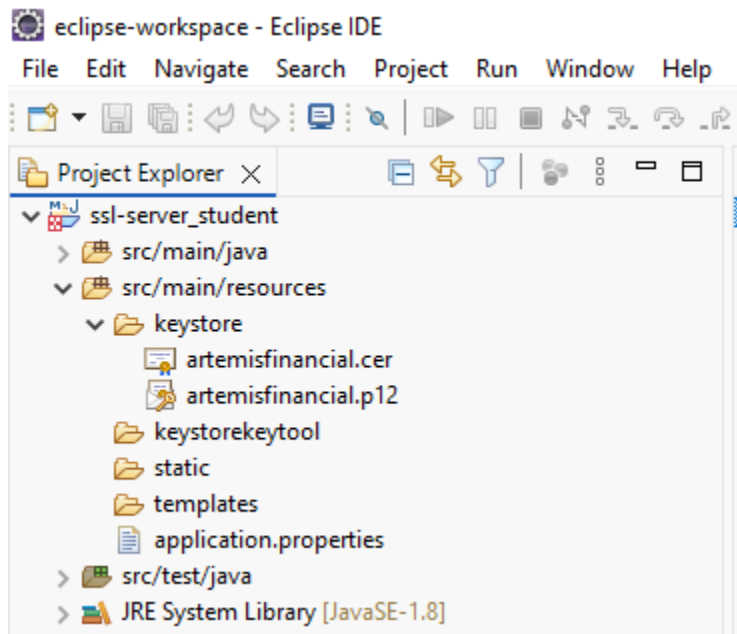


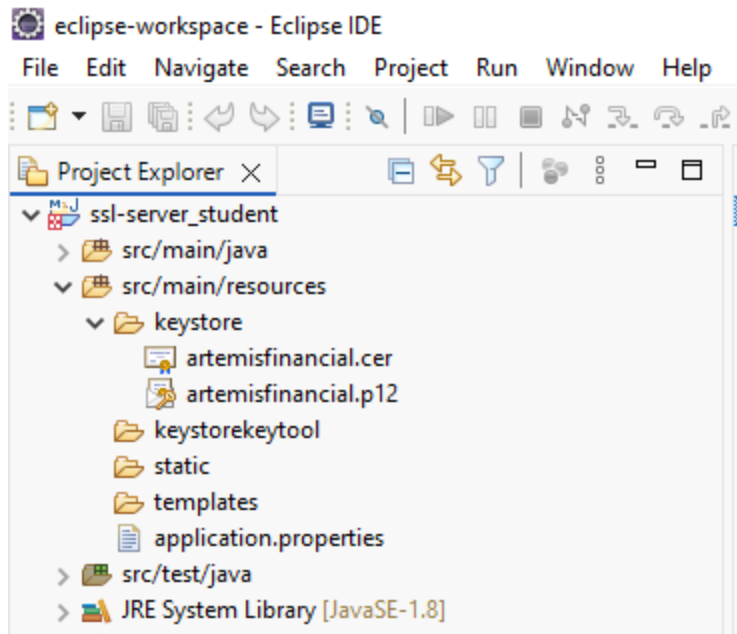
Developer  
Maxwell Sheehan

- Algorithm Cipher

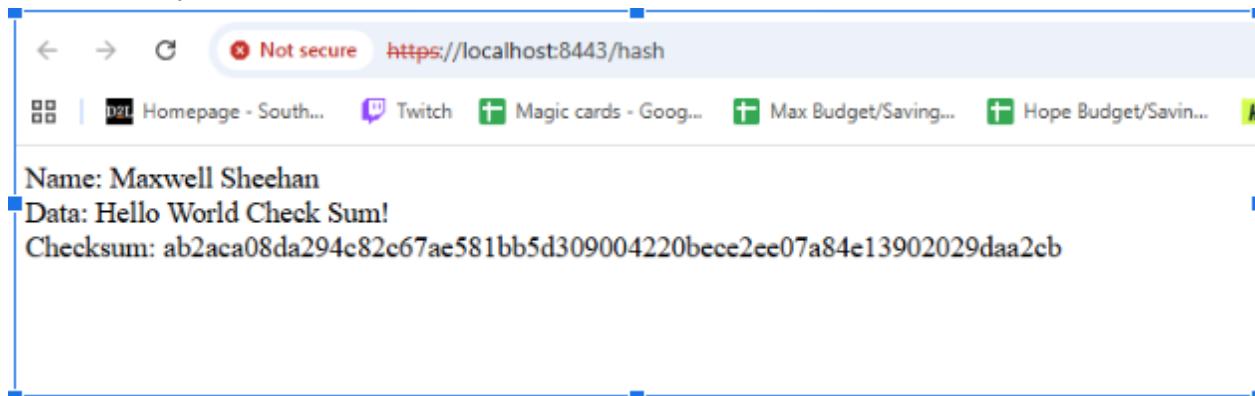
The AES(Advanced Encryption Standard) is the algorithm cipher I'm recommending for Artemis Financial. Its a symmetric block cipher which is deployed in multiple institutions as its increadibly secure for sensitive data. It stores keys up to 256 bits which is increadibly resilient to known attacks, including brute force, as the longer key strings enhance security and increase the time of brute force. AES is an encryption cipher, combining it with SHA-256 ensures data integrity as a hash function. The symmetric key system encrypts and decypts data, to increase the secuirty of the application by removing plain text that can easily be found and exploited.

