INTEGRATION DOCUMENTATION

**1. Data Import Process**

**Step 1: Exporting Data from the Source**

* The data for this project was retrieved from an Excel file containing structured data.
* Datasets included: Regions, WaterQuality, and HealthData.

**Step 2: Creating an Excel Workbook**

* A new Excel workbook was created, and separate sheets were established for each dataset:
  + **Regions**: Data on regions, access to clean water, and total cases of waterborne diseases.
  + **WaterQuality**: Data on different water source types and their contaminant levels.
  + **HealthData**: Data on disease occurrences across various regions.

**Step 3: Importing Data into Excel Sheets**

* Data was imported into their respective sheets in the Excel workbook using the "From Text/CSV" or "From Clipboard" option.
* Data was organized and cleaned for consistency.

**Step 4: Creating Pivot Tables**

* **Pivot Table for Region vs. Total Cases**:
  + Located in the PivotTable\_Region\_Cases sheet.
  + Summarizes the total number of waterborne disease cases by region.
* **Pivot Table for Water Source Type vs. Average Contaminant Levels**:
  + Located in the PivotTable\_Water\_Quality sheet.
  + Shows the average contaminant levels by different water source types.

**Step 5: Creating Charts**

* **Bar Chart for Region vs. Total Cases**:
  + Created in the PivotTable\_Region\_Cases sheet.
  + Visualizes the total cases of waterborne diseases per region.
* **Pie Chart for Water Source Type Distribution**:
  + Created in the PivotTable\_Water\_Quality sheet.
  + Shows the distribution of contaminant levels by water source type.
* **Line Chart for Access to Clean Water vs. Reported Diseases**:
  + Created in the Access\_vs\_Cases sheet.
  + Illustrates the correlation between access to clean water and the number of reported disease cases.

**2. Ensuring Data Consistency**

**Step 1: Data Validation**

* **Data Types**:
  + Validated during the import process, ensuring correct data types (e.g., numeric for percentages, text for categorical data).
* **Duplicate Removal**:
  + Checked and removed duplicate entries before importing data into Excel.

**Step 2: Cross-Verification**

* **Manual Check**:
  + Conducted a manual cross-check to ensure that data in Excel matched the original dataset.
* **Consistency across Pivot Tables**:
  + Reviewed pivot tables to confirm accuracy in summarization and calculations.

**Step 3: Testing the Interactive Dashboard**

* **Chart Interactivity**:
  + Tested slicers and interactive elements to ensure they worked correctly with charts and pivot tables.
  + Verified that charts updated dynamically with applied filters.

**Step 4: Performance and Usability Testing**

* **File Performance**:
  + Checked for responsiveness and smooth interaction with the Excel file.
* **Usability**:
  + Reviewed the dashboard for ease of use and clarity, ensuring that visual elements and layout were user-friendly.

**Conclusion**

* The data was successfully imported, organized into pivot tables, and visualized through charts.
* Data consistency was ensured through validation and cross-verification.
* The interactive dashboard was tested for functionality and performance, providing a reliable and user-friendly interface for data exploration.