SAS Project Assignment

SAS Project Assignment consists of two parts. You need to do both parts to complete this assignment.

To do so, you will need to access SAS Visual Analytics (VA). How to Access SAS Visual Analytics Tools.pdf In addition, you will need to use the following resources as supporting material for this assignment:

- Create a basic report using SAS Visual Analytics Designer (4:27)
- Specify properties for the report and report sections (3:09)
- Filter data in SAS Visual Analytics Designer (6:49)
- Create a text input field control report object and set properties and styles (4:46)
- Create a bullet gauge report object and set properties and styles (6:24)
- Create a drop-down list control report object and set properties and styles (6:14)

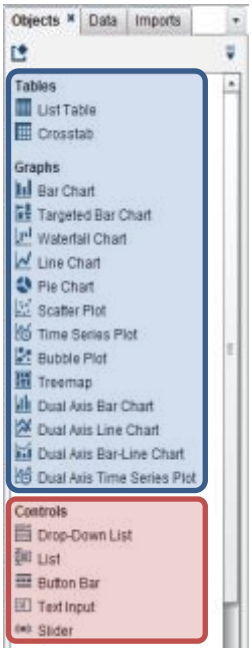
Part 1: Case Situation (5 points)

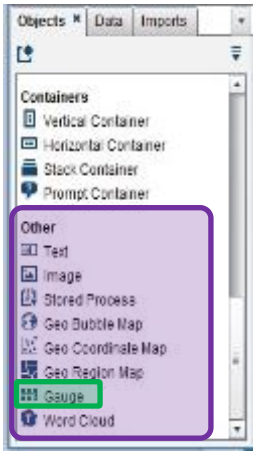
You are the manager of the business intelligence department at Insight Toys Corporation, one of the world's largest toy manufacturers with operations across the globe. Few weeks ago, the company appointed a new Marketing VP, and in a recent presentation he announced a new strategy for some of the best-selling toy products. He asked you for help in developing a case study (a visual story line) that will help the executive team for better and faster understanding of the presented information. In his keynote, he wants to go over some facts about current business performance and then use that data to make the case for a new strategy. The manager is not sure what type of data he will ultimately use in his calculations and he asked to make the report as flexible as possible in order to allow for further explorations, slicing and dicing.

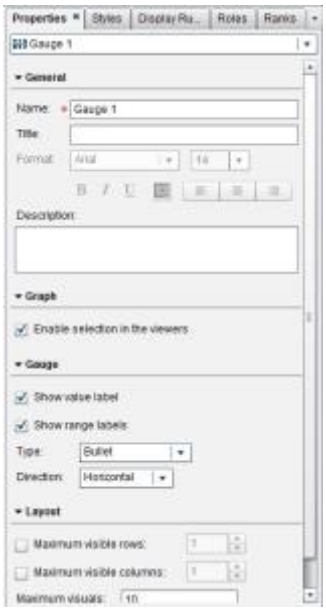
After the meeting, you realized that there are a couple of reports already in place, but they were customized exclusively for the previous VP and they have too many details that may not be useful or even worse- they may confuse the new user. This time you thought that the new report should have a more strategic purpose and that it is designed in a way that make it easy for user to understand and explain. Furthermore, you heard about plans that the company will soon have project-based teams, which will be responsible for new product launches. These teams will have a cross-functional aspect, i.e. it will include people from different departments such as operations, marketing, finance or R&D. This fact makes you think about some anticipating measures and you decide that the new BI reports should be easy to use by other people beside the Marketing VP.

Instructions for report creation:

- Use INSIGHT_TOY_DEMO dataset to create a report (**not visualization**) with at least four sections.
- The BI report should include key facts about company's performance on a global and regional level. These facts should include both financial and marketing related data.
- Try to decide the appropriate visualization tool depending on the data you use. How will the charts be perceived by a simple user? What questions he/she may ask?
- Make use of additional tools such as global and local filters, text inputs and images.
- Use at least eight different charts from both Graphs and Tables objects, three from Controls, two types of Gauge and two from Other (not including gauge). See the pictures below for more details.
- Note that once you add a gauge, you need to set the properties, styles, etc. properly. You can change the type of gauge by modifying its properties.







