Assessed Exercise 2
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Final state

The program functions as expected and meets the specification for the mono-alphabetic cipher. It does not, however, implement the functionality for the Vigenere cipher.

The method header for 'processFile' in CipherGUI was changed and the method returns an array of characters instead of a boolean as suggested. This adds unnecessary complexity to the program and I am now aware that the characters do not need to be put into an array to be passed to the LetterFrequencies object. If I were to repeat the exercise I would do this differently.

Assumptions

1. The user knows the conditions the keyword must meet i.e. contains no repeated characters and all letters must be uppercase.
2. The input file will not contain more than 2000 characters (to fit in the array, but this array is not necessary).
3. The user will use the same keyword to decrypt a file that was used to encrypt it.
4. The input files are stored in the same directory as the program source code.
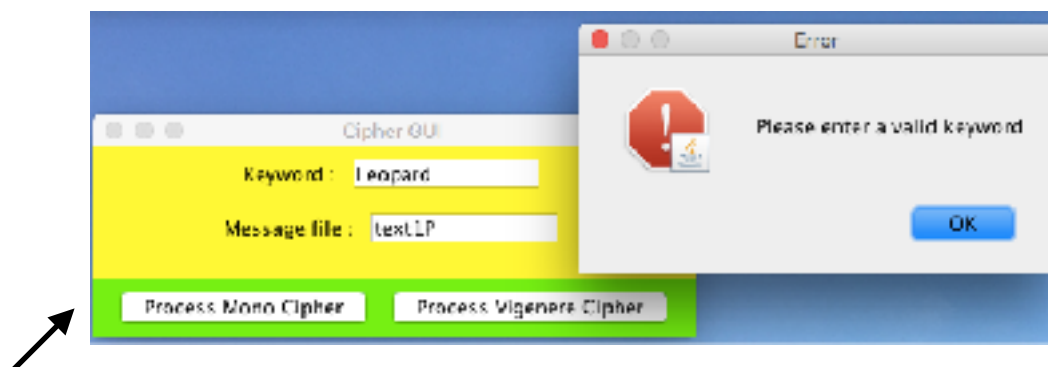
Program does not allow lowercase letters in keyword. The same message appears if there is a repeated letter in the keyword or if the keyword field is empty.
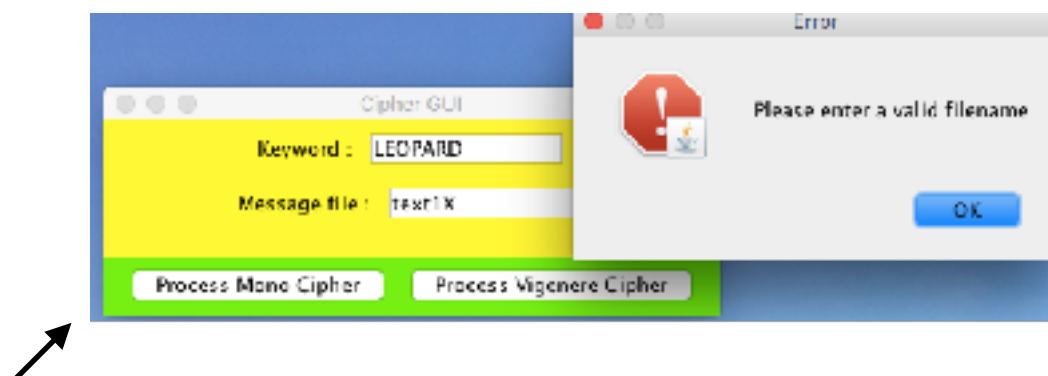
Program does not allow filenames ending in anything other than 'C' or 'P'.
An error is also displayed if the file is not found.

Text1P

Text1C

Text1D

The screenshots above show the plaintext(P), encrypted(C) and decrypted(D) files. The content of the P file is identical to the D file. This was confirmed by eye but in a real-world situation or where the file content was much larger it would be better to use an automated method.

The accuracy of the content of the F file was tested by using the 'Find' function within the TextEdit program (the one used to open the F file) to confirm the frequencies of the first and last letters of the alphabet. Ideally, all of the letters would be checked in this way.