Project 4 – Vigenère cipher

Overview

This project in to implement the Vigenère cipher: an early form of encryption for text. This form of encryption was first used around the year 1500, and was thought to be unbreakable until 1868. With an appropriately sized truly random key, this can be 'perfect' encryption.

Requirements

Your program should be able to both encrypt and decrypt files. It will first ask if the user is encrypting or decrypting. It will then ask for the input file, the output file, and finally it will have the user type the encryption key. If encrypting, the ciphertext should be written to the output file. If decrypting, the decrypted plaintext should be written to the output file.

Encryption Details

You should encrypt only alphabetical characters. Any character which isn't a letter (punctuation, numbers) should be written to the output file without modification. White space (spaces, newlines) may be removed if you like. Your encryption should also CAPITALIZE all letters and the encryption key should be all CAPITAL letters. This capitalization was done to simplify things, but if you want to support lower case then go ahead.

Sample Output

Below is an idea of what kind of output your program should have.

```
Are you encrypting or decrypting? 1 for encrypt, 2 for decrypt: 1
Input file name: wordsSimple.txt
Output file name: wordsSimpleEncoded.txt
Please enter the encryption key: WAFFLES
Encryption complete.
```

Programming Languages

You may use any programming language as long as you confirm it with me first. This course will be centered on C++, so that is my recommendation.

Grading

The assignment is worth 100 points. You will be graded on the following criteria:

Header comment block with name, class, date, project	10
Input file is read correctly	10
Encryption/decryption follows above specification	50
Output file is written correctly	10
File can be encrypted, then decrypted, and contents is the same	20
Total	**100**

If your code doesn't compile, there is an immediate 30 point penalty.

Submitting your work

Your work should be submitted as an archive (.zip, .7z, .rar) on Moodle. This archive should include all of your source code files. Please do not submit your entire project folder.

This project is due Friday, May 1st at 11:55pm.

NO LATE SUBMISSIONS WILL BE ALLOWED