Task #1: Retrieve customer codes for Croma india

```
SELECT * FROM dim_customer WHERE customer like "%croma%" AND market="india";
```

Output Illustration #1:

customer_code	customer	platform	channel	market	sub_zone	region
90002002	Croma	Brick & Mortar	Retailer	India	India	APAC
NULL	NULL	NULL	NULL	NULL	NULL	NULL

Task #2: 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;
```

Output Illustration #2:

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

JOINING TABLES

Task #3: Retrieve sales and gross revenue details for customer 90002002 in 2021 by joining fact_sales_monthly and dim_product

```
SELECT
        s.date,s.fiscal_year,
        c.customer_code,c.customer,c.market,
         p.product_code,p.product,p.variant,
         s.sold_quantity,g.gross_price,
        (s.sold_quantity*g.gross_price) AS gross_price_total
FROM gdb0041.fact_gross_price g
JOIN fact_sales_monthly s
ON   g.product_code=s.product_code and
        g.fiscal_year=s.fiscal_year
JOIN dim_customer c
ON c.customer_code=s.customer_code
JOIN dim_product p
ON p.product_code=s.product_code and
              p.product_code=g.product_code
WHERE
           c.customer_code=90002002 AND
         get_fiscal_year(s.date)=2021
LIMIT 1000000;
```

Output Illustration #3:

date	fiscal_year	customer_code	customer	market	product_code	product	variant	sold_quantity	gross_price	gross_price_total
2020-09-01	2021	90002002	Croma	India	A0118150101	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Standard	202	19.0573	3849.5746
2020-09-01	2021	90002002	Croma	India	A0118150102	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Plus	162	21.4565	3475.9530
2020-09-01	2021	90002002	Croma	India	A0118150103	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Premium	193	21.7795	4203.4435
2020-09-01	2021	90002002	Croma	India	A0118150104	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Premium Plus	146	22.9729	3354.0434
2020-09-01	2021	90002002	Croma	India	A0219150201	AQ WereWolf NAS Internal Hard Drive HDD – 8....	Standard	149	23.6987	3531.1063
2020-09-01	2021	90002002	Croma	India	A0219150202	AQ WereWolf NAS Internal Hard Drive HDD – 8....	Plus	107	24.7312	2646.2384
2020-09-01	2021	90002002	Croma	India	A0220150203	AQ WereWolf NAS Internal Hard Drive HDD – 8....	Premium	123	23.6154	2904.6942
2020-09-01	2021	90002002	Croma	India	A0320150301	AQ Zion Saga	Standard	146	23.7223	3463.4558
2020-09-01	2021	90002002	Croma	India	A0321150302	AQ Zion Saga	Plus	236	27.1027	6396.2372

USER DEFINED FUNCTION

Task #4: create a function 'get_fiscal_year' to get fiscal year by passing the calender 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
```

Output Illustration #4:

gdb0041.get_fiscal_year('2018-09-01')
2019

Task #5: Retrieve all sales records for a specific customer for the fiscal year 2021 using a user-defined function in SQL

```
SELECT * FROM fact_sales_monthly
WHERE
 customer_code=90002002 AND
    get_fiscal_year(date)=2021
ORDER BY date asc
LIMIT 100000;
```

Output Illustration #5:

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

Task #6: Retrieve detailed sales information for a specific customer for fiscal year 2021, including product details and total gross price, by joining multiple fact and dimension tables

```
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 fact_sales_monthly s
JOIN dim_product p
        ON s.product_code=p.product_code
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 AND
        get_fiscal_year(s.date)=2021
LIMIT 1000000;
```

Output Illustration #6:

date	product_code	product	variant	sold_quantity	gross_price	gross_price_t
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

STORED PROCEDURES

Task #7: Write a stored proc 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_level VARCHAR(45)
        )
BEGIN
        DECLARE  qty INT DEFAULT 0;

          # Default market is 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 s
        JOIN dim_customer c
        ON s.customer_code=c.customer_code
        WHERE
```

```
        get_fiscal_year(s.date)=in_fiscal_year AND
        c.market=in_market;

    # Determine Gold vs Silver status
    IF qty > 5000000 THEN
        SET out_level = 'Gold';
    ELSE
        SET out_level = 'Silver';
    END IF;
END
```

Output Illustration #7:

call gdb0041.market_badge('india', 2021, @out_badge);

	@out_badge
▶	Gold

WINDOW FUNCTIONS

Task #8: Retrieve the top n markets in every region by their gross sales amount in FY=2021.

CTE1 – Calculate Gross Sales per Market and CTE2 – Rank Markets Within Each Region.

```
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
            )
```

Final SELECT – Get Top 2 Markets per Region:

```
select * from cte2 where drnk<=2
```

Output Illustration #8:

market	region	total_gross_sales_mlns	dense_rank_by_total_quantity
India	APAC	36.91	1
Japan	APAC	15.71	2
United Kingdom	EU	22.21	1
Portugal	EU	22.03	2
Mexico	LATAM	2.71	1
Brazil	LATAM	2.52	2
USA	NA	30.76	1