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'''Vignere Cipher - cryptographic module - Divya Aradhya 7/29/2017 '''
# =====

import string

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'''Ceasarean Cipher'''
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def CharToNumber(CharToConvert) :
    '''converts a single character in a string to its Unicode value using
        the ord() function, and then subtracts 32 from its to convert it
        to a whole number from 0 to 94, and returns that integer value'''
    return (ord(CharToConvert)-32)
# -----
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def NumberToChar(NumberToConvert) :
    '''converts an integer to one in the range 0 to 94, using the %95
        operator, and then once the number is in the range 0 to 94, add
        32 to it and use the chr() function to convert it into a
        character'''
    return chr((NumberToConvert % 95)+32)
# -----
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def EncodeCeasar(PlainText, NumberToShift) :
   RetVal = ''
    for NewChar in PlainText :
        RetVal = RetVal +
NumberToChar(CharToNumber(NewChar)+NumberToShift)
    return RetVal

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def EncodeVignere(PlainText, Key) :

    CipherText = ''
    for i in range (0, len(PlainText)) :
        CharToAdd = EncodeCeasar(PlainText[i],
CharToNumber(Key[i%len(Key)]))
        CipherText += CharToAdd
    return CipherText
# -----
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def DecodeVignere(CipherText, Key) :

    PlainText = ''
    for i in range (0, len(CipherText)) :
        CharToAdd = EncodeCeasar(CipherText[i], -
CharToNumber(Key[i%len(Key)]))

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        PlainText += CharToAdd
    return PlainText
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if __name__ == '__main__':
    MyPrintable = ''.join(chr(i) for i in range(32,126))

    TestText = ['Lions', 'SaintLeo', 'Sunny Florida',
                string.digits, MyPrintable]
    Key = 'Saint'

    for Sample in TestText :
        Code = EncodeVignere(Sample, Key)
        Decode = DecodeVignere(Code, Key)
        print("Sample :" + Sample)
        print("Code   :" + Code)
        print("Decode  :" + Decode)
        if (Sample==Decode) :
            print('Round Trip OK\n')
        else :
            print('ERROR; Round Trip Mismatch\n')
    print ('End Test Run')
# =====

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