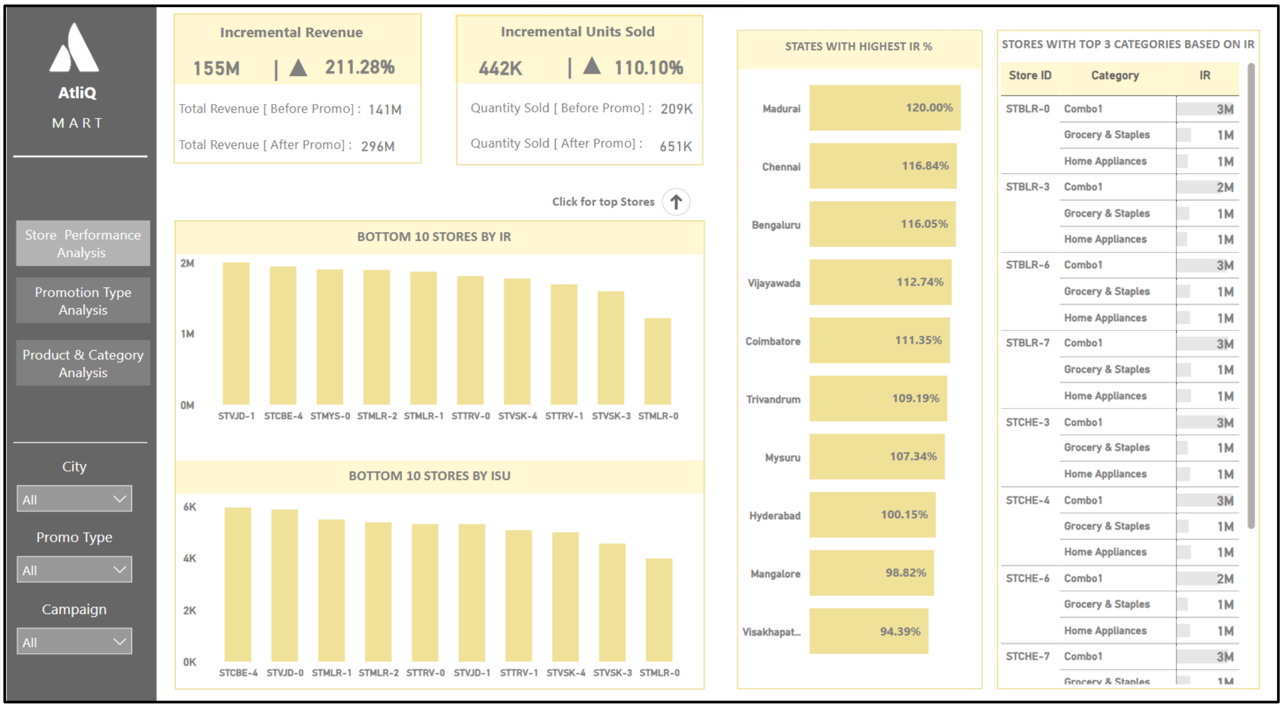
MYSQL & POWER BI | Promotional Performance Analysis



Incremental Revenue

155M | ▲ 211.28%

Total Revenue [Before Promo] : 141M

Total Revenue [After Promo] : 296M

Incremental Units Sold

442K | ▲ 110.10%

Quantity Sold [Before Promo] : 209K

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STORES WITH TOP 3 CATEGORIES BASED ON IR

Store ID	Category	IR
STBLR-0	Combo1	3M
	Grocery & Staples	1M
	Home Appliances	1M
STBLR-3	Combo1	2M
	Grocery & Staples	1M
	Home Appliances	1M
STBLR-6	Combo1	3M
	Grocery & Staples	1M
	Home Appliances	1M
STBLR-7	Combo1	3M
	Grocery & Staples	1M
	Home Appliances	1M
STCHE-3	Combo1	3M
	Grocery & Staples	1M
	Home Appliances	1M
STCHE-4	Combo1	3M
	Grocery & Staples	1M
	Home Appliances	1M
STCHE-6	Combo1	2M
	Grocery & Staples	1M
	Home Appliances	1M
STCHE-7	Combo1	3M
	Grocery & Staples	1M

Examine the promotions run by Atliq Mart during Diwali 2023 and Sankranti 2024 to evaluate their effectiveness. This analysis will help in making informed decisions for future promotional activities.

Skills Used:

SQL to analyse and ad-hoc-analysis

Power BI for visualization

The desired insights from this analysis are as follows:

- Which state witnessed the highest increase in revenue?
- Which promotion resulted in the highest incremental revenue and sales?
- Which promotion resulted in the lowest incremental revenue and sales?
- Which product showed the highest and lowest lift in sales and revenue?

