Object-Oriented Programming: Project Documentation

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IMPORTANT

- The cyphertext must **only** be encrypted with a key ranging from **0 – 94** for accurate results (the key range in which is tested for).
- Within the monograms file, replace the "**,**" symbol at line 71 with any other character that already exists within the file, e.g. "a". This will then be replaced with "," later on. (Values were read in based on splitting string on "," character).
- The available monogram file on Moodle has an error. On line 77, the space character is placed after the ",", not before. This needs to be fixed before using the application.

Main Features

1) Enter Cyphertext:

This feature allows the user to manually input a text in which they have encrypted themselves, for the usage of this application

2) Specify a File:

The user can specify a file path of a text file, which contains the text in which they wish to decrypt. This in turn is used to populate a String object, to be used for mapping characters to their frequencies

3) Crack Cipher:

Once the user enters either the text manually or a file path, the system will then decipher the text using many keys simultaneously (concurrent, multi-threaded environment) and return the lowest chi-score, alongside the used key.

4) Display deciphered text:

Once the read-in ciphertext has been cracked, the cipher will then be decrypted again using the key associated with the lowest chi-score. The results are then displayed on screen.

5) (Optional) Specify Thread number:

If the user wishes to specify the size of the Thread Pool, which executes the task of calculating the chi-score, they can specify the number of threads to use from 1-10. This can be used to determine the computational speed of the threads when put under a heavier load.

UML Class Diagram