Unit 8 – Cryptography exercise

Create a python program in Codio (you can use the Jupyter Notebooks space provided in the Codio resources section) that can take a text file and output an encrypted version as a file in your folder on the Codio system.

Answer the following questions in your e-portfolio:

- Why did you select the algorithm you chose?

  I have selected ROT13 for its ease of implementation.

- Would it meet the GDPR regulations? Justify your answer.

No

The GDPR specifies putting appropriate technical and organisational measures in place to protect user data and recognises the use of encryption techniques to achieve this. Although the GDPR has not specifically recommended any encryption techniques, it does emphasize the need to take strong measures in protection of data. (GDPR, 2016). The ROT13 is an easy algorithm that could be easily deciphered (Tutorialspoint, 2020)

```
rot13.py    ✕

C: > Users > KIKE > Desktop > pythonprojects > 🐍 rot13.py > ...
   1
   2    # creating 2 variables for the rot13 algorithm technique. the contents in x is r
   3    x = 'ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz'
   4    y = 'NOPQRSTUVWXYZABCDEFGHIJKLMnopqrstuvwxyzabcdefghijklm'
   5    # reading content of text file
   6    with open('c:/Users/KIKE/Desktop/pythonprojects/plaintext.txt') as f:
   7        contents = f.read()
   8        print(contents) #print to screen from text file
   9
  10    ciphertxt = contents.maketrans(x, y) #maketrans function maps the characters in
  11
  12    #write to second text file
  13    with open('c:/Users/KIKE/Desktop/pythonprojects/plaintext2.txt', 'w') as g:
  14        contents2 = contents.translate(ciphertxt)
  15        g.write(contents2) #translate plaintext using the mapping specifies by maket
  16        print(contents2) #print the contents of second text file to screen
  17

PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\KIKE> & C:/Users/KIKE/AppData/Local/Programs/Python/Python310/python.exe c:/Users/
KIKE/Desktop/pythonprojects/rot13.py
i am a good girl
v nz n tbbq tvey
PS C:\Users\KIKE>
```
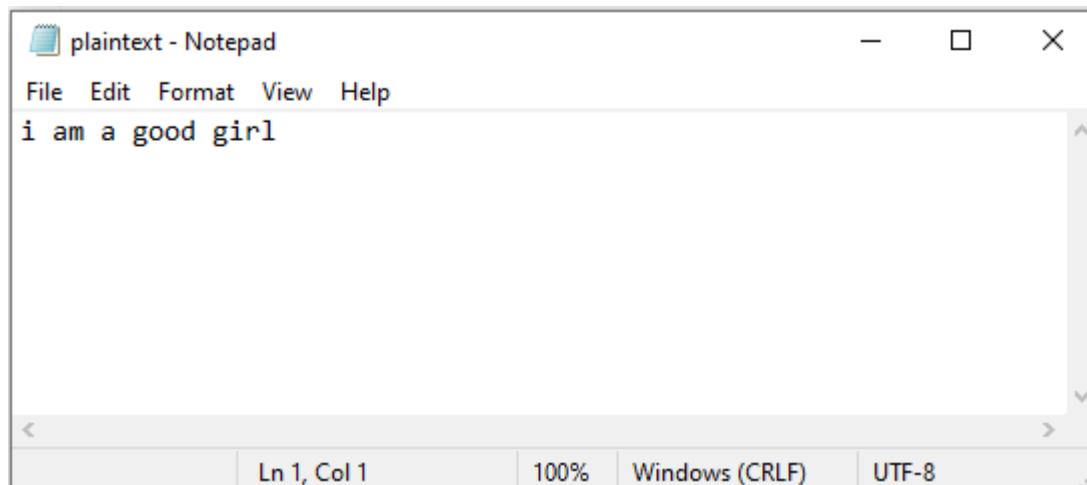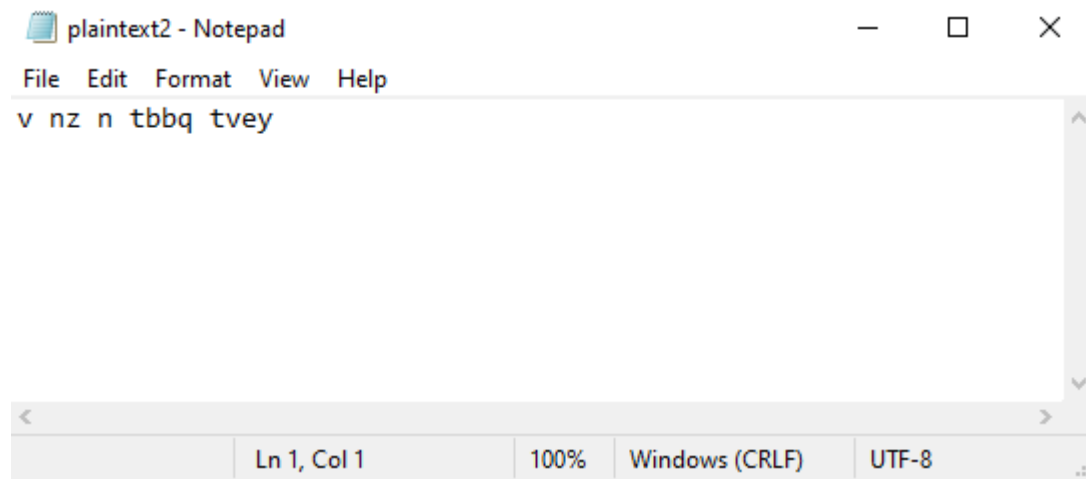
Plaintext.txt contents


```
plaintext - Notepad                              —    □    ✕

File  Edit  Format  View  Help
i am a good girl




                Ln 1, Col 1          100%    Windows (CRLF)      UTF-8
```

Plaintext2.txt contents

v nz n tbbq tvey

References

GDPR (2016) GDPR. Available from: https://gdpr-info.eu/issues/encryption/ [26 October 2021]

TutorialPoint (2020) Cryptography with Python Tutorial.