To complete the encryption and decryption assignment, I first worked on implementing the missing functionality such as reading the data from an input file to a string object. I made use of an object called stringstream to take the data from the input file and turn it into a string that could be used by the application. Next, I implemented the code needed to save a file to the local filesystem. I used an output file stream to output the data to a file. My favorite part of the assignment was implanting a function that can create a timestamp in the format “YYYY-MM-DD” based on the current system time. I used a time\_t of the current time, turned it into a tm struct, and then used the tm struct along with a string stream to create the timestamp string. If for some reason the process fails, it returns a hard coded date of “2022-10-30” which is an arbitrary date that allows the application to still function in the case where generating a timestamp fails. Lastly, I modified the input file to contain my name, the URL of the website I used to generate the lorem ipsum, and the three paragraphs of lorem ipsum that I generated for use in this assignment. As you can see by the output files, the data was properly encrypted and decrypted by the XOR cipher. Even though it’s shown in plain-text in the output files, the key I used for the assignment is “AVerySecurePassword”.

Screenshot of console output and errors list, and build output:

A picture containing text, electronics

Description automatically generated

Graphical user interface, text, application

Description automatically generated

A screenshot of a computer

Description automatically generated with medium confidence