**Module Five Encryption**

Joseph Veneski

Department of Computer Science, Southern New Hampshire University

CS-405 Secure Coding

Professor Kaan Esendemir

April 7, 2024

**Module Five Encryption**

**A screenshot of a computer

Description automatically generated**

**Summary:**

Requirements for this assignment included transforming source data by XOR, reading input from a file into a string, and outputting the encrypted and decrypted files. XOR encryption was the first section completed and only required modifying one line:

A computer screen shot of a program code

Description automatically generated

Working sequentially through the source code file, the read\_file method was modified. The program attempts to open the input file and reads the data into a string to be worked with later, notifying the user if it fails.

A screen shot of a computer program

Description automatically generated

Finally, two files are generated: encrypteddatafile.txt and decrypteddatafile.txt. Again, a check is used to verify successfully opening/creating the file before attempting to write data to them. The files are saved in the specified format with the first line being the student’s name, second line a timestamp, third line the key used and remaining lines for the actual data. Originally was planning to use localtime to pull current time but compiler threw error informing me this was no longer a secure option. Changed code to utilize localtime\_s and a tm structure to mitigate risk of potential concurrency issues or overruns.

A screen shot of a computer program

Description automatically generated