Woz-U Data Science Final Project Proposal

Executive Summary

COVID was an airborne virus that shut down the country as a whole. In the beginning, there was little to no known information on how to deal with Coronavirus COVID-19.

Causing the government to send us all into lockdown. There were several federal mandates put into place, placing curfews on small businesses, mask and vaccination mandates, along with businesses being required to take extra COVID-19 precautions. Placing signs and having placemats of 6-feet apart notices. This put small businesses as well as big businesses into a chokehold. Depending on their industry, Technology saw a boom, while other industries like transportation, hospitality, and service saw a major decline.

In this final project, we're going to be using Data Science to discover COVID-19's Impact on Small Businesses. While also looking at how it affected the United States GDP. Using COVIDs, Hospitalizations and Deaths as well as Employment, and Unemployment as independent variables. I'll be using Financial Data fom NASDAQ, DowJones, S&P 500 as well as the number of Businesses that filed for Bankruptcy and the number of Businesses started as my dependent variables.

Business Objectives

To showcase the skills that I acquired through the Data Science program. I will be using Python (Jupyter Notebooks), Tableau, SQL, and other programs to wrangle, analyze, and visualize the "Impact of COVID on Small Businesses and the United States GDP" from datasets made available by an array of different data sources.

At the end of the project I will be able to explain my work in layman's term, and present my findings to other students, faculty, staff, and potential employers, along with other interested parties.

Woz-U Data Science Final Project Proposal

Background

I have decided "Determining COVID-19s Impact on Small Businesses and the US GDP" because of how COVID-19 impacted every person Globally, especially the National economy. I hope to find out how covid impacted Small Businesses due to hospitalizations, deaths, and cases. I'll also be determining how COVID-19 affected America's financial markets such as the NASDAQ, DowJones, and S&P 500.

Scope

I'll be using the softwares taught in the Woz-U program to complete the project. I will be intentional on using tools and technologies that are in high market demand by employers and that may aid me in finding a career opportunity. I may choose to use additional software/tools, but that is not required.

Functional requirements

Data Visualization: Once I have a comprehensive understanding of the insight gathered from different datasets, I will work on visualizing the findings. I'll be using Tableau or other graphing programs to do so. Then I'll compile the visuals and texts into a PowerPoint presentation.

Personnel requirements

I pursued this project alone. Each week I made sure to begin my sprints starting Sunday evening by reviewing last weeks assignments/tasks and moving the completed tasks for the week from "In Progress" to "Completed" in my Trello Kanban Board: (https://trello.com/b/rRgbHrOS/kanban-board-final-project)

I was required to meet once a week with our instructor, Joseph who was also the product owner and Matthew who was my final project mentor. The time we spent on our calls were reflective of that current week sprint and towards the start of next week sprint. If I had any questions I made sure to ask them on our weekly calls.

Woz-U Data Science Final Project Proposal

Delivery schedule

Week 1: Import dataset into preferred software to begin data wrangling. Any unnecessary columns should be removed. Educate myself on COVID-19s Dataset. Set up Github.

Week 2: Study the datasets and ask questions. What are some possible correlations? Is the data normally distributed? What are some predictive models we can make from it? Visualize the data to see if there are any interesting findings.

Week 3: Modeling/Optimization (Combined Stepwise - Forward and Backward Selection) and Machine Learning (Random Forest).

Week 4: Review and validate findings from the previous week and draw insights/conclusions.

Week 5: Compile findings into a Power Point slideshow. Go over it with our instructor and friend/family member to ensure that the presentation is clear and logical. Work on the style and layout of the presentation so it is delightful on the eyes.

Week 6: Make final touches to the Power Point presentation. I will not attempt to come up with a brand-new analysis. There will not be enough time to verify our findings. We should practice presenting at least a couple times with one of Woz-U staff members, and at least once with our instructor.

Other requirements

All the programs used should be free of charge.

Woz-U Data Science Final Project Proposal

Assumptions

The software programs and platforms I will use should be available, up-to-date, and not broken. I will have the project completed before the 6-week time frame.

Limitations

My biggest limitation are working around each persons schedule and being in different time zones.

Risks

The risks that I may encounter are natural disasters, power outages, family emergencies, work conflicts, or broken software/ hardware. I communicate well so the risks of not completing my final project are minimal.