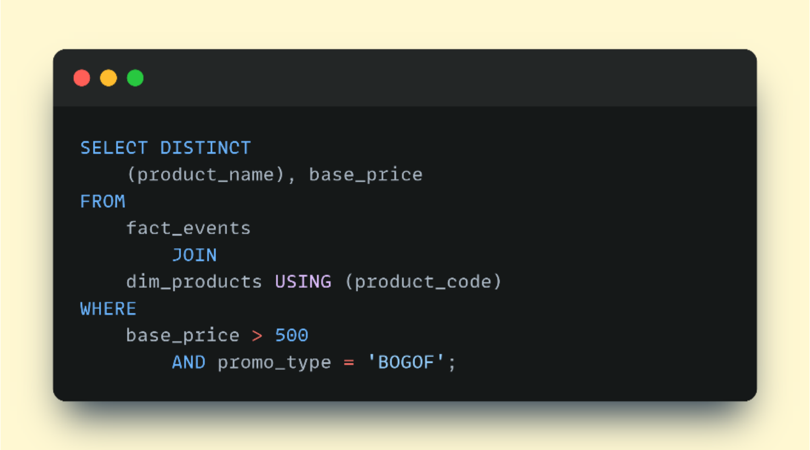
Process:

- Load the data into MYSQL Workbench.
- Analyse the data and write queries for ad hoc requests.
- Import the data into Power BI.
- Create DAX measures for analysis and create the dashboard.
- Which promotion resulted in the highest incremental revenue

The project is divided into two parts:

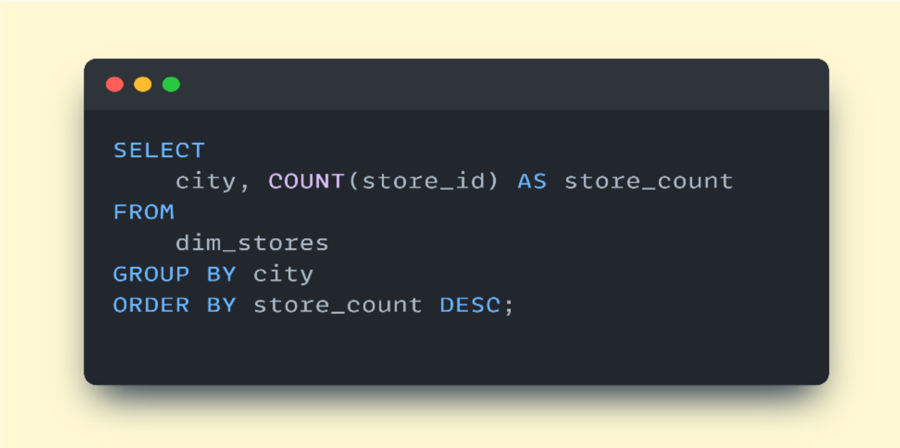
1. Primary Analysis - Analyse the data and answer ad-hoc requests using MySQL.

List products priced over 500 and that are featured in promo type 'BOGOF' to identify valuable items with big discounts, helping evaluate pricing and promotion strategies.



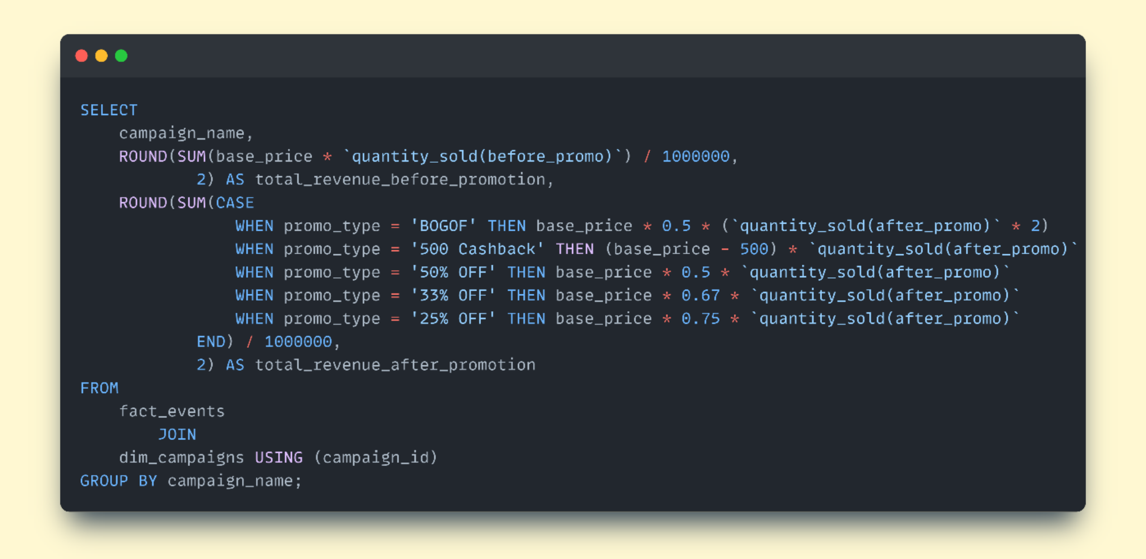
```
SELECT DISTINCT
    (product_name), base_price
FROM
    fact_events
        JOIN
    dim_products USING (product_code)
WHERE
    base_price > 500
        AND promo_type = 'BOGOF';
```

Generate a report listing cities and their respective store counts, sorted by descending order of store presence, to optimize retail operations.



