_sales_monthly s
JOIN gdb0041.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(date)
ORDER BY fiscal_year ASC;
```

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

fiscal_year	yearly_sales
2018	1324097.4432
2019	3555079.0199
2020	6502181.9143
2021	23216512.2215
2022	44638198.9219

```sql
SELECT
    s.date,
    SUM(ROUND(g.gross_price * s.sold_quantity,2)) AS gross_price_total
FROM gdb0041.fact_sales_monthly s
JOIN gdb0041.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;
```

Result Grid | Filter Rows:

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
2020-02-01	862762.82
2020-04-01	130520.91
2020-05-01	145049.08

Task 2

Create a stored procedure that can determine the market badge based on the following logic, If the total sold qty > 5 million that market is considered Gold else it is silver.

- Input: market and fiscal year
- Output: market badge

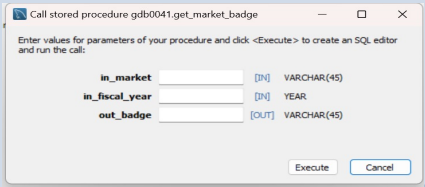
Query for the stored procedure

```
Name: get_market_badge
DDL:
CREATE DEFINER=[redacted] 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 india
    IF in_market = "" THEN
        SET in_market = "India";
    END IF;
    # retrieve total qty for a given market + fyear
    SELECT
        SUM(sold_quantity) into qty
    FROM gdb0041.fact_sales_monthly s
    JOIN gdb0041.dim_customer c
    ON s.customer_code = c.customer_code
    WHERE
        get_fiscal_year(s.date) = in_fiscal_year and
        c.market = in_market
    GROUP BY c.market;

    # determine market badge
    IF qty > 5000000 THEN
        SET out_badge ="Gold";
    else
        SET out_badge = "Silver";
    END IF;
END
```

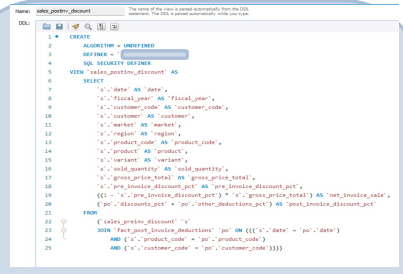
Result as requested



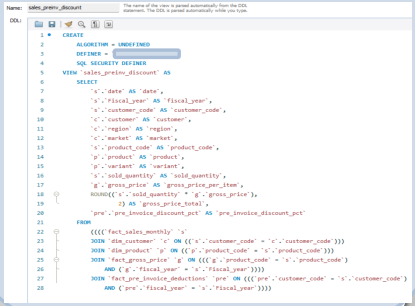
Task 3

Generate net sales for the markets but first create views (virtual tables) to make your query easy, faster and save storage space, also so we can use it any time.

View for post invoice discount



View foe pre invoice discount



First we created 2 table which are post and pre invoice table so we can use it to generate the net sale table(view)

Creation of the net sale view after the post and pre invoice view is created

SQL Query from the view to generate net sales for market

```sql
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;
```

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

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

Name: net_sales — The name of the view is parsed automatically from the DDL statement. The DDL is parsed automatically while you type.

DDL:

```sql
CREATE
    ALGORITHM = UNDEFINED
    DEFINER = [redacted]
    SQL SECURITY DEFINER
VIEW `net_sales` AS
    SELECT
        `sales_postinv_discount`.`date` AS `date`,
        `sales_postinv_discount`.`fiscal_year` AS `fiscal_year`,
        `sales_postinv_discount`.`customer_code` AS `customer_code`,
        `sales_postinv_discount`.`customer` AS `customer`,
        `sales_postinv_discount`.`market` AS `market`,
        `sales_postinv_discount`.`region` AS `region`,
        `sales_postinv_discount`.`product_code` AS `product_code`,
        `sales_postinv_discount`.`product` AS `product`,
        `sales_postinv_discount`.`variant` AS `variant`,
        `sales_postinv_discount`.`sold_quantity` AS `sold_quantity`,
        `sales_postinv_discount`.`gross_price_total` AS `gross_price_total`,
        `sales_postinv_discount`.`pre_invoice_discount_pct` AS `pre_invoice_discount_pct`,
        `sales_postinv_discount`.`net_invoice_sale` AS `net_invoice_sale`,
        `sales_postinv_discount`.`post_invoice_discount_pct` AS `post_invoice_discount_pct`,
        ((1 - `sales_postinv_discount`.`post_invoice_discount_pct`) * `sales_postinv_discount`.`net_invoice_sale`) AS `net_sales`
    FROM
        `sales_postinv_discount`
```

Task 4

I want to see region wise(APAC, EU etc) % net sales breakdown by customers in a respective region so that I can perform my regional analysis on financial performance of the company

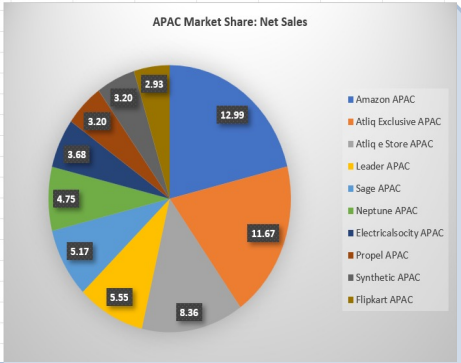
Using the window functions: OVER Clause

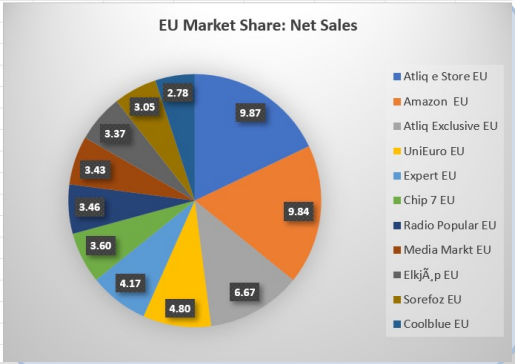
```
29  WITH cte1 AS (SELECT
30      customer,
31      region,
32      ROUND(SUM(net_sales)/1000000, 2) as net_sales_mln
33  FROM gdb041.net_sales
34  WHERE fiscal_year = 2021
35  GROUP BY customer, region)
36  SELECT
37      *,
38      net_sales_mln * 100 / SUM(net_sales_mln) OVER(partition by region) AS pct_share_region
39  FROM cte1
40  ORDER BY region, net_sales_mln DESC;
```

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

customer	region	net_sales_mln	pct_share_region
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
Propel	APAC	14.14	3.199095
Synthetic	APAC	14.14	3.199095
Flipkart	APAC	12.96	2.932127
Novus	APAC	12.91	2.920814
Expression	APAC	12.90	2.918552
Girias	APAC	11.30	2.556561
Vijay Sales	APAC	11.27	2.549774

Output from the analysis using data output from task 4





Thank You

Presented by Cynthia Chinenye Udoye