Joseph Les

CS 405 Professor Hodde

Encryption Coding

During the debugging process of the `Encryption.cpp` program, the primary focus was on implementing and verifying the functionality of XOR encryption, file reading, and file saving. Initially, the `encrypt\_decrypt` function lacked proper XOR operations for data transformation. The correction involved modifying the loop to apply XOR between each character of the source string and the corresponding character in the key, considering the key's length. Additionally, the `read\_file` function was initially returning a hardcoded string instead of reading from a file. This was corrected by implementing logic to open the specified file, read its contents, and return them as a string. Lastly, the `save\_data\_file` function was enhanced to properly write the student’s name, key, and data to the output files, ensuring proper file I/O operations.

These corrections addressed the logical and functional bugs present in the initial implementation. Ensuring proper XOR encryption and file operations were critical for achieving the intended program behavior. By addressing these issues, the program was able to successfully read the input data, perform encryption and decryption, and save the results to the appropriate files, as confirmed by the successful execution and output messages. The debugging process was thorough and effectively resolved all identified issues, resulting in a correctly functioning program.

A screen shot of a computer

Description automatically generated