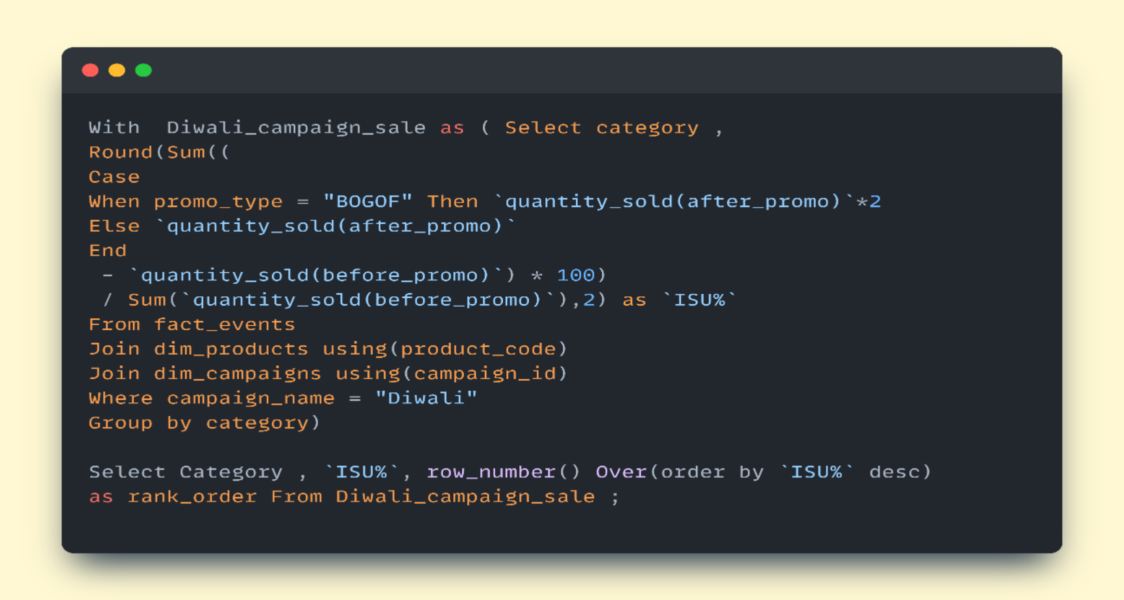
```
SELECT
    city, COUNT(store_id) AS store_count
FROM
    dim_stores
GROUP BY city
ORDER BY store_count DESC;
```

Generate a report showing each campaign's total revenue before and after promotion, helping assess the financial impact of promotional campaigns.



```sql
SELECT
    campaign_name,
    ROUND(SUM(base_price * `quantity_sold(before_promo)`) / 1000000,
            2) AS total_revenue_before_promotion,
    ROUND(SUM(CASE
                WHEN promo_type = 'BOGOF' THEN base_price * 0.5 * (`quantity_sold(after_promo)` * 2)
                WHEN promo_type = '500 Cashback' THEN (base_price - 500) * `quantity_sold(after_promo)`
                WHEN promo_type = '50% OFF' THEN base_price * 0.5 * `quantity_sold(after_promo)`
                WHEN promo_type = '33% OFF' THEN base_price * 0.67 * `quantity_sold(after_promo)`
                WHEN promo_type = '25% OFF' THEN base_price * 0.75 * `quantity_sold(after_promo)`
            END) / 1000000,
            2) AS total_revenue_after_promotion
FROM
    fact_events
        JOIN
    dim_campaigns USING (campaign_id)
GROUP BY campaign_name;
```

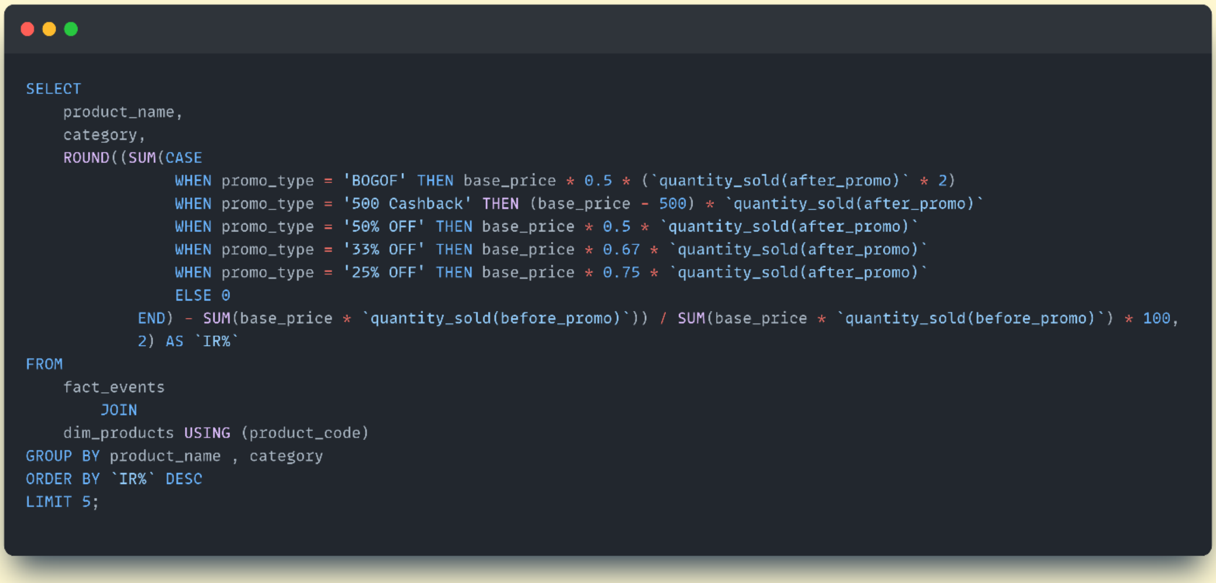
Generate a report calculating ISU% for each category during the Diwali campaign, along with rankings. This will help assess category-wise success and impact of the campaign on incremental sales.



```sql
With  Diwali_campaign_sale as ( Select category ,
Round(Sum((
Case
When promo_type = "BOGOF" Then `quantity_sold(after_promo)`*2
Else `quantity_sold(after_promo)`
End
 - `quantity_sold(before_promo)`) * 100)
 / Sum(`quantity_sold(before_promo)`),2) as `ISU%`
From fact_events
Join dim_products using(product_code)
Join dim_campaigns using(campaign_id)
Where campaign_name = "Diwali"
Group by category)

Select Category , `ISU%`, row_number() Over(order by `ISU%` desc)
as rank_order From Diwali_campaign_sale ;
```

