You are an analyst at a health care consulting company and your new client is a large hospital chain. 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 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 information to the medical 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 in the SAS Viya for Learners platform) and you are to test the following hypotheses:

H1: The weight and cholesterol levels are correlated

The hypothesis is the weight and cholesterol level are correlated. FALSE I think It does not have correlation between these two.

H2: Men are usually more obese than women

Wrong

H3: Women usually smoke less than men, but their cholesterol level is higher

True

H4: The blood pressure is higher for people with higher cholesterol levels

True

In addition, you were asked to provide some distinctive characteristics for people who suffered from coronary heart disease and make some assumptions regarding the potential underlying causes of this illness. Use all the available data to test the hypotheses mentioned above and also provide some data-driven insights regarding the patients who suffered from coronary heart disease.

**Additional Context**

1. Use the SAS Visual Analytics & Statistics software available on the SAS Viya for Learners to complete this take-home individual exam.

2. Access the **HEART** data source. After logging into the software, click Explore & Visualize Data from the upper left menu, click Data when prompted, and select the HEART table. If you see more than one table entitled HEART, simply confirm the table you select has 17 columns and 5.2K rows. It is now available for your research.

3. Explore and analyze the HEART dataset. Leverage what we learned throughout our time together to familiarize yourself with the dataset, consider data quality issues, experiment with different analytic models (hint: don't expect every approach to work), and identify important insights.

4. Your submission will be a WORD document with screen shots and your business language to explain how you explored and derived important insights from the dataset . Prove to me you are a GOOD analyst based on what I taught you (along with everything else I had you consume through reading and videos). It is important that you perform due diligence in exploring and analyzing the data, while summarizing your research through a balance of business language and story telling supported by statistical best practices (topics we covered in class) to validate your takeaways.

5. This is meant to be a thought-provoking exercise that resembles the limited direction you will get in an "industry" job. I understand that each of you have different levels of depth when it comes to statistical analysis. I'm looking for good stories with visualization and models. Do your best, and show me what you learned in this class through a comprehensive approach.

**Final exam submissions are due by October 29th, no later than 4:30 pm. Please upload your submissions through Blackboard.**