**YouTube Engagement Analysis Requirements**

**Business Requirement**

To conduct a comprehensive analysis of YouTube channel performance, focusing on audience engagement, content effectiveness, and growth trends using key performance indicators (KPIs) and visualizations in Excel.

**KPIs Requirements**

1. **Total Views:**
   * The overall number of views across all videos.
2. **Average Watch Time:**
   * The average duration viewers spend watching the content.
3. **Total Subscribers:**
   * The cumulative number of channel subscribers.
4. **Engagement Rate:**
   * The percentage of viewers who liked, commented, or shared videos.
5. **Like-to-View Ratio:**
   * The proportion of likes compared to total views.
6. **Comments per Video:**
   * The average number of comments received per video.
7. **Shares per Video:**
   * The average number of times videos are shared.
8. **Subscriber Growth Rate:**
   * The increase in subscribers over time.

**Chart Requirements**

1. **Total Views by Content Category:**
   * **Objective:** Evaluate which content category generates the most views.
   * **Additional Metrics:** Compare watch time, likes, and shares by category.
   * **Chart Type:** Column Chart.
2. **Average Watch Time by Video Length:**
   * **Objective:** Determine how video duration impacts watch time.
   * **Additional Metrics:** Analyze engagement rate variations by video length.
   * **Chart Type:** Line Chart.
3. **Subscriber Growth Trend Over Time:**
   * **Objective:** Track the growth of subscribers month-wise.
   * **Chart Type:** Area Chart.
4. **Engagement Rate by Video Type:**
   * **Objective:** Assess the effectiveness of different video types in driving engagement.
   * **Chart Type:** Pie Chart.
5. **Top 10 Performing Videos by Views:**
   * **Objective:** Identify the most popular videos based on views.
   * **Chart Type:** Bar Chart.
6. **Total Views by Upload Date:**
   * **Objective:** Examine how upload timing influences views.
   * **Chart Type:** Scatter Plot.
7. **All Metrics by Video Category:**
   * **Objective:** Provide an overview of all key metrics (views, watch time, engagement rate) across different content categories.
   * **Chart Type:** Pivot Table.