Generate a report listing the Top 5 products by IR% across all campaigns, providing product name, category, and IR%. This assists in identifying successful products for optimization.

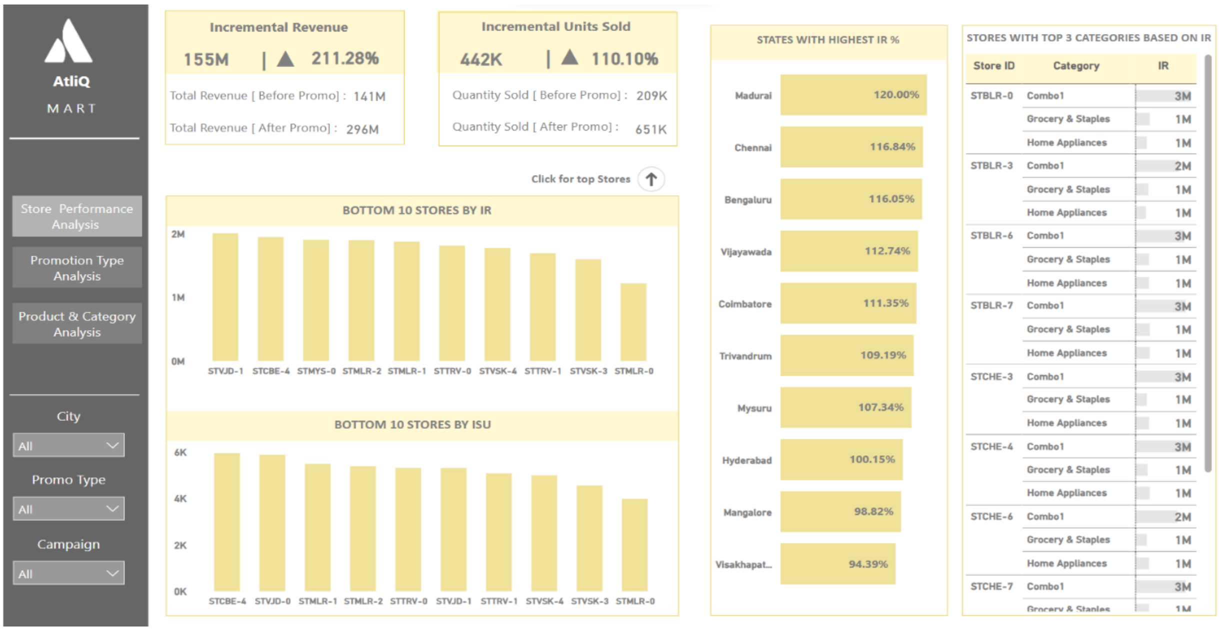


```sql
SELECT
    product_name,
    category,
    ROUND((SUM(CASE
                WHEN promo_type = 'BOGOF' THEN base_price * 0.5 * (`quantity_sold(after_promo)` * 2)
                WHEN promo_type = '500 Cashback' THEN (base_price - 500) * `quantity_sold(after_promo)`
                WHEN promo_type = '50% OFF' THEN base_price * 0.5 * `quantity_sold(after_promo)`
                WHEN promo_type = '33% OFF' THEN base_price * 0.67 * `quantity_sold(after_promo)`
                WHEN promo_type = '25% OFF' THEN base_price * 0.75 * `quantity_sold(after_promo)`
                ELSE 0
            END) - SUM(base_price * `quantity_sold(before_promo)`)) / SUM(base_price * `quantity_sold(before_promo)`) * 100,
            2) AS `IR%`
FROM
    fact_events
        JOIN
    dim_products USING (product_code)
GROUP BY product_name , category
ORDER BY `IR%` DESC
LIMIT 5;
```

