**Student Guide: Power Query, Pivot Tables, and Data Visualization with UFO Sightings Dataset**

**Objective:** This exercise is designed to help you apply your knowledge of Power Query, pivot tables, and data visualization techniques to analyze and present insights from the UFO sightings dataset. You will work collaboratively in groups throughout the exercise.

**Materials for Students:**

1. Microsoft Excel (ensure it is installed on your computer)
2. Access to the server for data import:
   * Server: mss-p1-biss-01
   * Database: bissabcanalytics
   * Table: UFO\_Sightings

**Duration:** Approximately 1.5 hours

**Exercise Steps:**

1. **Introduction (5 minutes)**
   * Listen to the instructor's explanation of the exercise's objectives.
   * Understand that you will be using Power Query to import and transform data, followed by creating pivot tables and pivot charts using the UFO sightings dataset.
2. **Data Import and Transformation (20 minutes)**
   * In your groups, use Power Query in Excel to connect to the server and import the UFO\_Sightings table.
   * Transform the data as necessary, such as filtering, sorting, or removing duplicates, to prepare it for analysis and visualization.
3. **Pivot Table Creation (15 minutes)**
   * Create pivot tables from the transformed data to summarize key aspects of the UFO sightings dataset.
   * Decide on the dimensions and measures you want to analyze, such as sighting locations, dates, or types.
   * Use the pivot table to explore patterns and trends in the dataset.
4. **Visualization Goals (10 minutes)**
   * As a group, set specific data visualization goals you aim to achieve using the UFO sightings dataset.
   * Goals may include creating pivot charts like bar charts, line graphs, pie charts, or other relevant visualizations based on the dataset's content.
5. **Pivot Chart Creation and Analysis (30 minutes)**
   * Work together to create pivot charts from your pivot tables that align with your set goals using the UFO sightings dataset.
   * Experiment with different chart types and customization options as a team.
   * Perform a preliminary analysis of the charts to draw insights from the data.
   * Seek guidance from the instructor as needed.
6. **Presentation (15 minutes)**
   * Each group will present their pivot tables, pivot charts, and how they achieved their set goals using the UFO sightings dataset to the class.
   * Explain the steps taken, including data transformation, pivot table creation, and the significance of your visualizations as a team.
7. **Group Discussion and Feedback (10 minutes)**
   * Engage in discussions with other groups after each presentation.
   * Provide feedback on the effectiveness and creativity of your peers' visualizations.
   * Ask questions and learn from the approaches of other groups.
8. **Q&A and Recap (10 minutes)**
   * As a class, ask any questions you have about your data visualizations and receive answers or clarifications.
   * Recap key achievements and insights from the data visualization goals using the UFO sightings dataset.
9. **Conclusion (5 minutes)**
   * Reflect on the importance of teamwork and creating effective data visualizations, especially when working with real-world datasets.
   * Consider exploring different visualization tools and techniques to enhance your data analysis skills as a group using the UFO sightings dataset.