**Module Five Encryption**

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**CS-405 Secure Coding**

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The project requires implementing an XOR-based encryption and decryption mechanism. It also needs to be able to read from an input file, encrypt its contents, save the encrypted data to a new file, and then decrypt it back to confirm accuracy.

I began by analyzing the provided Encryption.cpp file to identify the incomplete TODO sections. I implemented the XOR encryption in the encrypt\_decrypt function to make sure that the transformation was based on the key. I completed the read\_file functions to save the student’s name, timestamp, key used, and the encrypted or decrypted data in the correct format.

Visual Studio flagged the use of localtime as unsafe, so I replaced it with localtime\_s to ensure safer handling of time data. After fixing the errors, the program initially failed due to an empty string being passed for encryption. I was able to correct the error not being able to read the inputdatafile.txt and resolve the issue.

I validated that both output files generated and confirmed that the decrypted file matched the original input file working as expected. All functionality for this assignment has been met according to the requirements.

A screen shot of a computer

Description automatically generated