Workshop 4- Introduction to Tableau

(Out of 100 marks; DUE DATE: 11:59 PM OCT 22 2023; Late assignments will be 5% less every day; Grade of 0 after THREE days)

This workshop will focus on using Tableau to effectively visualize and declutter TfL (Transport for London) Bus Safety Data. By the end of this workshop, participants will be able to create clear and informative data visualizations using Tableau.

**Prerequisites:**

* Basic knowledge of Tableau is recommended but not required.
* A laptop with Tableau Desktop installed.

**Instructions to Activate your Tableau Desktop:**

1. Download the latest version of Tableau Desktop from [here](https://www.tableau.com/tft/activation)
2. (the link address: <https://www.tableau.com/tft/activation>)
3. Click on the link above and select “Download Tableau Desktop”. On the form, enter your school email address for Business E-mail and enter the name of your school for Organization.
4. Activate with your product key: TCA3-5802-C350-68FB-170B
5. Already have a copy of Tableau Desktop installed? Update your license in the application: Help menu → Manage Product Keys

**Instructions:**

In this lab, you will work on creating some basic data visualizations using Tableau. The goal is to create clear and concise visualizations that effectively convey information. You will earn points based on your performance in various tasks.

Lab Tasks:

1. Connect to Data (10 points)
   * Connect Tableau to a sample dataset given with this workshop. (Excel File: Tfl\_bus\_safety)
   * Data is about London Bus Safety performance. Each row represents 1 victim of a bus accident in London, UK between Jan 2015 and Sept 2018.
   * Now answer the following:

Q1. How many rows and fields does your data have? (10 points)

Q2. List the names and data types of each of the columns? (10 points)

1. Save your workbook
   * Click on Sheet 1
   * Drag and drop Sheet (Count) in the main work area
   * You can see cnt(sheet1) in green color below the markers area and total number of rows displayed on the main area
   * Save your workbook as lastname\_aidi\_workshop4
2. Now answer the following question”

Q3. What story do you think data might be able to tell? Pick 2 questions that you can answer from the data (Hint: Recall lessons from big idea worksheet. Who is your audience? What is the big idea?) (10 points)

1. Create Initial Visualizations
   * **Bar Chart 1**: Using the following steps answer the following:

Q4. Which Borough has the highest number of incidents? Verify the result using a bar graph. (10 points)

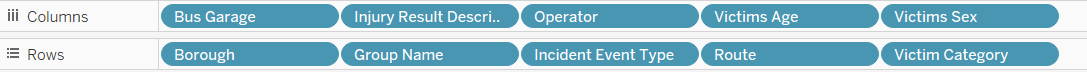
* + - Open up Sheet1
      * We want to know number of injuries per borough
    - Move Borough: Rows
      * Displaying number of incidents for each Borough
    - Drag CNT(Sheet1) to col
      * A green and blue rectangles with white text

        Description automatically generated
    - You should now have a bar chart!
    - Press ctrl+ w or use swap rows to change bar chart from horizonal to vertical
    - Switch back to horizontal
    - Use the sort descending button to sort the bars
    - Rename your x axes as Number of Incidence
    - Change the title to “Incidence by Borough”
    - Change the sheet 1 name to “Incidence\_by\_Borough
  + **Bar Chart 2**
  + Using the following steps answer the following questions:

Q5. What are the top two types of incidents that cause injuries in the boroughs? Submit bar chart to verify. (20 points)

* + - duplicate the sheet by right clicking on it
    - Need to explore Locations of various incidents types
    - Drag “Incident Event Type” in rows to the right of “Borough” pill
    - Now we have number of incidents grouped by Borough and then again by incident event type
    - Sort each group independently using the sort descending button
    - Change the title to “Incidents by Borough and Type”
    - Change the sheet name to “Incidents\_by\_Borough\_and\_Type”
  + **Packed Bubbles: Answer the following:**

Q6. Which gender is the most affected by accidents? Submit a chart (you can choose or submit packed bubbles) that visually verify your answer. (20 points)

* + - Start a new sheet
    - add cnt(sheet) to rows
    - In the Show me Tab on the right, choose
    - Add half of the dimensions to rows and other half to columns as follows:
  + 
    - Drag cnt(sheet1) to main view
    - Click on packed bubbles
    - Rename the sheet “Incidents\_by\_Gender” and change the title “Incidents by Gender”

1. Make the dashboard (You can use your creativity here for arrangement, cluttering, and color schemes)
   * Choose create dashboard
   * Choose size to be legal landscape
   * Drop the three sheets on to your dashboard
   * Choose the best arrangement
   * Add Title “London Bus Safety Analysis” by adding a text box to your dashboard
   * Make the title size 14 and bold and place it on top
   * Change the Work sheet titles in Format Workbook to size 12, bold

Q7. Publish your dashboard. (20 points)

**How to Submit:**

Submit a pdf of your answers to questions 1 to 7 along with the link to your final tableau dashboard.