**PRACTICAL 1**

**Program 1**: Write a python program to demonstrate Caesar cipher.

**Code**:

def int\_to\_char(x2):

x1 = []

for i in range(len(x2)):

if (x2[i] == 0):

x1.append('a')

elif(x2[i] == 1):

x1.append('b')

elif(x2[i] == 2):

x1.append('c')

elif(x2[i] == 3):

x1.append('d')

elif(x2[i] == 4):

x1.append('e')

elif(x2[i] == 5):

x1.append('f')

elif(x2[i] == 6):

x1.append('g')

elif(x2[i] == 7):

x1.append('h')

elif(x2[i] == 8):

x1.append('i')

elif(x2[i] == 9):

x1.append('j')

elif(x2[i] == 10):

x1.append('k')

elif(x2[i] == 11):

x1.append('l')

elif(x2[i] == 12):

x1.append('m')

elif(x2[i] == 13):

x1.append('n')

elif(x2[i] == 14):

x1.append('o')

elif(x2[i] == 15):

x1.append('p')

elif(x2[i] == 16):

x1.append('q')

elif(x2[i] == 17):

x1.append('r')

elif(x2[i] == 18):

x1.append('s')

elif(x2[i] == 19):

x1.append('t')

elif(x2[i] == 20):

x1.append('u')

elif(x2[i] == 21):

x1.append('v')

elif(x2[i] == 22):

x1.append('w')

elif(x2[i] == 23):

x1.append('x')

elif(x2[i] == 24):

x1.append('y')

elif(x2[i] == 25):

x1.append('z')

str2 = ""

a2 = 0

for i in x1:

str2 += i

a2 += 1

if a2 < len(x1):

str2 += ""

else:

a = 1

return str2

str1 = input("enter string: ")

key = int(input("enter key: "))

l1 = list(str1)

l2 = []

for i in range(len(l1)):

if (l1[i] == 'a' or l1[i] == 'A'):

l2.append(0)

elif(l1[i] == 'b' or l1[i] == 'B'):

l2.append(1)

elif(l1[i] == 'c' or l1[i] == 'C'):

l2.append(2)

elif(l1[i] == 'd' or l1[i] == 'D'):

l2.append(3)

elif(l1[i] == 'e' or l1[i] == 'E'):

l2.append(4)

elif(l1[i] == 'f' or l1[i] == 'F'):

l2.append(5)

elif(l1[i] == 'g' or l1[i] == 'G'):

l2.append(6)

elif(l1[i] == 'h' or l1[i] == 'H'):

l2.append(7)

elif(l1[i] == 'i' or l1[i] == 'I'):

l2.append(8)

elif(l1[i] == 'j' or l1[i] == 'J'):

l2.append(9)

elif(l1[i] == 'k' or l1[i] == 'K'):

l2.append(10)

elif(l1[i] == 'l' or l1[i] == 'L'):

l2.append(11)

elif(l1[i] == 'm' or l1[i] == 'M'):

l2.append(12)

elif(l1[i] == 'n' or l1[i] == 'N'):

l2.append(13)

elif(l1[i] == 'o' or l1[i] == 'O'):

l2.append(14)

elif(l1[i] == 'p' or l1[i] == 'P'):

l2.append(15)

elif(l1[i] == 'q' or l1[i] == 'Q'):

l2.append(16)

elif(l1[i] == 'r' or l1[i] == 'R'):

l2.append(17)

elif(l1[i] == 's' or l1[i] == 'S'):

l2.append(18)

elif(l1[i] == 't' or l1[i] == 'T'):

l2.append(19)

elif(l1[i] == 'u' or l1[i] == 'U'):

l2.append(20)

elif(l1[i] == 'v' or l1[i] == 'V'):

l2.append(21)

elif(l1[i] == 'w' or l1[i] == 'W'):

l2.append(22)

elif(l1[i] == 'x' or l1[i] == 'X'):

l2.append(23)

elif(l1[i] == 'y' or l1[i] == 'Y'):

l2.append(24)

elif(l1[i] == 'z' or l1[i] == 'Z'):

l2.append(25)

l3 = []

for i in range(len(l2)):

l3.append(((l2[i] + key)) % 26)

l5 = []

for i in range(len(l3)):

l5.append(((l3[i] - key)) % 26)

print("encoded message: ", int\_to\_char(l3))

print("Decoded message: ", int\_to\_char(l5))

output:

