"The Ancient Imitation Game"

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1. Assignment

Create a software tool for Caesar ciphers using Python that have 3 functions:

1. Encrypt a piece of given plaintext with a given key k
2. Decrypt a piece of given cyphertext with a given key k
3. Find the key k and the plaintext when only given a piece of cyphertext

We are only considering the English language for the regular version. Thus, the alphabet space is 26 English letters.

2. Deliverables

1. A short report, clear and to the point.
   a. Min 1 page A4, max 6 pages A4 (excluding appendix)
   b. Suggested structure:
      - Introduction:
        - ✓ What is the task?
        - ✓ What is Caesar cipher?
        - ✓ What are the requirements?
      - Method:
        - ✓ How did you approach this problem?
        - ✓ How did you structure the code?
      - Results:
        - ✓ How to use the code?
        - ✓ Is it fully functional?
        - ✓ One test case per function (put a clear screenshot)
      - Reflection:
        - ✓ What did you do good?
        - ✓ What can be improved?
        - ✓ What did you learn while working on this code?
2. Your code in appendix.

2.1   Report guideline

- Very concise and straight to the point. You do not need a cover page, you do not need contents like: "The purpose of this project……" You do not need 3rd person perspective language, just say "We decided……","We write ……". You do not need background and too much description in detail.
- The report must be logical and easy to read, free from grammar & spelling mistakes.
- Screenshots must be clear and readable.
- I strongly suggest you to just copy and paste your code to the appendix, do not use screenshots, do not worry about the colors and general format that make your code look good, just make sure indentations are there when needed. Do make sure that the code readable, a direct copy from a dark theme IDE may make your code unreadable.
- Recommended format normal text: A4 paper, Arial, size 12, line space: multiple 1.25.
- Submit the report in groups, remember to include your names and student numbers on the report.

2.2   Code guideline

- It should work like what is described in the assignment.(Section 1 of this document)
- You should have necessary comments to the extent that you still can understand each line after leaving it for a week.
- Your code should have a user-interface, either command-line or graphical.
- You must be able to explain your code.

3. Exploratory Bonus – localized cipher tool in Dutch

When an app is being developed, localized contents are quite important for local market.

Can you extend this tool for the Dutch language?

Describe your strategy in details and write the code.