Fox School of Business
TEMPLE UNIVERSITY®

MIS 0855 Data Science (Section 006) – Fall 2017
Assignment #2 – Analyzing Data Using Tableau (10% of the Total Grade)
Due by Monday, October 2nd, 11:59 PM EST

Please read all the instructions carefully.

Task

Use Tableau to analyze and reveal various relationships within a data set.

Scenario

Earlier in the course you worked with a data set containing fuel economy data for 2015 model year cars. Now you're going to work with that same data set in Tableau to answer a series of questions.

Deliverable

1) Take a close look at the data and the data dictionary. Make sure you fully understand the data. Don't jump into the questions too fast!
2) Create a Tableau workbook based on the Excel data file "2015 Car Fuel Econ.xlsx."
3) Find answers to the seven questions below based on your analysis of the data using Tableau. Create one worksheet for each question with a chart that demonstrates your answer.
4) Name each worksheet as "Question 1," "Question 2," and so on.
5) Without a Tableau worksheet that matches with your answer, it will be graded as a zero, even if you fill out a correct one on the answer sheet.
6) Submit both your answer sheet and your Tableau file.
7) Take the hints accompanied with the questions seriously; they will help you!
8) Make sure you are aware of when to use SUM versus AVG.

Questions

Question 1:

a) Which car manufacturer has the highest average fuel economy for city driving?

b) Which car manufacturer has the highest average fuel economy for highway driving?

(HINT: Sort your chart to visualize your answer.)

Question 2:

Which transmission type has the best average combined fuel economy?

(Hint: Use the "Transmission Description" dimension.)

Question 3:

Which manufacturer's compact cars have the lowest average combine CO2 emission?

(Hint: Use a filter for the "Carline Class Desc" dimension.)

Question 4:

Which car model (carline) has, on average, the greatest difference between its highway fuel economy and its city fuel economy?

(HINT: Create a calculated field that subtracts city fuel economy from highway fuel economy.)

Question 5:

What is the relationship between combined fuel economy and engine power (engine displacement)? (i.e., when an engine becomes more powerful, what happens to fuel economy?)

Question 6:

a) What is the relationship between city fuel economy and highway fuel economy?
b) What is the one car model with the lowest city and the lowest highway fuel economy?
   (HINT: To visualize your answer to Q6-b, it is required to put labels with the car model names.)

Question 7:

a) What is the relationship between engine displacement and combined CO2 emissions?
b) Which car models (carlines) get better city fuel economy than highway fuel economy? (HINT: Four models.)
c) What can you say about their CO2 emissions of those cars in (b), compared to the rest of the models?

(HINTS: Use a calculated field to create a categorical variable to display car models (dots) in different colors. Find how we created "Impact of Beverage Price" figure in Day 6-8 in-class exercises. Finally, put labels with carlines on your dots.)

Submission Instruction

1) Submit both your completed answer sheet and your Tableau file into Canvas by Monday, October 2nd, 11:59PM EST. This deadline is firm, and the instructor will not take any extraneous circumstance into consideration that occurs to you such as a PC malfunction or network outages.

2) Late submission is allowed, but there will be 10% penalty per each 12 hours. For example, if you submit in the morning of Oct. 4, a 30% penalty will be imposed on your submission. Therefore, your submission will be graded zero after the noon of Sat, Oct 7.