**Course Title:**

**Discovering Data: A Fun Journey into Data Analysis with Islamic Insights**

**Session 1: Introduction to Data Analysis**

**Objective:**  
Understand the basics of data analysis and its real-life applications.

**Structure:**

1. **Warm Welcome:** Islamic greeting and course introduction.
2. **What is Data Analysis?** Brief discussion and real-life examples.
3. **Activity:** Analyze a dataset of Quranic surahs (e.g., number of verses).
   * Find the longest and shortest surahs.
   * Calculate the average number of verses.
   * Visualize the data using bar charts.
4. **Reflection:** Connecting the activity to appreciating the Quran's structure.
5. **Quiz:** Recap key points.
6. **Homework:** Research and expand the dataset.

**Session 2: Organizing and Cleaning Data**

**Objective:**  
Learn how to structure, clean, and prepare data for analysis.

**Structure:**

1. **Warm-Up Discussion:** Why is cleanliness important in Islam and data?
2. **Dataset Introduction:** A dataset about Islamic countries (e.g., population, area, literacy rates).
3. **Activity:**
   * Identify and fix missing or incorrect data.
   * Rename columns, sort, and filter data.
   * Add new columns (e.g., calculate population density).
4. **Reflection:** Importance of organizing things (e.g., Salah times, daily tasks).
5. **Quiz:** Questions about organizing and cleaning data.
6. **Homework:** Clean a dataset of Islamic events (e.g., Eid prayer times across cities).

**Session 3: Visualizing Data**

**Objective:**  
Understand the power of visualizing data through charts and graphs.

**Structure:**

1. **Warm-Up Discussion:** The beauty of patterns in nature (e.g., symmetry in Islamic art).
2. **Activity:** Visualize Islamic historical data (e.g., the spread of Islam over time).
   * Create bar charts, line graphs, and pie charts.
   * Compare multiple datasets (e.g., populations of Islamic countries).
3. **Reflection:** Patterns in Allah's creations and the importance of seeing "the bigger picture."
4. **Quiz:** Identify the best visualization type for different data.
5. **Homework:** Create a chart comparing the number of mosques in various cities.

**Session 4: Asking Questions and Finding Insights**

**Objective:**  
Learn to ask meaningful questions and derive insights from data.

**Structure:**

1. **Warm-Up Discussion:** Allah encourages reflection and asking questions to gain knowledge.
2. **Dataset Exploration:** Data about Ramadan fasting hours in different countries.
3. **Activity:**
   * Ask and answer questions (e.g., which country has the longest fasting hours?).
   * Derive insights (e.g., how fasting hours change across seasons).
4. **Reflection:** How data analysis can deepen our understanding of Islam and help others (e.g., planning iftar distribution).
5. **Quiz:** Formulate questions based on a dataset.
6. **Homework:** Explore a dataset of your choice and write three insights.

**Session 5: Mini-Project & Presentation**

**Objective:**  
Combine all learned skills to complete a mini-project and share findings.

**Structure:**

1. **Warm-Up Discussion:** Teamwork in Islam and the importance of sharing knowledge.
2. **Mini-Project:** Analyze a dataset of the student’s choice. Suggestions include:
   * Halal food exports/imports across countries.
   * Islamic school enrollment rates in different regions.
   * Climate data to determine the best time for Umrah.
3. **Activity:**
   * Clean the dataset.
   * Create meaningful visualizations.
   * Present key insights.
4. **Reflection:** How can data analysis be a tool for serving Islam and humanity?
5. **Quiz:** A fun Kahoot-style game reviewing the entire course.
6. **Closing Homework:** Write about how you can use data analysis in your daily life to make a positive impact.

**Session 6 (Optional): Advanced Insights with Data Analysis**

**Objective:**  
Introduce slightly advanced topics and applications for motivated students.

**Structure:**

1. **Warm-Up Discussion:** Importance of striving for excellence (Ihsan) in Islam.
2. **Activity:** Learn about correlation, trends, and predictions using Islamic charity data (e.g., Zakat distribution).
3. **Reflection:** How can insights help solve real-world problems?
4. **Mini-Challenge:** Students find correlations in a dataset (e.g., Ramadan spending trends).

**Key Features Across All Sessions:**

* **Interactive Activities:** Every session has a hands-on component to keep students engaged.
* **Islamic Values:** Each session ties Islamic principles to the lesson.
* **Real-Life Examples:** Practical datasets connect lessons to impactful, relatable scenarios.
* **Homework Assignments:** Reinforce learning and foster curiosity.

### ****Revised Structure for the Course****

#### **Session 1: Introduction to Data Analysis**

* **Objective**: Introduce data analysis and its importance.
* **Key Topics**:
  + What is data analysis?
  + Real-life examples of data analysis.
  + Introduction to Python and Jupyter Notebooks.
* **Activity**: Analyze a simple dataset of Quranic surahs (number of verses).

#### **Session 2: Data Preparation and Cleaning**

* **Objective**: Teach kids how to prepare and clean data for analysis.
* **Key Topics**:
  + What is data cleaning? Why is it important?
  + Handling missing data.
  + Removing duplicates and irrelevant data.
  + Formatting data (e.g., converting text to lowercase).
* **Activity**: Clean a dataset of Quranic verses (e.g., remove duplicates, handle missing values).

#### **Session 3: Exploring Data**

* **Objective**: Teach kids how to explore and understand datasets.
* **Key Topics**:
  + Loading and exploring datasets.
  + Basic data manipulation (filtering, sorting, grouping).
  + Introduction to Islamic datasets (e.g., Quranic verses, Hadith collections).
* **Activity**: Explore a dataset of Quranic verses and analyze the distribution of topics.

#### **Session 4: Data Visualization**

* **Objective**: Teach kids how to visualize data using Python (Matplotlib, Seaborn).
* **Key Topics**:
  + Bar charts, pie charts, and line graphs.
  + Visualizing Quranic data (e.g., word frequencies, surah lengths).
* **Activity**: Create visualizations for Quranic topics (e.g., pie chart of topics, bar chart of surah lengths).

#### **Session 5: Advanced Data Analysis**

* **Objective**: Introduce more advanced concepts like grouping, aggregation, and correlation.
* **Key Topics**:
  + Grouping data by categories (e.g., Meccan vs. Medinan surahs).
  + Calculating correlations (e.g., between surah length and revelation order).
  + Introduction to machine learning (optional, basic concepts).
* **Activity**: Analyze the relationship between surah length and revelation order.

#### **Session 6: Final Project**

* **Objective**: Apply everything learned to a real-world Islamic dataset.
* **Key Topics**:
  + Choosing a dataset (e.g., Quranic verses, Hadith collections, Islamic history).
  + Cleaning, exploring, and visualizing the dataset.
  + Presenting findings.
* **Activity**: Kids work on a final project analyzing an Islamic dataset and present their findings to the class.