**Special Topics: Data Analytics and Visualization in Healthcare**
**CSCI-GA.3033-096 (19635)**
**Midterm Project**
**Due date: October 27 by 11:59 p.m. EST**

**Instructions:**

**Part I**

**Download the following dataset from week 5 on Brightspace: "medical_claims.xlsx", open it in Tableau Desktop and do the following:**

- **Chart 1:**
  - Create a TreeMap with each medical facility's average claims' rejection ratio.
  - Show the labels of the medical facilities.
  - Show the labels of the average claims' rejection ratio using percentages.
  - Rename the title and the worksheet tab name.
- **Chart 2:**
  - Create a visualization that displays the total number of rejected claims by rejection reasons, medical facilities, and departments.
  - Use color to differentiate a higher number of rejected claims from those with lower values.
  - Do not include the null values in the reasons for rejections in this chart.
  - Rename the title and the worksheet tab name.
- **Chart 3:**
  - Display the trend of the claims' rejection ratio.
  - Aggregate data by months and years. month: the trend of the month for multiple years ?
  - Rename the title and the worksheet tab name.
- **Chart 4:**
  - Create a map of the number of claims per country.
  - Rename the title and the worksheet tab name.
- **Dashboard:**
  - Create a new dashboard.
  - Add the previous charts (charts 1-4) to the dashboard.
  - Create a filter for the dates.
  - The date filter should be able to change the data in the different charts on the dashboard simultaneously.
  - Rename the title and the dashboard tab name.

**Submission:**

- The Tableau packaged workbook file (.twbx).
- A write-up that should include the following:
  - Insights for each visualization (at least 1 per chart for full credit).
  - Explanation of the best practices used in the visualizations (at least 1 per chart for full credit).

**Part II**

**Download the following dataset from week 5 on Brightspace: "Tableau for Healthcare – Datasets.xlsx", open it in Tableau Desktop and do the following:**

- In the Tableau Desktop's Data Source page, select the dataset: "City Health Ctr FTE Counts".
- Build a Deviation Bar Chart to compare budgeted and actual full-time employees (FTE) in five city health centers.
    - Create a calculated field to calculate the difference between budgeted FTEs and actual FTEs.
    - Rank the data in the deviation bar chart from highest to lower.
    - Delete the "City Health Center" field label.
    - Color encode the bars. Those bars above the zero line should have one color, and those below the zero line should have another color.
    - Add an appropriate title to your Deviation Bar Chart.
    - Rename your worksheet and save your workbook with an appropriate name.

**Submission:**

- The Tableau packaged workbook file (.twbx).
- A write-up with the following information:
    - What is a Deviation Bar Chart?
    - Steps you took to complete this exercise.

**Note:**

- The midterm project is individual.