### **Integration Documentation: Ensuring Data Consistency**

#### **1. Export Data from the Database**

**SQL Query Used:** Exported the required data from the database using the following SQL query:  
  
SELECT

s.SchoolName,

st.StudentName,

st.Age,

st.Gender,

st.GradeLevel,

st.PerformanceScore,

r.ResourceType,

r.Quantity,

pm.MetricType,

pm.MetricValue

FROM

Schools s

JOIN

Students st ON s.SchoolID = st.SchoolID

JOIN

Resources r ON s.SchoolID = r.SchoolID

JOIN

PerformanceMetrics pm ON s.SchoolID = pm.SchoolID;

* **Export Method:** The result of the query was exported as a CSV file using the SQL tool’s export functionality.

#### **2. Import Data into Sheets**

* **Method:** Imported the CSV file into Sheets using the “Import” feature:
  1. Opened Sheets and navigated to **Files > Import > Upload > Drag a file.**
  2. Selected the exported CSV file and clicked **Load** after reviewing the data preview.

#### **3. Validation Steps in Excel**

* **Data Types Check:** Verified that the columns had correct data types:
  + Text columns (e.g., SchoolName, StudentName, Gender) were formatted as text.
  + Numerical columns (e.g., PerformanceScore, Quantity) were formatted as numbers.
* **Spot Check:** Compared sample rows from the database export with the rows imported into Sheets to ensure accuracy.

#### **4. Handling Data Discrepancies**

* **Issue Detected:** Noticed a discrepancy in PerformanceScore values due to a rounding error.
* **Solution:** Adjusted settings to increase the number of decimal places displayed in the affected cells, ensuring consistency with the database values.

#### **5. Consistency Check**

* **Cross-Verification:** Manually cross-verified key metrics (e.g., highest and lowest scores) against raw data in the database.

#### **6. Ensuring Data Refresh Capability**

* **Connection Setup:** Established a data connection in Sheets that links back to the original CSV file. This allows for easy updates if data in the database changes.
* **Refresh Test:** Tested the Refresh All functionality to ensure that updates in the source data are accurately reflected in Sheets’ and charts.

#### **7. Final Validation and Testing**

* **Dashboard Testing:** Performed thorough testing of the interactive Excel dashboard to ensure tables were filled correctly and that the data displayed accurately matched the original dataset.