**Herman Mann**

**CMSC 204**

**Assignment 1**

**Passwords Implementation**

**Graphical user interface, text, application

Description automatically generatedGUI SCREENSHOTS OF ASSIGNMENT 1 Execution (Passwords)**

**Graphical user interface, text, application, email

Description automatically generated**

Graphical user interface, text, application

Description automatically generated

Graphical user interface, application

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Graphical user interface, text, application

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Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application, email

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Graphical user interface, text, application

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Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

**Graphical user interface

Description automatically generatedGithub Screenshot of Assignment 1 (Passwords in directory)**

**Graphical user interface, table

Description automatically generated with medium confidence**

Reflection Paragraphs

Throughout the completion of the Assignment 1 which was on Passwords, I got to learn and experience a lot of different object-oriented programming skills such as exceptions and how to handle them in different methods of the assignment’s implementation. Using the try/catch was very useful in the assignment to catch the exceptions after I tried to check if the isValidPassword method throwed the appropriate exception as needed (ex: LengthException, NoUpperAlphaException, etc). I really enjoyed how the assignment is getting me introduced to the data structures of object-oriented programming, and I am interested to look at these different data structure algorithms as the class goes on. Also, I got to experience more in-depth knowledge and reasoning in ArrayLists, using the static keyword, and using the concept of testing and planning through the use of Junit tests and using Javadoc to make the appropriate commenting on each of the assignment’s implementation methods. The learning of Exceptions and using static served as a great learning experience for this assignment and for future assignments throughout the class.

In the completion of this assignment, I struggled with a couple of things towards the end of things. First, I struggled with the getInvalidPasswords method which it was supposed to get any invalid passwords that did not meet a single password’s requirements. My program came to an error towards the center of the Junit test due to me not throwing the NoSpecialCharacterException in my earlier methods which was the isValidPassword method. I solved the issue by using the java special format of the regular expressions (regex) to return the correct format of the password entered by any user to include the special character within their password(s). Another problem I struggled with were creating the student Junit tests, some methods towards the end of this assignment’s student tests had me thinking about how to approach it. So, my solution to the problem was looking at the other methods of the student test that I had done previously and from there I solved the issue successfully by changing things here and there to make the test work according to the certain test I was doing at the time by following the way the other tests were made and solved to be working successfully after the student test ran through.

When I had completed the entirety of this project, I found out a lot of things to be useful for me and would help me out for the completing of future assignments/projects. I learned and experienced that the use of exceptions will serve me a big deal and help to know for the future and will be a great thing to be well-experienced in the concept of using try/catch for exception handling and things of this sort. Also, Javadoc will help me in the future not just for the upcoming assignments but also in my career of Computer Science, for accurate and important commenting of various programs that I will be coding for bigger and widespread company projects. Also, critical analysis especially learned from the completion of this project implementation will be so useful and demanding in the field for advancement to write larger scope programs with various object-oriented programming techniques. This assignment implementation of passwords helped me in so many great ways its satisfying to know I chose a great career path majoring in Computer Science.