CS 499 Enhancement Three: Databases - Narrative

Christine Petrush

I continued to use the artifact that I chose for enhancement one and enhancement two. It is the Pet-Check In program in the Java programming language from IT 145: Foundation in Application Development. The program was designed to check in a pet, cat or dog, into a boarding facility. I took this class and created the program in 2022. This artifact was selected because I thought it would provide a good starting point for a full stack web application. In enhancement one I designed the web page for the front end development and in enhancement three I will create a database for the back end development. The database will be created using MongoDB and will hold the data from the pet registration form.

The course outcome that I planned to do for enhancement three was completed. I added a MongoDB database to my website application thus completing the full stack development. The database stores the registration information from the user. This information includes name, address, phone number, pet type, pet name, email, and password. In addition hash and salt variables are used in the encryption portion of the process to make sure that the passwords are cryptographically secure. A function takes a cryptographically random string and uses it as the salt which is something that primes the algorithm to do the encryption. Then hash uses the hash function sha512 which is a very complex cryptographically secure hash. This means that it is almost impossible for someone to duplicate it with the wrong information. Between the salt and the hash, the password that the user enters is going to be secure and unique. The only update that I have to my original plan is that I decided to use MongoDB instead of SQL for my database.

In reflecting on the process of enhancing and modifying my artifact I learned how a database ties everything together in a full stack development project. I learned how the process begins with the user putting in a request which goes through the internet to the API which “speaks” to the server which obtains the requested data from the database. The data is then sent back to the server, to the API, through the internet and finally back to the user. I learned how API endpoints are created as doors to the server. Finally, I learned how to keep the sensitive data being stored in a database safe and secure through encryption. The challenges that I faced was being able to have all the different components to work together. There are so many different parts and so much to keep track of that at times things could be overwhelming and confusing. Completing each task one and a time helped to keep things organized and complete the project.