2. Secondary Analysis – Create a dashboard with important metrics and visualizations using Power BI.

The dashboard consists of three pages –

1. Store Performance Analysis View:



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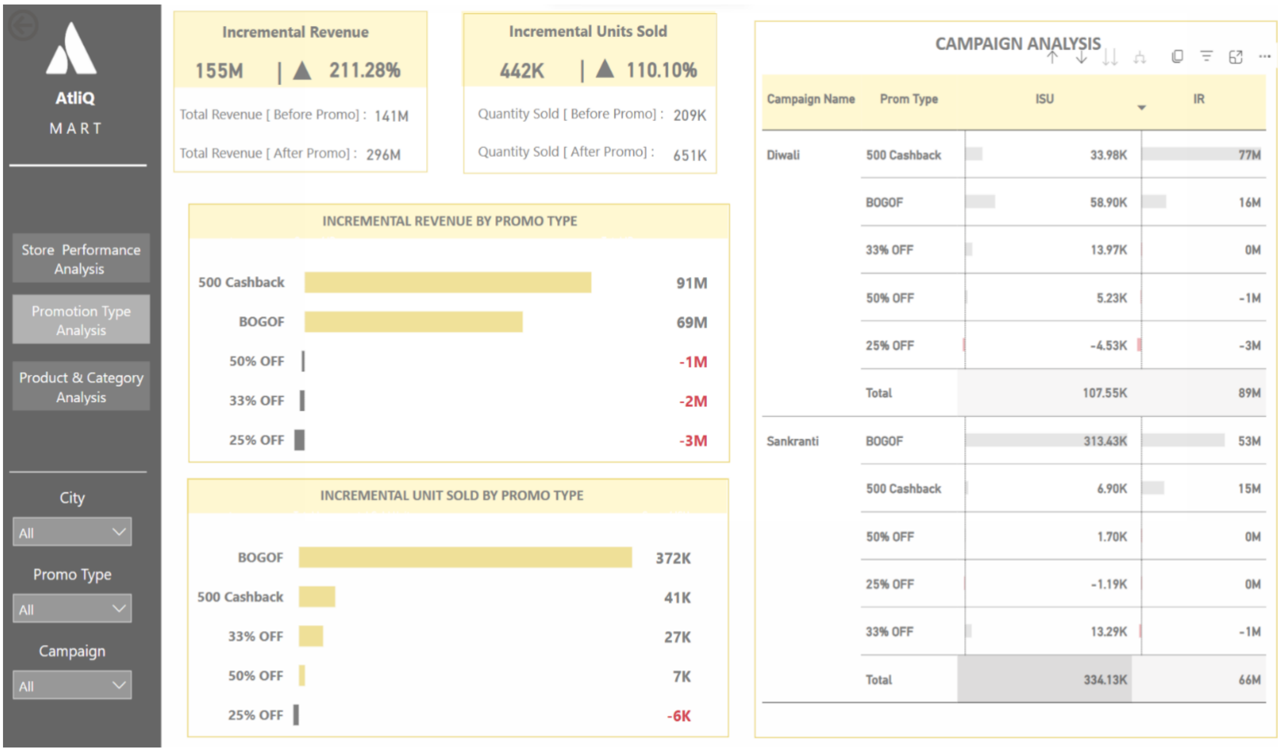
	Home Appliances	1M
STCHE-7	Combo1	3M
	Grocery & Staples	1M

2. Promotion Type Analysis View:



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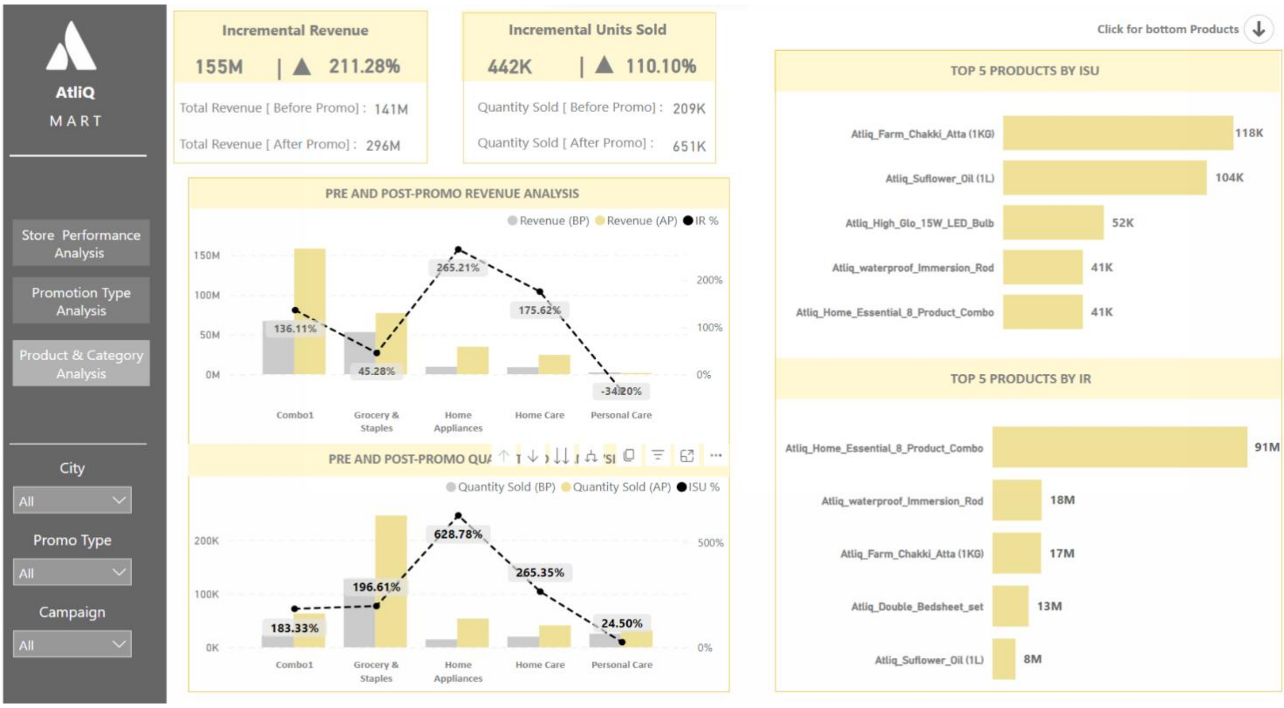
CAMPAIGN ANALYSIS

