Lesson 05: Healthcare Analytics

Overview

In this project, you will optimize patient healthcare by leveraging Tableau to integrate and analyze diverse data sources. The goal is to improve operational efficiency and research progress within a healthcare organization's analytics team. You will merge patient records, clinical trial results, and external research to generate insights that enhance patient care and inform decision-making processes.

Instructions

- Review the learning materials in Lesson 05
- Carefully read the situation, task, actions, and result sections to grasp the assignment fully
- Complete and submit your assignment via the Learning Management System (LMS)
- Use **patient_demographics, treatment_outcomes, lab_tests, external_research, patient_visits, and patient_records** provided in the Reference Material section on LMS

Situation

As a data analyst in the healthcare sector, the main problem is the fragmentation of data sources, hindering comprehensive patient care analysis and decision-making. The company needs to integrate patient demographics, treatment outcomes, lab tests, and external research to gain holistic insights to optimize patient outcomes effectively.

Task

As a data analyst at MediData, integrate and analyze diverse healthcare datasets to optimize patient outcomes. Establish data relationships, consolidate through joins, perform trend analysis via unions, and enhance internal data with external research to inform decision-making.

Actions

1. **Establishing Data Relationships**

   - Open Tableau and connect to data:
     - Start Tableau and use the **Connect to Data** option to connect to the **patient_demographics** and **treatment_outcomes** dataset
   - Create Relationship:
     - Drag the **treatment_outcomes** dataset to the right side of the first dataset

2. **Data Consolidation Through Joins**

   - Prepare for Join:
     - Ensure both the patient records and laboratory test results datasets are added in the Data Source tab
   - Create a Join:
     - Right-click on lab_test.csv in the drag area and select Open
     - Drag the **patient_records** dataset to the right side of the **lab_records** dataset

3. **Trend Analysis Via Data Unions**

   - Prepare for Union:
     - Ensure both the patient records and laboratory test results datasets are added in the Data Source tab

   - Create a Union:
     - Click on the **New Union** option
     - A box will appear on the screen. Drag the **patient_records** dataset to the box.
     - Drag **patient_visits** to the box under the first dataset
     - Click OK

4. **Enhancing Internal Data With External Research**
     - Load the **treatment_outcomes** dataset and click on the database symbol above that to add another dataset to the sheet
     - Load **external_research**
     - Open Sheet 1

- Drag the **Outcome** to columns and **Treatment ID** to rows. Also, drag **Outcome** to text from the **treatment_outcomes** dataset
- Drag **Effectiveness** to columns as well as text from the **external_research** dataset

Result

Your submission should include screenshots illustrating each step performed in the word document, showcasing actionable insights on optimized patient records, clinical trial results, and the patient's outcome. Upload the Word document to the Learning Management System (LMS).

Rubric

Your submission will be evaluated based on the following key criteria, each representing a crucial aspect of the project. These criteria are:

Criteria	Complete/Incomplete
Data Connection: Check if the patient_demographics and treatment_outcomes datasets are connected	
Data Relationships: Check if a join between the two tables is created	
Data Unions: Check if a union between the two tables is created	
External Research: Check if external_research is loaded	