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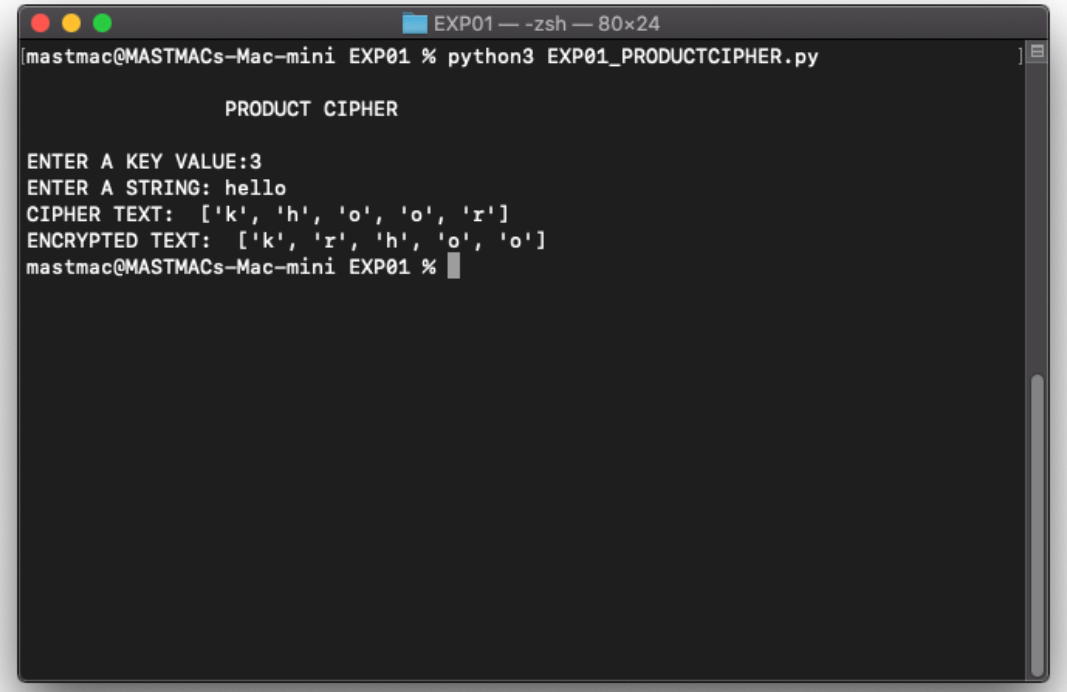
CLASS: TE-CO ROLL-NO.: 18CO63
EXPERIMENT NO. 01: PRODUCT CIPHER USING PYTHON.

PROGRAM:

```
import string

print("\n\t\t PRODUCT CIPHER \n")
k=int(input("ENTER A KEY VALUE:"))
d=input("ENTER A STRING: ")
ct = []
alphabets = string.ascii_uppercase
for j in d:
        b=j.upper()
        if b in alphabets and j.islower():
                e=(alphabets.index(b)+k)%26
                ct.append(alphabets[e].lower())
        elif b in alphabets and j.isupper():
                a=(alphabets.index(b)+k)%26
                ct.append(alphabets[a].upper())
        else:
                ct.append(" ")

matrix = [[False for i in range(len(ct))]
 for j in range(k)]

print("CIPHER TEXT: ",ct)
j=0
for i in range(len(ct)):
   matrix[j][i]=ct[i]
   if j == k - 1:
      flag = False
   elif j == 0:
      flag = True
   if flag == True:
      j = j + 1
   else:
      j = j - 1

answer=[]
for key in range(k):
   for text in range(len(ct)):
      if matrix[key][text]!=False:
         answer.append(matrix[key][text])

print("ENCRYPTED TEXT: ", answer)
```

OUTPUT:


EXP01 — -zsh — 80×24
mastmac@MASTMACs-Mac-mini EXP01 % python3 EXP01_PRODUCTCIPHER.py
PRODUCT CIPHER
ENTER A KEY VALUE:3
ENTER A STRING: hello
CIPHER TEXT: ['k', 'h', 'o', 'o', 'r']
ENCRYPTED TEXT: ['k', 'r', 'h', 'o', 'o']
mastmac@MASTMACs-Mac-mini EXP01 %