Campaign Name	Prom Type	ISU	IR
Diwali	500 Cashback	33.98K	77M
	BOGOF	58.90K	16M
	33% OFF	13.97K	0M
	50% OFF	5.23K	-1M
	25% OFF	-4.53K	-3M
	Total	107.55K	89M
Sankranti	BOGOF	313.43K	53M
	500 Cashback	6.90K	15M
	50% OFF	1.70K	0M
	25% OFF	-1.19K	0M
	33% OFF	13.29K	-1M
	Total	334.13K	66M

3. Product and Category Analysis View:



AtliQ
MART
Store Performance Analysis
Promotion Type Analysis
Product & Category Analysis
City
All
Promo Type
All
Campaign
All

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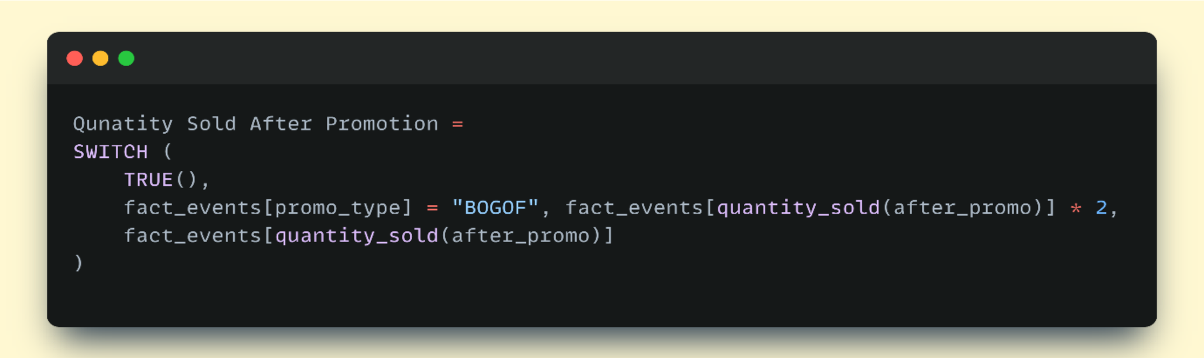
PRE AND POST-PROMO REVENUE ANALYSIS
● Revenue (BP) ● Revenue (AP) ● IR %
150M
100M
50M
0M
200%
100%
0%
136.11%
45.28%
265.21%
175.62%
-34.20%
Combo1
Grocery & Staples
Home Appliances
Home Care
Personal Care
PRE AND POST-PROMO QUA
● Quantity Sold (BP) ● Quantity Sold (AP) ● ISU %
200K
100K
0K
500%
0%
183.33%
196.61%
628.78%
265.35%
24.50%
Combo1
Grocery & Staples
Home Appliances
Home Care
Personal Care
Click for bottom Products
TOP 5 PRODUCTS BY ISU
Atliq_Farm_Chakki_Atta (1KG) 118K
Atliq_Suflower_Oil (1L) 104K
Atliq_High_Glo_15W_LED_Bulb 52K
Atliq_waterproof_Immersion_Rod 41K
Atliq_Home_Essential_8_Product_Combo 41K
TOP 5 PRODUCTS BY IR
Atliq_Home_Essential_8_Product_Combo 91M
Atliq_waterproof_Immersion_Rod 18M
Atliq_Farm_Chakki_Atta (1KG) 17M
Atliq_Double_Bedsheet_set 13M
Atliq_Suflower_Oil (1L) 8M

DAX Measures:

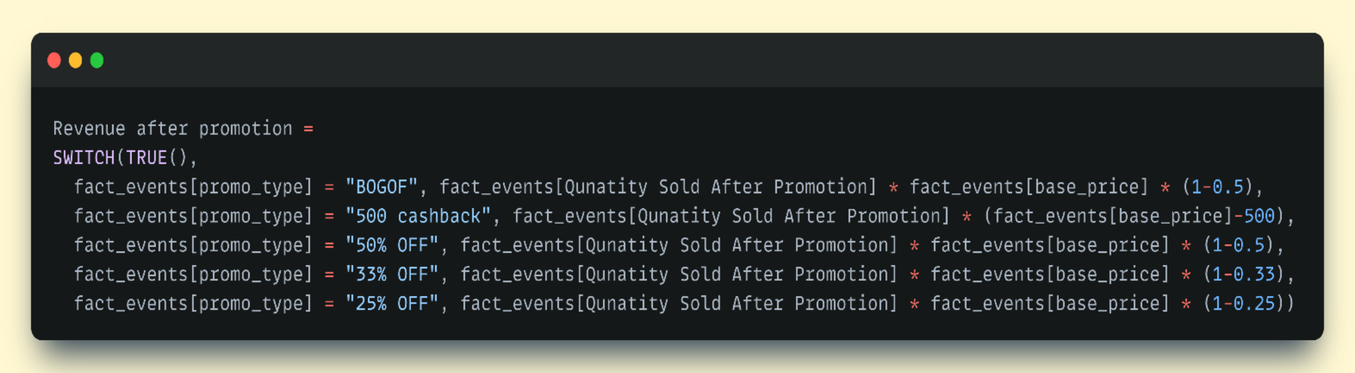
Here are some DAX measures that are required for the analysis.

