INTEGRATION DOCUMENTATION

Project Title: *Addressing Mental Health Challenges within SDG 3: Good Health and Well-being*
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1. Overview

This document outlines the integration process for importing data from a relational database into Microsoft Excel, ensuring data consistency, and setting up an interactive dashboard. The integration is part of a project addressing mental health challenges, specifically focusing on suicide rates among teenagers and the availability of mental health services.

2. Data Export from SQL Database

1. **Database Schema and Structure:**

   o The database consists of three main tables:
      ▪ Suicide_Rates: Contains data on suicide rates by region, year, and demographic factors.
      ▪ Mental_Health_Services: Records the availability and types of mental health services in different regions.
      ▪ Teenagers: Contains demographic information about teenagers, including region, age, gender, and socioeconomic status.

2. **SQL Export Process:**

   • SQL queries were written to extract data from these tables. For example

   *SELECT * FROM Suicide_Rates;*
   *SELECT * FROM Mental_Health_Services;*
   *SELECT * FROM Teenagers;*

   o The results were exported into CSV files, named as follows:
      ▪ suicide_rates.csv
      ▪ mental_health_services.csv
      ▪ teenagers.csv

3. **Export Validation:**

   o Cross-checked a sample of the exported data with the database to ensure accuracy and completeness.

3. Importing Data into Excel

1. **Import Process:**

   o **Step 1:** Open Microsoft Excel.
   o **Step 2:** Go to **Data** > **Get Data** > **From File** > **From Text/CSV**.
   o **Step 3:** Select each CSV file (suicide_rates.csv, mental_health_services.csv, teenagers.csv).
   o **Step 4:** Follow the import wizard, ensuring that the data types (e.g., text, numbers, dates) are correctly recognized.

2. **Sheet Organization:**

   o Data from each CSV file was imported into a separate Excel sheet:
     ▪ **Sheet 1:** Suicide Rates
     ▪ **Sheet 2:** Mental Health Services
     ▪ **Sheet 3:** Teenagers

3. **Data Integrity Checks:**

   o After importing, the following checks were performed:
     ▪ **Column Alignment:** Ensure that each column in the Excel sheets corresponds to the correct data field.
     ▪ **Data Completeness:** Confirm that no data was lost or truncated during the import.
     ▪ **Data Types:** Verify that numerical values, dates, and text are properly formatted in Excel.

4. Data Consistency

1. **Validation Against Source Data:**

   o Random samples of the imported data were compared with the original SQL database to ensure consistency.
   o Pivot tables were created to compare summary statistics (e.g., average suicide rates) between the database and Excel.

2. **Handling Data Discrepancies:**

   - Any discrepancies found were resolved by re-importing data or correcting errors in the data processing steps.

3. **Linking Data in Excel:**

   - Data from different sheets were linked using Excel functions (e.g., VLOOKUP, INDEX-MATCH) to enable cross-referencing between tables.

5. Setting Up the Excel Dashboard

1. **Interactive Elements:**

   - **Pivot Tables:** Created to summarize and analyze data.
   - **Charts:** Bar charts, line charts, and pie charts were used to visualize the data.
   - **Slicers and Timelines:** Added to the dashboard to allow users to filter data by year, region, and other factors.

2. **Dashboard Layout:**

   - The dashboard was designed to present a clear and intuitive view of the data, with key insights easily accessible through interactive elements.

3. **Data Refresh Process:**

   - Instructions were documented on how to refresh the data in Excel if new data is imported from the database:
     - **Step 1:** Update the CSV files with new data.
     - **Step 2:** Go to **Data** > **Refresh All** in Excel to refresh the linked data tables.

6. Testing and Verification

1. **Test Scenarios:**

   o Various scenarios were tested to ensure the dashboard functions correctly:
      ▪ **Filtering Data:** Testing slicers and timelines to ensure they filter data as expected.
      ▪ **Updating Data:** Ensuring the dashboard correctly reflects updates when data is refreshed.
      ▪ **Calculations:** Verifying that calculated fields (e.g., averages, totals) are accurate.

2. **Error Handling:**

   o Documented steps for troubleshooting common issues (e.g., data not refreshing, incorrect chart displays).

3. **Final Verification:**

   o A final review was conducted to ensure all aspects of the integration were functioning as intended.

Conclusion

The integration process successfully linked data from the SQL database into an interactive Excel dashboard, ensuring data consistency and accuracy. This documentation provides a comprehensive guide for maintaining and updating the integration in the future.

DATA SPREADSHEET LINK
https://docs.google.com/spreadsheets/d/1u9v0YLPiaxlAhKQMq9bw1L7Rd1DrWEP1Qd9zyOIHmZI/edit?usp=sharing

PITCH DECK LINK
https://nadiahirwa.my.canva.site/cream-neutral-minimalist-new-business-pitch-deck-presentation