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# ========================================================================
'''substitution cipher - cryptographic module - this file implements some
basic
cryptographic functions - Divya Aradhya 6/03/2017 '''
# ========================================================================

import random, string

# ------------------------------------------------------------------------
def Flip(Text):
    '''Flip(Text) - returns the flipped text
    '''

    return Text[: : -1]

# ------------------------------------------------------------------------

def Transpose(PlainText, BlockSize):
    '''Transpose(PlainText, BlockSize) - transposes blocks of plain
        text after breaking into blocks of BlockSize
    '''
    CipherText = ''
    Scratch = PlainText

    while(len(Scratch) > 0):
        if (len(Scratch) >  BlockSize):
            ToFlip = Scratch[0: BlockSize]
            Scratch = Scratch[BlockSize : ]
            CipherText = CipherText + Flip(ToFlip)
        else:
            CipherText = CipherText + Flip(Scratch)
            Scratch = ''



    return CipherText
# ------------------------------------------------------------------------


# ========================================================================
if __name__ == '__main__' :
        TestText = ['Lions', 'SaintLeo', 'Sunny Florida',
                    string.digits, string.printable]
        for Sample in TestText:
                      Code = Transpose(Sample,3)
                      Decode = Transpose(Code,3)
                      print("Sample :" + Sample)
                      print("Code :" + Code)
                      print("Decode :" + Decode)
                      if (Sample==Decode) :
                          print('Round Trip OK\n')
                      else :
                          print('ERROR; Round Trip Mismatch\n')
# ========================================================================
```