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**Assignment 2**

"""

Write a Java/C/C++/Python program to perform encryption and decryption using the method of

Transposition technique.Write a Java/C/C++/Python program to perform encryption and decryption using the method of

Transposition technique.

"""

import math

key = "TECOMP"

def encryptMessage(msg):

    cipher = ""

    k\_indx = 0

    msg\_len = float(len(msg))

    msg\_lst = list(msg)

    key\_lst = sorted(list(key))

  col = len(key)

    row = int(math.ceil(msg\_len / col))

    fill\_null = int((row \* col) - msg\_len)

    msg\_lst.extend('\_' \* fill\_null)

    matrix = [msg\_lst[i: i + col]

              for i in range(0, len(msg\_lst), col)]

    for \_ in range(col):

        curr\_idx = key.index(key\_lst[k\_indx])

        cipher += ''.join([row[curr\_idx]  for row in matrix])

        k\_indx += 1

    return cipher

def decryptMessage(cipher):

    msg = ""

    k\_indx = 0

    msg\_indx = 0

    msg\_len = float(len(cipher))

    msg\_lst = list(cipher)

    col = len(key)

    row = int(math.ceil(msg\_len / col))

    key\_lst = sorted(list(key))

    dec\_cipher = []

    for \_ in range(row):

        dec\_cipher += [[None] \* col]

    for \_ in range(col):

        curr\_idx = key.index(key\_lst[k\_indx])

        for j in range(row):

            dec\_cipher[j][curr\_idx] = msg\_lst[msg\_indx]

            msg\_indx += 1

        k\_indx += 1

    try:

        msg = ''.join(sum(dec\_cipher, []))

    except TypeError:

        raise TypeError("This program cannot",

                        "handle repeating words.")

    null\_count = msg.count('\_')

    if null\_count > 0:

        return msg[: -null\_count]

    return msg

msg = input("Enter String: ")

cipher = encryptMessage(msg)

print("Encrypted Message: {}".format(cipher))

print("Decryped Message: {}".format(decryptMessage(cipher)))

**Output:-**

c:\Users\Shra Chaskar\OneDrive\Desktop\\_ISL\_A2.py:76: SyntaxWarning: invalid escape sequence '\S'

"""

Enter String: Sinhgad Academy of Engineering

Encrypted Message: nAynri mEegaoinhc giadfngSde e

Decryped Message: Sinhgad Academy of Engineering