1. Provide a list of products with a base price greater than 500 and that are featured in promo type of 'BOGOF' (Buy One Get One Free). This information will help us identify high-value products that are currently being heavily discounted, which can be useful for evaluating our pricing and promotion strategies.

CODE:

```
select * from fact_events;

select * from dim_products;


SELECT DISTINCT
   dp.product_name, fe.base_price, fe.promo_type
FROM
   dim_products AS dp
      JOIN
   fact_events AS fe ON dp.product_code = fe.product_code
WHERE
   base_price > 500
      AND promo_type = 'BOGOF';
```

RESULT:

product_name	base_price	promo_type
Atliq_Double_Bedsheet_set	1190	BOGOF
Atliq_waterproof_Immersion_Rod	1020	BOGOF

2. Generate a report that provides an overview of the number of stores in each city. The results will be sorted in descending order of store counts, allowing us to identify the cities with the highest store presence. The report includes two essential fields: city and store count, which will assist in optimizing our retail operations.

CODE:

```
SELECT
   city, COUNT(store_id) AS Total_stores
FROM
   dim_stores
GROUP BY city
ORDER BY Total_stores DESC;
```

RESULT:

city	Total_stores
Bengaluru	10
Chennai	8
Hyderabad	7
Coimbatore	5
Visakhapatnam	5
Madurai	4
Mysuru	4
Mangalore	3
Trivandrum	2
Vijayawada	2

3. Generate a report that displays each campaign along with the total revenue generated before and after the campaign? The report includes three key fields: campaign_name, total_revenue(before_promotion), total_revenue(after_promotion). This report should help in evaluating the financial impact of our promotional campaigns. (Display the values in millions).

CODE:

```
select * from dim_campaigns;

select * from fact_events;

select distinct(promo_type) from fact_events;

SELECT
   campaign_name,
   ROUND(SUM(`quantity_sold(before_promo)` * base_price) / 1000000,
         2) AS Total_Revenue_Before_promotion,
   ROUND(SUM(CASE
            WHEN promo_type = 'BOGOF' THEN base_price * 0.5 * (2 * `quantity_sold(after_promo)`)
            WHEN promo_type = '50% Off' THEN base_price * 0.50 * `quantity_sold(after_promo)`
            WHEN promo_type = '25% Off' THEN base_price * 0.75 * `quantity_sold(after_promo)`
            WHEN promo_type = '33% Off' THEN base_price * 0.67 * `quantity_sold(after_promo)`
            WHEN promo_type = '500 Cashback' THEN (base_price - 500) * `quantity_sold(after_promo)`
         END) / 1000000,
         2) AS Total_Revenue_After_promotion
FROM
   retail_events_db.fact_events
      JOIN
   dim_campaigns USING (campaign_id)
GROUP BY campaign_name
ORDER BY 2 DESC;
```

RESULT:

campaign_name	Total_Revenue_Before_promotion	Total_Revenue_After_promotion
Diwali	82.57	171.46
Sankranti	58.13	124.15

4. Produce a report that calculates the Incremental Sold Quantity (ISU%) for each category during the Diwali campaign. Additionally, provide rankings for the categories based on their ISU%. The report will include three key fields: category, isu%, and rank order. This information will assist in assessing the category-wise success and impact of the Diwali campaign on incremental sales.

CODE:

```
WITH CategorySales AS (
  SELECT
    dp.category,
    SUM(
      CASE
        WHEN fe.promo_type = 'BOGOF' THEN fe.`quantity_sold(after_promo)`* 2
        ELSE fe.`quantity_sold(after_promo)`
      END
    ) AS total_quantity_after_promo,
    SUM(`quantity_sold(before_promo)`) AS total_quantity_before_promo
  FROM
    retail_events_db.fact_events fe
  JOIN
    dim_campaigns dc ON fe.campaign_id = dc.campaign_id
  JOIN
    dim_products dp ON fe.product_code = dp.product_code
  WHERE
    dc.campaign_name = 'Diwali'
  GROUP BY
    dp.category
),
ISU_Calculation AS (
  SELECT
    category,
                ROUND(((total_quantity_after_promo - total_quantity_before_promo) / total_quantity_before_promo)
* 100, 2)
    AS isu_percentage
```

```
    FROM
        CategorySales
)
SELECT
    category,
    isu_percentage,
    rank() OVER (order by  isu_percentage desc) AS 'ISU%_Rank'
FROM
    ISU_Calculation;
```

RESULT:

	category	isu_percentage	ISU%_Rank
▶	Home Appliances	588.45	1
	Home Care	203.14	2
	Combo1	202.36	3
	Personal Care	31.06	4
	Grocery & Staples	18.05	5

5.Create a report featuring the Top 5 products, ranked by Incremental Revenue Percentage (IR%), across all campaigns. The report will provide essential information including product name, category, and ir%. This analysis helps identify the most successful products in terms of incremental revenue across our campaigns, assisting in product optimization.

CODE:

```
WITH ProductRevenue AS (
    SELECT
        product_name,
        category,
    SUM(`quantity_sold(before_promo)` * base_price)
            AS Total_Revenue_Before_promotion,
    SUM(CASE
                WHEN promo_type = 'BOGOF' THEN base_price * 0.5 * (2 * `quantity_sold(after_promo)`)
                WHEN promo_type = '50% Off' THEN base_price * 0.50 * `quantity_sold(after_promo)`
                WHEN promo_type = '25% Off' THEN base_price * 0.75 * `quantity_sold(after_promo)`
                WHEN promo_type = '33% Off' THEN base_price * 0.67 * `quantity_sold(after_promo)`
                WHEN promo_type = '500 Cashback' THEN (base_price - 500) * `quantity_sold(after_promo)`
            END) AS Total_Revenue_After_promotion
        FROM
```

```
    retail_events_db.fact_events
        JOIN
        dim_products using (product_code)
    GROUP BY
        product_name, category
),
IR_Calculation AS (
    SELECT
        product_name,
        category, (Total_Revenue_After_promotion- Total_Revenue_Before_promotion) as IR,
       ROUND(((Total_Revenue_After_promotion -Total_Revenue_Before_promotion) / Total_Revenue_Before_promotion) *
100, 2)
        AS IR_Percentage
    FROM
        ProductRevenue
)
SELECT
    product_name,
    category, IR,
   IR_Percentage

FROM
    IR_Calculation
ORDER BY
    ir_percentage DESC
LIMIT 5;
```

RESULT:

product_name	category	IR	IR_Percentage
Atliq_waterproof_Immersion_Rod	Home Appliances	17561340.00	266.19
Atliq_High_Glo_15W_LED_Bulb	Home Appliances	7589050.00	262.98
Atliq_Double_Bedsheet_set	Home Care	12917450.00	258.27
Atliq_Curtains	Home Care	3517500.00	255.34
Atliq_Farm_Chakki_Atta (1KG)	Grocery & Staples	17363475.00	160.01