Quantity sold after promotions:



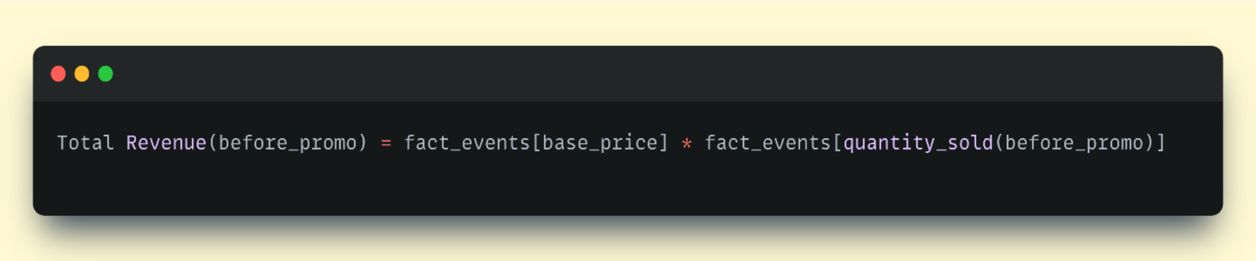
```
Qunatity Sold After Promotion =
SWITCH (
    TRUE(),
    fact_events[promo_type] = "BOGOF", fact_events[quantity_sold(after_promo)] * 2,
    fact_events[quantity_sold(after_promo)]
)
```

Revenue after promotions:



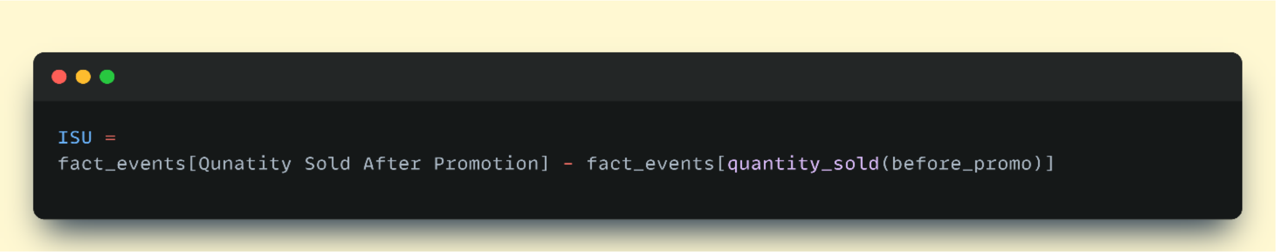
```
Revenue after promotion =
SWITCH(TRUE(),
  fact_events[promo_type] = "BOGOF", fact_events[Qunatity Sold After Promotion] * fact_events[base_price] * (1-0.5),
  fact_events[promo_type] = "500 cashback", fact_events[Qunatity Sold After Promotion] * (fact_events[base_price]-500),
  fact_events[promo_type] = "50% OFF", fact_events[Qunatity Sold After Promotion] * fact_events[base_price] * (1-0.5),
  fact_events[promo_type] = "33% OFF", fact_events[Qunatity Sold After Promotion] * fact_events[base_price] * (1-0.33),
  fact_events[promo_type] = "25% OFF", fact_events[Qunatity Sold After Promotion] * fact_events[base_price] * (1-0.25))
```

Revenue before promotion:



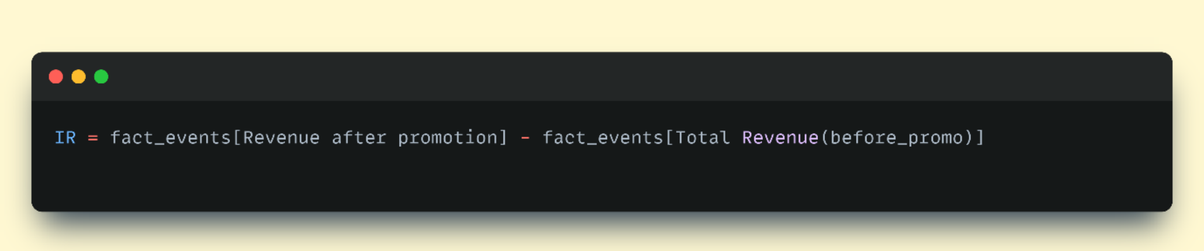
```
Total Revenue(before_promo) = fact_events[base_price] * fact_events[quantity_sold(before_promo)]
```

Incremental sold unit:



