CS330500: Project 1 - Substitution Cipher

Write a program which cracks a substitution cipher automatically by *frequency analysis*. You need to implement two components in the program

- Frequency analyzer — Leverge the typical distribution of letters in English text to rebuild some part of the decryption table.
- English validator — When there are a few remaining letters, frequecy analysis often doesn't work. In such case, you will need to check if a guess produces a valid English or not.

Input/Output

- Input: The ciphertext of a paragraph of text[1] consists of only the 26 capital Latin letters. For instance,

  UJLIALUGWLUWEMUMOVMNCNONCIHWCJBYL

- Output: The plaintext of the paragraph in lowercase. Follow from the above exmpale, the output will be:

  aprogramcracksasubstitutioncipher

  , which states for "A program cracks a substituion cipher."

Requirements for Submissions

You can use C, C++, or Python3 for the project. If you want to use other PL , notify me first. The source code must be clearly written, formatted, and commented.

Beside source files, you also have to include an insturction on how to compile and execute your program and a supplement explanation to your source code.

[1] All spaces and punctuations are eliminated.