- Certificate Generation



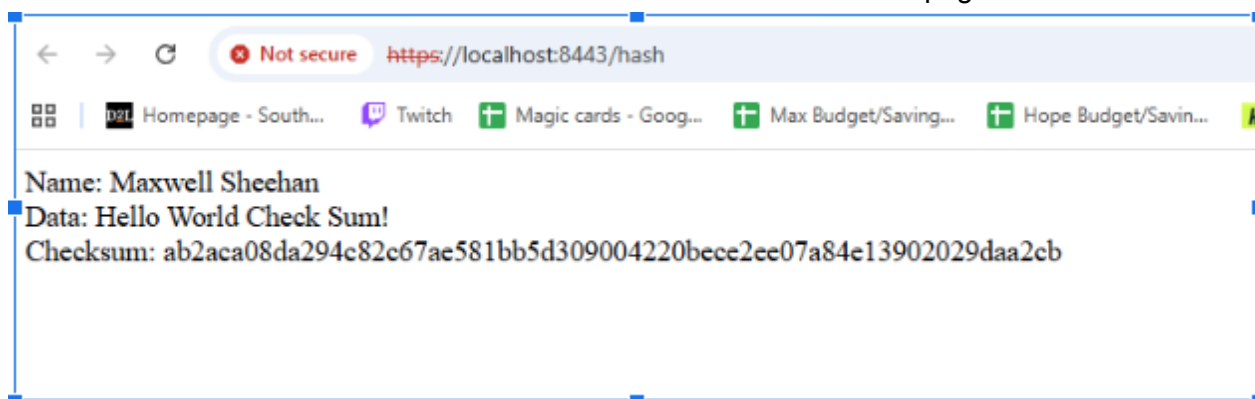


- Deploy Cipher



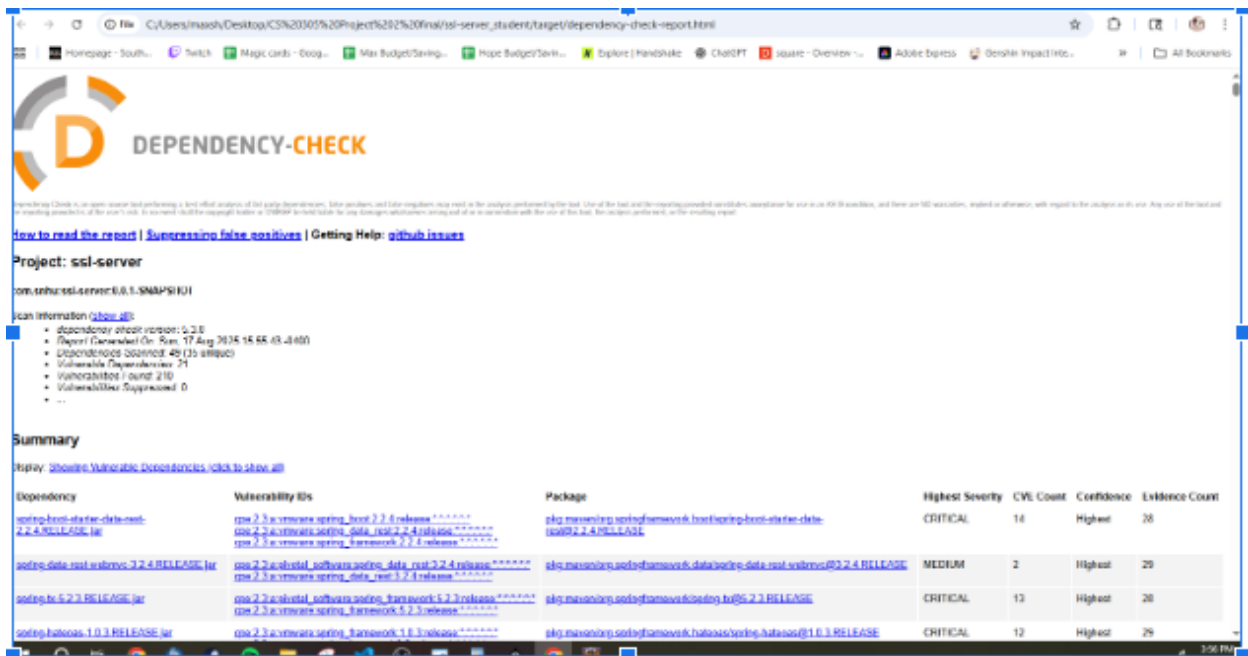
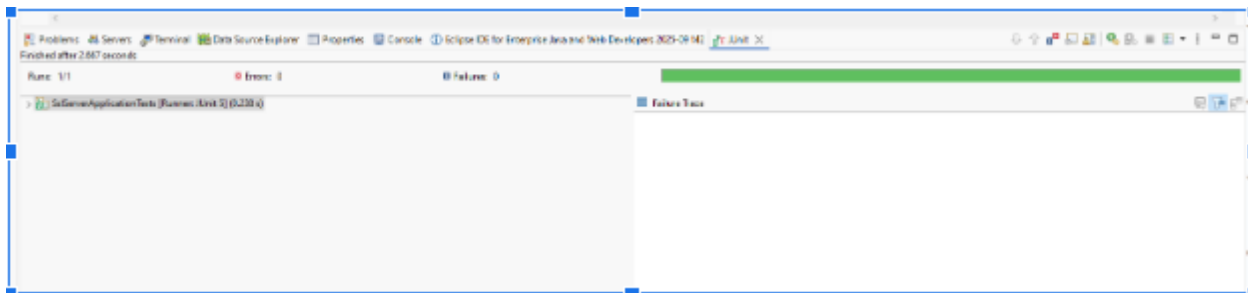
- Secure Communications

Insert a screenshot below of the web browser that shows a secure webpage.



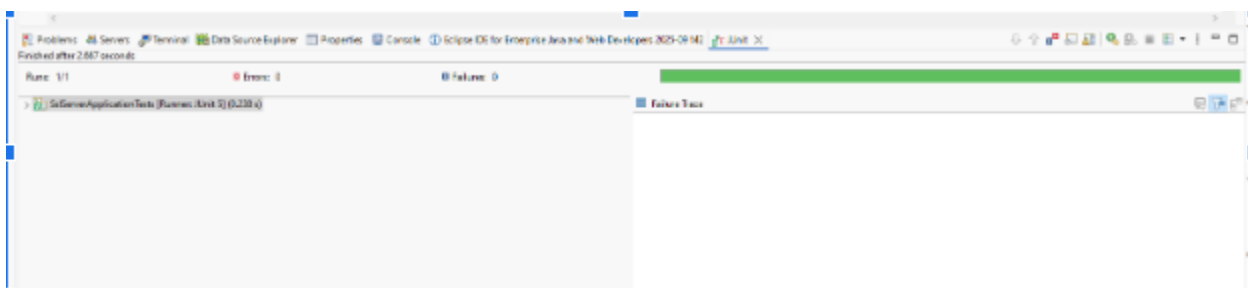
- Secondary Testing

Insert screenshots below of the refactored code executed without errors and the dependency-check report.



- Functional Testing

Insert a screenshot below of the refactored code executed without errors.



- Summary

For security improvements we added SHA -256 hashing at the hasn endpoint, we also implemented HTTPS via PKCS12 keystore to secure our communcations. Specifically input validation has no sensitve data exposed, data in transit is encrypted via HTTPS which is industry standard. We've implemented industy standard and regulatyory cryptography via strong hashing algorithms and ciphers. We also tested and refactored our code to ensure no vulnerabilites were introduced.

- Industry Standard Best Practices

We ensured our code starts cleanly via Spring Boots tests, this allows the code to be more modularized and scaled further in the future if the company grows. We used the industry standard and regulatory recommended algoirhims and ciphers for strong standardized cryptography. This is seen with SHA -256 and using HTTPS instead of the unsecure HTTP. By meeting compliance with NIST, and OWASP we also impvoed the companys position and general public trust.