CS-499-X2150

Computer Science Capstone – Enhancement One

Software Design and Engineering

Miguel Ovalles

Southern New Hampshire University

The first artifact I have selected to work on is my zooAuthentication Java program. This program I created as my final project in my IT-145 course. This artifact was completed in April of 2018. The authentication program prompts a user to enter their username unless they would like to quit the program. If they choose not to quit, it then prompts them to enter their password. Once they enter credentials, the program goes to a specified set path location, it scans and accesses a credentials file, and confirms the user’s entered credentials. If the credentials are successfully authenticated the user is displayed with text related to their roles. If the user is successful logging in, the program goes back to the designated path as before and scans for a file with the name of the role assigned to the user in the credentials file.

I chose this artifact due to it being one of the most complex programs I worked on. I enjoyed the time I spent working on it throughout the IT-145 course. It took me some time to get it to work and display the data and information, as I wanted it to. In the program, I used different classes to separate the authentication portion of the program, create the prompts that would be displayed to the user as well as initiate the variables that would be used in the program, such as what is stated in the userInputs. It was also one of the more complex programs I worked on. It contained multiple files to work as one program. This concept was something somewhat new to me. I have supported and worked on programs like this, but never as a coder. The first enhancement I made was to update the program by adding additional files for a new role as well as added new users into the credentials file. Some of the new users were assigned to this new role and required a MD5 hash key to be entered as well as a username, assigned password and role. In making these changes I was able to showcase the skills I learned in my courses and especially my IT-145 course. I was able to apply proper coding standards and accurately review an older program which required some updating. I also was able to showcase proper testing. Once I made the enhancement updates, I was required to test that the existing users and roles were still authenticating correctly. I also needed to verify that the new users were accurately being verified as well and that the information of the new role of ‘intern’ was correctly displayed for the users. I needed to make sure that the right role information was displayed for each user as well as the login counter still counted correctly and that the remaining sections of the program were still functioning as expected.

I believe I met the required and planned objectives with both of my artifacts. I was initially worried about how to update my artifacts. I was overthinking the process and what I should do. I reviewed the java program first and was thinking of shifting classes around and maybe adding more to get the program in a more complex state. I decided against that, I felt that in order to do that I would be starting from scratch at that point. My goal for this artifact’s first enhancement was to make it a little more complex. I achieved this by adding additional users to authenticate and have an additional role rile to read and extract the data to display for the new users. This enhancement also provided me the thought of my second enhancement, which was to update the credentials file.

The process to modify and enhance my programs was a little stressful. It has been a while since I completed my IT-145 course, and I have learned different programming languages since I completed this course. I was afraid of not being able to remember the right syntax or not being able to update the programs. Once I decided on the changes, I was planning on making, I then felt more comfortable. This java program was a little complicated while I updated it for my enhancements. I created the additional role file and updated the existing credentials text file. I was able to execute it successfully and authenticate the existing users. For my second enhancement, I made the necessary changes to the file path and created the necessary files as well as updated the credentials file information, but initially I had some issues loading the code into NetBeans as well as running the program successfully. The java classes slowly came back to me and I was able to review the errors and warnings and make the necessary changes to build and execute the program successfully. I learned that comments are very important in code to make sure that if we review code later on or after a large period, they can help refresh us on what each part of the program does. It is also important to continually test code in order to ensure its accuracy and correctness. This will avoid issues down the line. Slowly making updates is key as well. If a program works now, as you update it you can easily break the whole thing. It is good practice to work slowly and test often. If possible, copy the code to a separate location so you do not mess up an existing copy of a program that works. This artifact was improved because it was able to successfully allow for additional users and roles to be added. This displayed its efficiency while also displaying its complexity. It can be easily managed and updated by and admin user or coder as needed.