

Raushan Oshan

David Kujit

CMSC 204

22 September 2024

### Learning Experience: Assignment 1

Through the CMSC204 Assignment 1 project, I gained a deeper understanding of various programming concepts, particularly in Java. The project required implementing a password validation utility, which involved developing multiple exception classes, handling user inputs, and ensuring compliance with specified password rules. This experience reinforced my knowledge of Object-Oriented Programming principles and the importance of exception handling to create robust applications. Additionally, working with ArrayLists and static methods helped solidify my understanding of data structures and their practical applications in real-world scenarios.

However, I faced several challenges while working on this project. One of the significant hurdles was ensuring that the password validation rules were correctly implemented and tested. I initially struggled with organizing the validation logic in a way that would throw the appropriate exceptions based on the order of conditions. It required careful planning to ensure that the code was both efficient and easy to read. Additionally, integrating the GUI with the backend logic posed challenges, particularly when it came to managing user interactions and displaying relevant error messages. Debugging these issues took considerable time and effort.

In future projects, I would adopt a more structured approach to planning the implementation phase. I realized that focusing on a detailed UML or pseudocode outline before jumping into coding could have saved me time and reduced confusion. Moreover, I would dedicate more time to writing and running JUnit tests as I developed each component, rather than waiting until the end. This would help catch errors earlier in the process and ensure that each part of the program functioned as intended before integration. Overall, this project was a valuable learning experience that highlighted the importance of thorough planning, effective debugging, and continuous testing in software development.

### Github Screenshot

