

Technical Documentation – Social Buzz Content Analysis

Overview

This technical documentation provides a detailed walkthrough of how the **Social Buzz Content Analysis** report was developed in **Power BI**. It includes data preparation steps, data modeling logic, DAX measures, and advanced interactive features.

The analysis was conducted as part of the **Accenture Job Simulation Program**, and the objective was to analyze user-generated content and reactions to identify top-performing **content categories, sentiments, and reaction types**.

I was the **sole contributor**, responsible for handling the complete analytics pipeline from data ingestion to report design.

Process Workflow

CSV Dataset → Power Query (Cleaning) → Data Modeling → DAX Calculations → Interactive Visual Design → Publishing

Data Preparation (Power Query)

Key Steps:

- Removed unnecessary columns: Index, User ID (to maintain anonymity), and URL from the **Contents** table.
 - Standardized data formats across all columns.
 - Renamed columns using **user-friendly naming conventions**.
 - Removed null values from the Reaction Type column.
 - Separated Reaction DateTime into individual **Date** and **Time** columns for model efficiency.
 - Merged **Reactions** (Left Table) and **Reaction Type** (Right Table) using **Left Outer Join** on the common key Reaction Type.
 - **Disabled query load** for Reaction Type table after merge to optimize performance.
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Data Modeling

The data model consists of **three main tables**:

1. Content (Dimension Table)

- Content ID: Unique identifier.
- Content Type: Photo, Video, GIF, Audio.
- Content Category: Animals, Science, Food, Technology, etc.

2. Reactions (Fact Table)

- Content ID: Foreign key from Content.
- Reaction Type.
- Reaction Date and Reaction Time.
- Sentiment: Positive, Negative, Neutral.
- Score: Reaction rating.
- Start of Hour: Created using Grouping feature on Reaction Time (used for hourly trend analysis).

3. Calendar (Calculated Dimension Table)

Created using the following expression:

Date = CALENDAR(MIN(Reactions[Reaction Date]), MAX(Reactions[Reaction Date]))

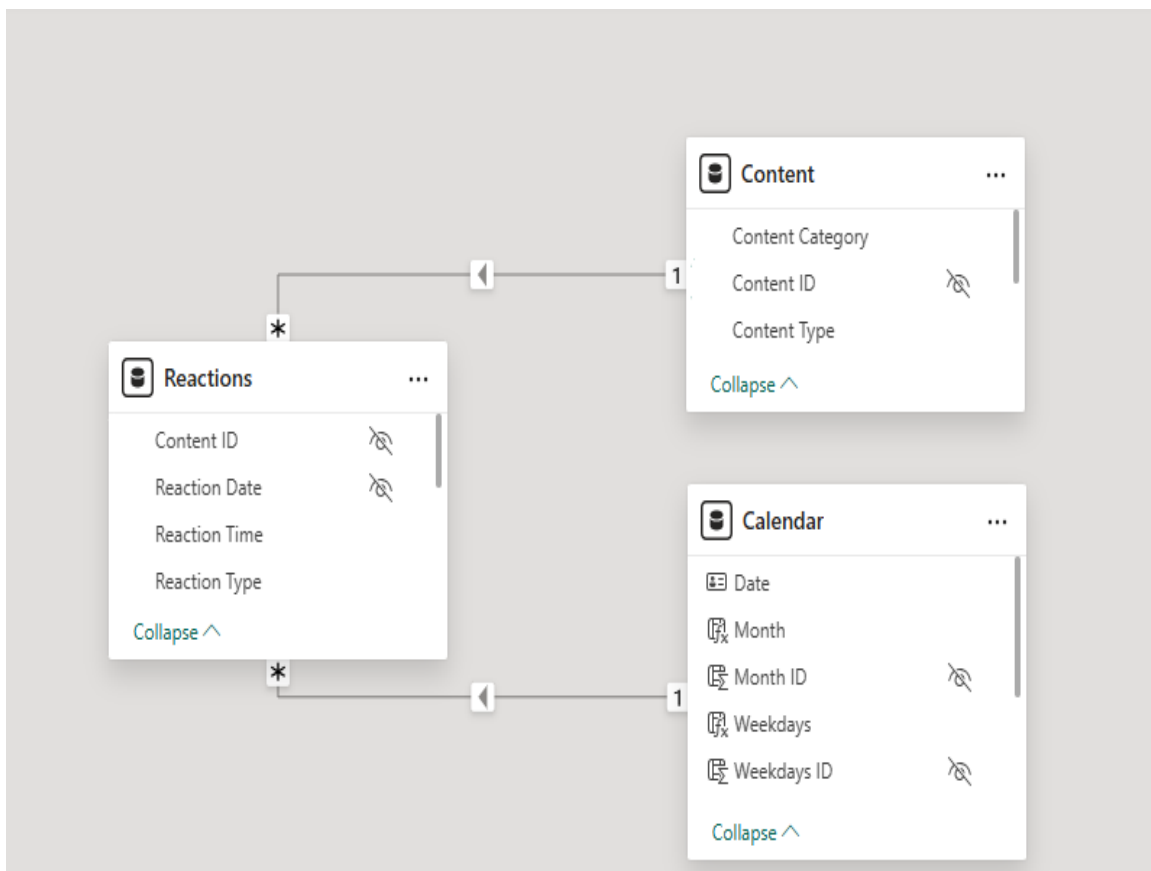
Additional calculated columns:

