**Part 1 – Week 10 – Getting Started (first part of the template)**

* Provide an introduction that explains the problem statement you are addressing. Why would someone be interested in this?
  + I will be researching the national consumer spending trends by region using data from the bureau of economic analysis as well as bureau of labor statistics. I will attempt to reveal the differences between regions on how they prioritize spending while using the CPI for all urban consumers data retrieval tool that is seasonally adjusted to explain possible spending habits. The data has been compiled over the years of 2017-2019 (Economic Analysis Data) and 2011-2020 (Labor Statistics Data). Taking the macroeconomic data from these years can help producers predict possible spikes in consumer spending so that they are better equipped to provide services and materials when needed. It will provide insight to the relationship of consumer spending and inflation prices, as well as relationships between regions and their spending habits.
* Draft 5-10 Research questions that focus on the problem statement.
  + What are the relationships between consumer spending on housing and utilities for different the regions? (Ex. Maine vs North Dakota).
    - Do these relationships make sense given the information provided by the seasonally adjusted CPI for all urban consumers?
  + What are the relationships between consumer spending on housing and utilities for North American directional regions? (Ex. South vs Midwest)
    - refer to question (1)
  + Using the linear regression of the models created, is there a predictable trend?
    - Can this trend be evaluated to compose a prediction of years to come?
  + Is there a correlation to consumer spending and region, or is it inconclusive?
    - If regions spend less, are they spending more in other areas of their expenses?
  + Are there any peculiarities in the data sets, that can be explained?
    - Use information provided in research papers from the organizations that provided the data set.
* Provide a concise explanation of how you plan to address this problem statement.
  + I plan to construct a multiple linear regression model, and to use the data that is provided from the previously mentioned organizations. Multiple models will be created, and the best fit model will be the one evaluated. By using the percent change from preceding period of personal consumption expenditures by state and region I will be able to not only tell what has happened in the past but possibly predict what will happen in the future. I will use the researched information found on the topics to support my conclusion of data and vice versa. I have previously discussed the methods I will use to do this: multiple linear regression, correlations, other relationships within this data.
* Discuss how your proposed approach will address (fully or partially) this problem.
  + My proposed approach will address this problem by taking data from the past and hopefully revealing a trend. Using the summary of these data sets I can complete a deeper analysis. By scrubbing the data, I will be able to eliminate values that have no use. This will create a data set that in turn will create the best fit model. By using the best fit model I will be able to compile possible outcomes that could happen as well as explain the outcomes that have already happened.
* Do some digging on a dataset that you can use to address the issue.
  + Original source where the data was obtained is cited and, if possible, hyperlinked.
    - [One-Screen Data Search (bls.gov)](https://data.bls.gov/PDQWeb/cu)
    - [Consumer Spending by State | U.S. Bureau of Economic Analysis (BEA)](https://www.bea.gov/data/consumer-spending/state)
    - <https://data.bls.gov/pdq/SurveyOutputServlet>
* Identify the packages that are needed for your project.
  + install.packages ("ggplot2")
  + Install.packages ("dplyr")
  + Install.packages (tidyverse)
  + Install.packages (“Zoo”)
  + Install.packages(“XTS”)
  + Install.packages(“pdfetch”)
* What types of plots and tables will help you to illustrate the ﬁndings to your research questions?
  + Correlation Matrix
  + Bar Graph
  + Line Graph
  + Quantitative variables graph
* What do you not know how to do right now that you need to learn to answer your research questions?
  + I want to know if consumer spending can predict in a way to better serve the consumers themselves, and the providers. Whether that be the government, a company, or an average joe. Are we able to use data to predict human behavior in such a way that will economically/personally help a citizens living experience? Is there a way that we could provide information using history and the data analyzed to explain possible discrepancies, or are there more factors that come into play when examining consumer spending?