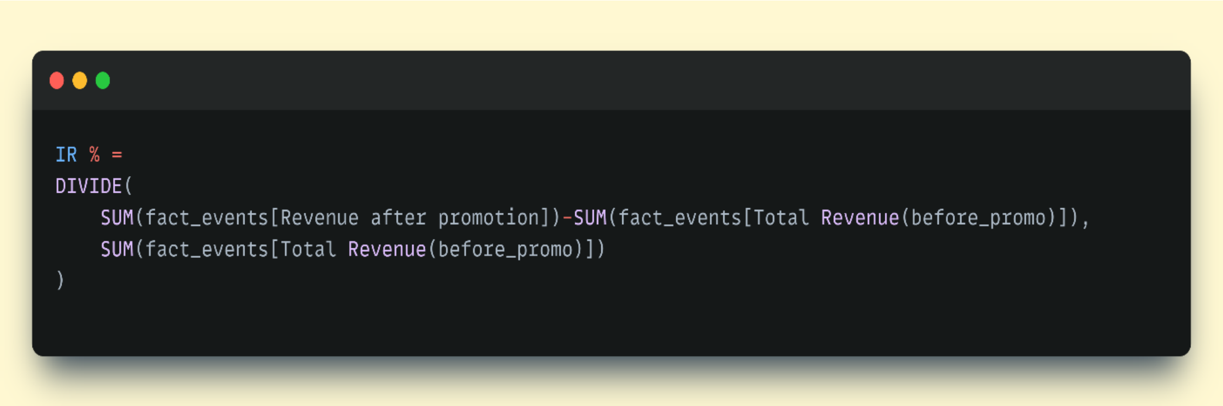
```
ISU =
fact_events[Qunatity Sold After Promotion] - fact_events[quantity_sold(before_promo)]
```

Incremental Revenue:



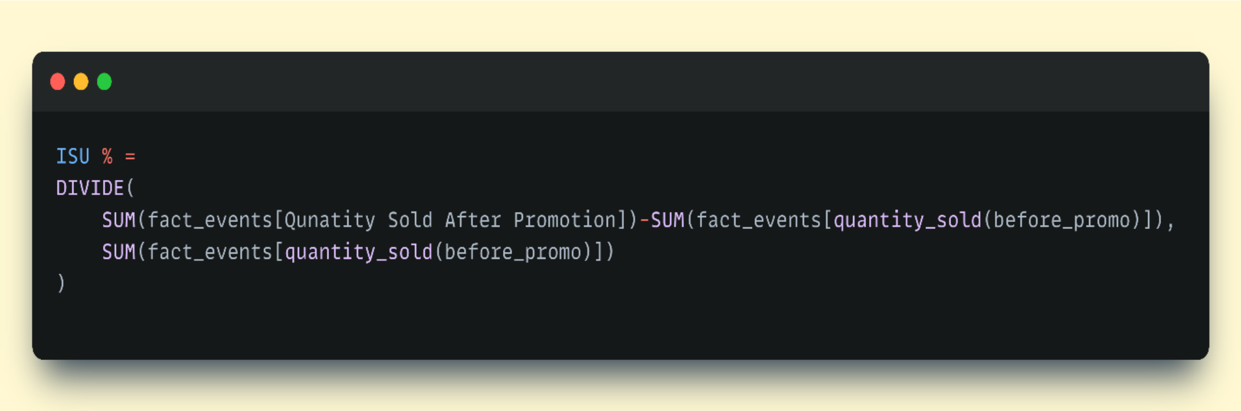
```
IR = fact_events[Revenue after promotion] - fact_events[Total Revenue(before_promo)]
```

Incremental Revenue %:



```
IR % =
DIVIDE(
    SUM(fact_events[Revenue after promotion])-SUM(fact_events[Total Revenue(before_promo)]),
    SUM(fact_events[Total Revenue(before_promo)])
)
```

Incremental unit sold %:



```
ISU % =
DIVIDE(
    SUM(fact_events[Qunatity Sold After Promotion])-SUM(fact_events[quantity_sold(before_promo)]),
    SUM(fact_events[quantity_sold(before_promo)])
)
```

Conclusion:

Stores Insights

Focus Efforts on High IR Store Categories:

- Prioritize categories with the highest Incremental Revenue (IR), including Combo1, Grocery, Staples, and Home Appliances.

Target Key Cities:

- Concentrate efforts on cities with the highest incremental revenue %, such as Madurai, Chennai, and Bengaluru.

Promotion Type Insights

Leverage Effective Promotion Types:

- Capitalize on promotions like **500 cashback** and **BOGOF** (Buy One Get One Free) due to their positive impact on Incremental Revenue and Unit Sales.

Avoid Ineffective Discounts:

- Steer clear of discount promotions, especially **25% OFF** and **33% OFF**, as they have shown limited effectiveness in driving revenue.

Optimize Seasonal Promotions:

- Focus on maximizing revenue during **Diwali** compared to Sankranti by refining promotional strategies for this key period.

Product and Category Analysis

Maximize Revenue from High-Performing Categories:

- Allocate resources towards categories with the highest incremental revenue growth, such as Home Appliances and Home Care.

Promote Top Revenue Generating Products:

- Focus on products like the **Atliq Waterproof Immersion Rod, Atliq LED Bulb** and **Atliq Double Bedsheet Set** to capitalize on their strong revenue contributions.

Video Presentation link - https://www.linkedin.com/feed/update/urn:li:activity:7168941818028474368/

Thank you!!

For taking the time to explore my portfolio!