You need to

- Take screenshots for each section in your report and paste to a Word document for submission with Part 2.
- The screenshots must show that you have all sections within a single report.
- Having each section in separate reports is considered as wrong.
- Your first part is complete. Continue to Part 2 before submission.

Hint:

- You can take screenshots by pressing Alt + PrtScn and then paste on Microsoft Word document.
- You can also use "Snipping Tool" 

available on Windows 7 to capture the screenshots.
- If you cannot find "Snipping Tool", click at the Windows button and type "snipping tool" in the Search box:

Part 2: Using Data Visualization for Problem Solving (10 points)

This assignment will require the use of data visualization techniques in order to investigate specific business or social problems. In this specific case, your task is to creatively combine the available data with the available visualization tools to answer a particular question by applying the scientific method. Try to strike a balance between the best charts/graphs that allow answering the specific question and those that have more power to communicate certain ideas.

Case description

You are an analyst at a healthcare consulting company and your new client is a large hospital chain that wants to deploy a business intelligence solution for its research institution. This institution collects, on a regular basis, data about patients that received treatment in one of their hospitals, but due to lack of appropriate analytical solutions and a shortage of qualified medical analysts, the scientists could not make a significant progress in obtaining useful insights. As part of the engagement, you are assigned the role to assist the scientists in analyzing the data about the patients and provide the information to the medial research team. In addition, you would like to showcase the potential of BI tools in advancing medical research and also to give training to the analysts from the research team.

The scientists from the research institution have a list of hypotheses that they would like to test using the existing patient data. These hypotheses are based on the theories and findings from the latest medical literature. The team shared with you the data about patients with heart diseases (HEART data set) and you are to test the following hypotheses:

- H1: The weight and cholesterol levels are correlated
- H2: Men are usually more obese than women

- H3: Women usually smoke less than men, but their cholesterol level is higher
- H4: The blood pressure is higher for people with higher cholesterol levels
- H5: Heavy smokers tend to die faster than moderate and non-smokers
- H6: Most non-smokers are overweight
- H7: Correlation between weight and height is lower in women than in men

In addition, you were asked to provide 4 distinctive characteristics for people who suffered from coronary heart disease (CHD) and the potential underlying causes of this illness and how the illness can be treated.

Requirements:

- For Part 1, you just need to provide screen captures; NO need for the write-up.
- For Part 2:
    - For each hypothesis (H1 – H7), you must answer clearly whether the hypothesis is true or false, and a short analysis (1-2 sentences) based on your charts (1-2 charts) to support your answer.
    - It is your responsibility to answer with the correct and most relevant chart(s) only. It is NOT the grader's responsibility to determine the right chart from a bunch of wrong and irrelevant charts you throw in. ○ Throwing in multiple incorrect or irrelevant charts will result in ZERO score for that question.
    - For the answer to CHD question, you will need a few paragraphs of analysis with supporting charts. Please keep your analysis concise.

Hint:

- Export graphs from visualization as images and insert into Word document so that you can include your result write-up.
- The best tools for correlation are scatter plot or correlation matrix.

Important Note:

Although, the factors influencing CHD or the unique characteristics of patients with CHD have already been discovered in medical discipline, your data must be based on the data provided in the case. The sole purpose of this assignment is to enhance your analytical skills, not to teach you any medical knowledge. The analysis from this set of data may not be same as the real world knowledge because it is drawn from a limited set of data while the real world knowledge is based on a much larger set of data. For example, although the existing research says that Obesity is a unique characteristic of CHD, it doesn't need to be true for this data set. From this data set, you may find that obesity has nothing to do with CHD patients at all and you may find from this data

set that non-smokers are prone to have CHD but it's not true in real life. Remember, whatever you found from medical research doesn't need to be true in this exercise. You need to verify it by yourself and don't just follow the research.

Your second part is complete. Both part 1 and part 2 should be included in the same file and submitted on Canvas.

Due Date: [December 10, 11:59 PM].

NOTE: **This is individual project**