Byron Laferriere

Professor Goggin

CS-499

**Enhancement Three**

1. *Briefly describe the artifact. What is it? When was it created?*

The artifact chosen for this final category was completed in the Fundamentals of Data Mining class, which was taken February 2021. During this class we explored the basics of JMP and used a sample data set for a company named Bubba Gump Shrimp Company. The analysis was to be completed off an Excel document that contained information on 500 random customers. This company was looking for ways to increase future sales and needed this data to be cleaned and analyzed for potential routes that could be taken.

1. *Justify the inclusion of the artifact(s) in your ePortfolio. Why did you select this item? What specific components of the artifact showcases your skills and abilities in software development?*

This artifact is a perfect final addition to my portfolio. I have selected this artifact for this category because it showcases my ability as a software engineer/developer to reproduce past projects and apply them in different scenarios. It also showcases my skills to research README’s and find the pertinent documentation I needed to create and successfully run my project. I learned so many new concepts about pandas, numpy, the Dash framework, and plotly that can be applied throughout my career. Instead of wavering when I faced challenges, I continued to push forward and overcome them. This enhanced artifact now offers the sample company an API to perform their data analysis tasks in a simple manner. I have added security features to the website, that prompt users to sign in before they may access the data. These are not mere enhancements to an existing project. I created an entirely new project that enhanced previous work on a completely different platform. I combined knowledge from many different areas of classes taken and was able to provide an API that did not require specific platforms or programs to successfully run anymore. Users can now navigate to the website, sign in using an authorized username/password, and begin performing data aggregation to look for trends in specific areas of the country. They can easily see how much money has been spent by clients, frequencies, website visits and shopping, etc. This enhanced artifact shows my ability to address a potential weakness and provide a valuable computer science solution to a business.

1. *Reflect on the process of enhancing and/or modifying the artifact. What did you learn as you were creating it and improving it? What challenges did you face? How did you incorporate feedback as you made changes to the artifact? How was the artifact improved?*

Before beginning this enhancement, I believed it was going to be one of the easiest that I had selected, due to previous experience working with client and server development. I believed that I would be able to easily reproduce a project that was previously completed. I was wrong. The environment that was used previously was set up for success and production, mine was not. It took countless YouTube tutorials and documentation to begin learning what I needed to do to set up the project to work. The previous project was also completed on CentOS Linux, so I needed to learn the differences that needed to be addressed to replicate the project on Windows. After finally getting a working API into production, I felt a massive sense of accomplishment and felt that this project now exemplified a desirable skillset for me, as a software engineer/developer. However, as changes were made to the working API, I also began to encounter a new set of challenges. One of the biggest sources of help through these new challenges was StackOverflow. Adding security to the API began drawing new errors that blocked the API from launching. I went back and deleted all of the newly added code and started over line by line, checking that it would successfully compile as I went. I learned the importance of treating modifications to code in the same way that I write new code. Checking code that is added or written line by line, instead of waiting until it is all added, will always save developers time in the end. When I re-inserted updates to the API, I compiled the code as each new line was added, which allowed me to find the exact piece that was causing compile errors. The new enhanced project was better than the original project in three ways. First, the project could now be accessed and used by a wider variety of users for data mining purposes. Secondly, the project now had added security and ensured the data could not be accessed by unwanted individuals. Lastly, the new enhancements added visually compelling components that would allow users to understand more about the area where clients live by adding geolocation abilities, giving it a more personal approach to learning about their clients and making connections.