#include<stdio.h>

#include<stdlib.h>

#include<string.h>

void main()

{

char message[100],message1[100],key[20],key1[20],temp,enc1[100];

char enc[20][20],dec[20][20];

int i=0,j=0,r,c,k=0;

printf("Enter the message\n");

gets(message);

printf("Enter key\n");

gets(key);

strcpy(key1,key);

c=strlen(key);

while(message[i]!='\0')

{

if(message[i]!=' ')

{

message1[j]=message[i];

j++;

}

i++;

}

message1[j]='\0';

printf("%s\n",message1);

if(strlen(message1)%c==0)

r=(strlen(message1))/c;

else

r=(strlen(message1)/c)+1;

for(i=0;i<r;i++)

{

for(j=0;j<c;j++)

{

if(k<strlen(message1))

{

enc[i][j]=message1[k];

k++;

}

else

enc[i][j]='X';

}

}

//printf("%d %d\n",r,c);

//printf("%s\n",key);

for(i=0;i<r;i++)

{

for(j=0;j<c;j++)

{

printf("%c ",enc[i][j]);

}

printf("\n");

}

for(i=0;i<strlen(key);i++)

{

for(j=i+1;j<strlen(key);j++)

{

if(key[i]>key[j])

{

temp=key[i];

key[i]=key[j];

key[j]=temp;

}

}

}

printf("sorted key is %s\n",key);

int array[strlen(key)];

int l=0;

for(i=0;i<c;i++)

{

for(j=0;j<c;j++)

{

if(key1[j]==key[i])

{

array[l]=j;

l++;

break;

}

}

}

for(i=0;i<c;i++)

printf("%d ",array[i]);

printf("The encrypted message is: \n");

k=0;

for(j=0;j<c;j++)

{

for(i=0;i<r;i++)

{

if(enc[i][array[j]]==122)

enc1[k]='a';

else

enc1[k]=enc[i][array[j]]+1;

k++;

printf("%c",enc[i][array[j]]);

}

}

printf("\nafter another layer of encryption:\n");

printf("%s\n",enc1);

char emes[50];

printf("\nenter the encoded message\n");

gets(emes);

k=0;

for(i=0;i<c;i++)

{

for(j=0;j<r;j++)

{

if(emes[k]=='a')

dec[j][array[i]]=122;

else

dec[j][array[i]]=emes[k]-1;

k++;

}

}

for(i=0;i<r;i++)

{

for(j=0;j<c;j++)

{

printf("%c ",dec[i][j]);

}

printf("\n");

}

k=0;

for(i=0;i<r;i++)

{

for(j=0;j<c;j++)

{

if(k<strlen(message1))

{

printf("%c",dec[i][j]);

k++;

}

}

}

}

python

import math

def encryptMessage():

#key=input ('Enter a key\n')

#message=input ('Enter a value\n')

key = "ZEBRAS"

message = "HELLOWEWILLMEETTOMORROW"

key1 = "orange"

message1 = "defendtheeastwallofthecastle"

col=len(key)

if((len(message)%col)!=0):

message+="x"\*(len(key)-(len(message)%col))#adding x

message=message.replace(' ', '')

o=[]

for i in key:

o.append(i)

h=[]

for i in range(col):

h.append(message[i:len(message):col])

#print(h,sep="\n")

dic=dict(zip(o,h))

so=sorted(dic.keys())

e = ''.join(dic[i]for i in so)

print("Encrypted Message is : ",e[::-1])

def decryptMessage():

#key=input ('Enter a key\n')

#encryptedmsg=input ('Enter the encrypted Message\n')

key = "ZEBRAS"#test data 1

encryptedmsg = "OEEHxMMWOTLLREWERTILWOLO"

encryptedmsg = encryptedmsg[::-1]

key1 = "orange"#test data 2

encryptedmsg1 = "feahldsoaxnalcxeeleedttfsehwtt"

col=len(key)

o=[]

for i in key:

o.append(i)

n = math.ceil(len(encryptedmsg)/len(key))

data = [encryptedmsg[i:i+n] for i in range(0, len(encryptedmsg), n)]

o.sort()

dic=dict(zip(o,data))

decryptedmsg = ''

for i in range(n):

for j in key:

decryptedmsg+=dic[j][i]

decryptedmsg = decryptedmsg.replace('x','')

print("Decrypted message is : ",decryptedmsg)

if \_\_name\_\_ == '\_\_main\_\_':

print("Implementing Columnar Transposition\n")

encryptMessage()

decryptMessage()

"""

vedant@kingsmanvk-predator-g3-572:~$ python3 cn12.py

Implementing Columnar Transposition

Encrypted Message is : OEEHxMMWOTLLREWERTILWOLO

Decrypted message is : HELLOWEWILLMEETTOMORROW

"""

c

//WAP to implement Columnar Transposition

#include<stdio.h>

#include<string.h>

#include<math.h>

char key[100],emsg[100],msg[100],b[100],temp;

char\* encrypt()

{

int c=0,i,j,a[100];

//...........................................KEY PART............................

printf("Enter the key.\n");

scanf("%s",key);

int n = strlen(key);

for(i=0;i<strlen(key);i++)

{

b[i]=key[i];

}

//sorting temp key : b

for (i = 0; i < n-1; i++) {

for (j = i+1; j < n; j++) {

if (b[i] > b[j]) {

temp = b[i];

b[i] = b[j];

b[j] = temp;

}

}

}

printf("Sorted key is : %s\n",b );

//.......................................MSG PART......................................

printf("Enter the Message\n");

scanf("%s",msg);

char matrix[strlen(msg)/strlen(key)][strlen(key)];

//assigning matrix chars

for(i=0;i<strlen(msg)/strlen(key);i++)

{

for (j = 0; j < strlen(key); j++)

{

matrix[i][j]=msg[c];

c++;

}

}

printf("\n");

//printing matrix

for(int i=0;i<round(strlen(msg)/strlen(key));i++)

{

for (int j = 0; j < strlen(key); j++)

{

printf("%c",matrix[i][j]);

}

printf("\n");

}

// enumeration

for (i = 0; i < strlen(key); i++)

{

for(j=0;j<strlen(key);j++)

{

if (key[i] == b[j])

{

a[j] = j;

// printf("%d\n",j );

}

}

printf("\n");

}

for(i=0;i<strlen(key);i++)

{

//print enumerated

}

//...........................................................................................

return msg;

}

void decrypt(){}

void main()

{

printf("\nImplementation of columnar transposition\n");

encrypt();

decrypt();

}