- **Month = FORMAT('Calendar'[Date], "mmm")**
- **Month ID = MONTH('Calendar'[Date]) + IF(MONTH('Calendar'[Date]) > 5, -5, 7)**
(Assuming FY starts in June 2020)
- **Weekday = FORMAT('Calendar'[Date], "ddd")**
- **Weekday ID = WEEKDAY('Calendar'[Date], 2)**

Additional Modeling Details:

- **Relationship Cardinality:**
 - Content and Calendar are **Dimension Tables**.
 - Reactions is the **Fact Table**.

- All relationships are **One-to-Many** with **Single Cross-filter direction**.
- **Sorted Columns:**
 - Month sorted by Month ID.
 - Weekday sorted by Weekday ID.
- **Hidden Fields:**
Content ID (from both tables), Reaction Date, Month ID, Weekday ID — hidden from report view.
- **Hierarchies Created:**
 - Date Hierarchy: Month → Weekday.
 - Content Hierarchy: Content Type → Category.
 - Sentiment Hierarchy: Sentiment → Reaction Type.



DAX Measures

Here are the key measures used in the report:

1. Highlighting Top 5 Categories (Bar Chart Color Logic)

Reaction by Content Category =

```
VAR All_Category = ALL('Content'[Content Category])
```

```
RETURN
```

```
    SWITCH(TRUE(),  
            RANKX(All_Category, [Reactions], , DESC, Dense) <= 5, "Top 5",  
            RANKX(All_Category, [Reactions], , ASC, Dense) <= 5, "Bottom 5",  
            "Others")
```

2. Highlighting Top 5 Reaction Types

Reactions by Reaction Type =

```
VAR All_Reaction_Type = ALL(Reactions[Reaction Type])
```

```
RETURN
```

```
    SWITCH(TRUE(),  
            RANKX(All_Reaction_Type, [Reactions], , DESC, Dense) <= 5, "Top 5",  
            RANKX(All_Reaction_Type, [Reactions], , ASC, Dense) <= 5, "Bottom 5",  
            "Others")
```

3. Highlighting Top Sentiment

Reactions by Sentiment =

```
SWITCH(TRUE(),  
        RANKX(ALL(Reactions[Sentiment]), [Reactions], , DESC, Dense) = 1,  
        "Top Sentiment",  
        "Others")
```

4. Dynamic Detail Page Title (Drill-through Visual)

Detail Page Title =

VAR Content_Type = SELECTEDVALUE('Content'[Content Type])

VAR Content_Category = SELECTEDVALUE('Content'[Content Category])

VAR Sentiment = SELECTEDVALUE(Reactions[Sentiment])

RETURN

SWITCH(TRUE(),

HASONEVALUE('Content'[Content Type]), Content_Type,

HASONEVALUE('Content'[Content Category]), Content_Category,

HASONEVALUE(Reactions[Sentiment]), Sentiment,

"All")

5–9. Core Metrics

Zero Reaction Contents = DIVIDE([Contents] - DISTINCTCOUNT(Reactions[Content ID]), [Contents])

Contents = COUNTROWS('Content')

Reactions = COUNTROWS(Reactions)

Avg Score = AVERAGE(Reactions[Score])

Total Score = SUM(Reactions[Score])

Note: The first three measures above are used strictly for highlighting (e.g., colored bars for Top/Bottom visuals).

Interactive Features & Visual Experience

Implemented Interactions:

- **Bookmark Toggle:** Switch between Top 5 and Bottom 5 categories using **bookmark buttons**.
- **Drill-through Pages:** Right-click on any content type, category, or sentiment to go to a detail page.
- **Drill-down Navigation:** Line chart allows user to explore by **Month → Weekday**.
- **Tooltips:** Include Avg Score, Reaction Count, Sentiment.
- **Slicers:**
 - Content Category
 - Content Type
 - Sentiment
 - Reaction Type

Testing and Quality Assurance

- Verified calculations and cross-filtering by manually slicing and filtering visuals.
- Tested **bookmark states and toggle functionality**.
- Ensured **drill-through targets** reflect accurate context.
- Validated sentiment and zero-reaction calculations by comparing measure outputs to table views.