Coding Challenge: Instagram Engagement Analysis

Your task is to analyze Instagram post-performance data of a brand/influencer and derive insights into **audience engagement, content effectiveness, and growth trends**. You will then build an **interactive Power BI dashboard** to present your findings.

Dataset:

- Post_ID – Unique identifier of the post
- Post_Date – Date of the post
- Post_Type – Image, Video, Reel, Story
- Caption_Length – Number of words in caption
- Hashtags_Used – Count of hashtags
- Likes – Number of likes received
- Comments – Number of comments received
- Shares – Number of shares
- Saves – Number of saves
- Reach – Total number of unique users reached
- Impressions – Total number of views (including repeats)
- Follower_Count – Total followers at the time of posting

Tasks

1. **Data Cleaning & Transformation**
    - Remove duplicates or null values
    - Convert Post_Date into **Month-Year** for trend analysis
    - Create calculated columns/measures for:
        - Engagement Rate
        - Interaction-to-Follower Ratio
2. **Exploratory Analysis**
    - Which post type (**Image, Video, Reel, Story**) performs best in terms of engagement rate?

- Does caption length or number of hashtags impact engagement?
- Which month had the **highest average reach**?

3. **Dashboard Requirements**
   Build a Power BI dashboard containing:
   - **Trend Analysis** → Reach, Impressions, and Engagement Rate over time
   - **Top Performing Content** → Top 5 posts by engagement rate
   - **Post Type Comparison** → Bar/column chart of average engagement by post type
   - **Follower Growth Impact** → Show correlation between follower count and engagement
   - **Filters/Slicers** → By Post Type, Month-Year

Deliverables

- A clean, interactive **Power BI Dashboard**
- A **short insight report** (3–5 key insights students found, e.g., “Reels have the highest engagement rate, but Stories drive more reach.”)