Submit the attached is a document (**Template Lab1.doc**) for Lab #1 and copy-paste the information directly into the open text field. These steps are to ensure that your work has been properly submitted. This assignment should be at least 450 words and no more than 1-1/2 pages long with background information about heart disease and addressing each question below.  You must place this brief summary should be written directly in the open text field below and attached as a document to ensure the submission is received. After reviewing this video on heart disease statistics,

Part 1. Select**four (4) variables** (your ideal data-set) that you think would be important to investigate whether or not these statistics on heart disease apply to your township (community).  A data set with 100 observations is attached (see below) to allow you select four (4) variables of your choice. SPSS code must be included to describe descriptive analysis you plan to use for each variable.  For example, if you use the mean,**provide SPSS code (copy-paste) or share steps to produce mean for that particular variable**.  Use this website to learn more about how to use SPSS or refer to the Help section with your SPSS software. For example to find the mean of a variable consider reviewing this step-by-step guide ([https://www.spss-tutorials.com/how-to-compute-means-in-spss](https://www.spss-tutorials.com/how-to-compute-means-in-spss/)/). For categorical variables, consider counts and percents for gender, heart disease or not, etc.

Part 2. **Generate two hypotheses** about why heart disease is prevalent in the United States.

Now that you have observed the population statistics video on heart disease and identified six (6) variables from the Household Data data set, develop hypotheses based on your observations that would help better understand the epidemic of heart disease in America. Review the heart disease map of Governors Township (your community) labeled Map Key.api graphic to create a hypothesis for each of the following:

(1) Create Hypothesis #1?

(2) Create Hypothesis #2?

Be sure to study the map key legend (**May Key.ai file attached below**) to gain an understanding of each symbol on the map. Now that you have a information graphic (statistics) of your community (**TownRoads\_Final.ai file attached below**), describe your next steps in your investigation into heart disease.  The less you rush, the more likely it is that you’ll perform the experiment correctly and record your findings accurately. Also, take some time to think about the best way to organize the data before you have to start putting numbers down. If you can design a table to account for the data, that will tend to work much better than jotting results down hurriedly on a scrap piece of paper. Generate a basic table using SPSS and identify the variables from the map and legend and the categories.

Record the data carefully so you get them right. You won’t be able to trust your conclusions if you have the wrong data, and your professor will know you messed up if the other three people in your group have “97 degrees” and you have “87.”

**Part 3**. Explain how your hypotheses connect to previous research data (from the video) and how your 6 variables would define the purpose of the experiment data.

**Material to review**

I. Review a video.  The videos for the lab exercises can also be find in this dropbox. Click this link [WEB ved-1 (1).mp4](https://assets.adobe.com/link/70f3dcd7-6113-463f-4e7c-cf44ff35eacb?section=activity_public)  (<https://assets.adobe.com/link/70f3dcd7-6113-463f-4e7c-cf44ff35eacb?section=activity_public>)

II. Read about measurement and observation (see below) and Chapter 1 of our textbook.

Measurement and observation are essential elements of science. Either process can be applied to the systematic collection of information, called data (datum is the seldom-used singular).  Data sets are essential to hypothesis testing, and also for the purpose of generating scientific hypotheses.  Whenever you measure or observe something in particular, the thing under scrutiny becomes a variable. Variables are either qualitative, quantitative, or ranks. Qualitative variables must be defined in such a way that every measurement falls into a discrete category. It is easiest to deal with the data if every measurement falls into only one of several mutually exclusive categories, i.e. awake vs. asleep, living vs. dead, male vs. female.

Quantitative data can be either counts, or measurements. Count data are discontinuous, and consist of whole numbers. Measurement data are obtained by applying an in instrument such as a ruler or a spectrophotometer. The precision of the measurement depends upon the fineness of the scale of the instrument. A linear caliper is much more precise than a meter stick, for instance. The accuracy of the measurement is defined by the extent to which the  
instrument was being applied correctly. Thus, precision and accuracy are not the same thing. An inaccurate measurement can be very precise. Precision takes time, is sometimes expensive, and may sacrifice accuracy in some cases. The best measuring instrument for one job will not  
be the best for the next.

Whenever measurements are made, there are potential sources of error. Instruments, and the humans who read them, make spontaneous random errors. Generally, these errors are small relative to the measurement, and tend to be "scattered" in a roughly normal distribution around the true value of the measurement. Thus, the average of multiple measurements will be closer to the true value than any single measurement. In some cases, however, other sources of error (systematic error) may creep into the measurements. Biases occur when instruments are not calibrated correctly, or when a person makes a consistent error in reading them.

When testing scientific hypotheses about biological populations, it is frequently necessary to sample the population as a whole. The process of sampling introduces more potential for random variation into the data set, since no sample will be a perfect reflection of the thing being measured.

In other cases, scientists ask questions about processes that are stochastic in nature; the result of any one event is governed by the laws of probability, but the sum of many events indicates the probabilistic laws governing it. Statistics are an essential scientific tool for summarizing measurements, for describing  
populations, and for hypothesis testing.

As a public health personnel, review the following video presentation to gain a better understanding of epidemiology and statistics of heart disease in the United States of America.

Additional information about hypotheses

* A hypothesis is an educated guess about how things work.
* Most of the time a hypothesis is written like this: "If \_\_\_\_\_[I do this] \_\_\_\_\_, then \_\_\_\_\_[this]\_\_\_\_\_ will happen." (Fill in the blanks with the appropriate information from your own experiment.)
* Your hypothesis should be something that you can actually test, what's called a testable hypothesis. In other words, you need to be able to measure both "what you do" and "what will happen.

Make sure you read and understand the directions and requirements for each Assignment. Please ensure you cite your references in APA format with a minimum of 3 references (You may use your textbook as a reference and you should have a minimum of 2 academic outside references).

Supporting Materials  
Template [Lab1.docx](http://lab1.docx/) (163 KB)  
Map [Key.ai](http://key.ai/) (2 MB)  
Household Data [v2.xls](http://v2.xls/) (39 KB)  
townroads\_final (2).ai (3 MB)  
<https://assets.adobe.com/link/70f3dcd7-6113-463f-4e7c-cf44ff35eacb?section=activity_public> (1 KB)

IBM SPSS