For the software design and engineering aspect of this artifact, I have decided to improve the IT-145 assignment in which I had created a java program that allowed a user to select from different animals and habitats. This project used very basic coding practices, contained no comments, and wasn’t the greatest.

I feel like this program had a lot of room for improvement and I was able to implement them. By enhancing this artifact, I have demonstrated that I possess well rounded computing practices, substantiated programming skills, as well as the ability to use and adapt to new specifications. By switching this program to python, I will be able to show that I can use multiple languages and implement them based on what I want to create. This project also shows that I am capable of matching industry-specific requirements.

I believe developing a quality GUI helped display a better application and improve its functionality greatly. This development went smooth enough, the only issues being determining some of the aspects of the button lay out through Tkinter.

The data structure of this application was non existent at the start of the improvements and updates. The animals were hard coded in as well as the prompts. Because of this the application required a full understanding of the code and a developer to update the artifact.

Because of the previously mentioned issues with this application I felt this was a great project to demonstrate my data structure abilities. I was able to connect the back and front end of this application together which shows my well-rounded capabilities. I also utilized tuples and a variety of other logical solutions to better show my evaluation and design tactics for complex issues.

One of the major issues I had when creating and implementing the logic of this code was getting the result box to only show specified information based on what was being queried. By utilizing well placed print statements to see what was occurring I was able to determine I needed to add an end to the row. I also was able to add in a global variable to handle some of the tuple events, showing an ability to implement sound solutions as well as efficient implementation.

At the beginning of this application there was no database, there was only a few lines of java code with information already included. Since I was going to use this project for the other two aspects, I wanted to challenge myself to include databases into it.

I believe this was the perfect type of project to incorporate queries and showcase my abilities to manage data. I decided to use SQL features to handle the work of the GUI button functionality.

I had a difficult time getting the update and delete command operational at first. The update command errors ended up being from syntax, and the delete errors were from tuple manipulation error. The artifact has greatly improved as the user wouldn’t have to know anything about databases in order to use this one. Each of the major operations are performed with GUI buttons instead of hard coded information which is a much more robust and versatile option.