Experiment 4 Shashwat Shah
GOOOU220126 TYBlech lomps B
Aim: Study and implement simple columnas transpositional
meory: Given a plaintext message and a numeric key upher
te upher the given text using columnar transposition apher this a form of transposition just like vail fence apher. It
Involves writing the plaintent out in vows, then reading
the ciphen text off lin columns one by one.
Encouption - In a transposition Lipher the tox der ey die
alphabet is re-averaged to obtain the ripher text.
columns are chosen in some scrambled order.
2) Width of the rows of and the permutation of the column
one isually defined by a keyword
3) For Eg, the word HACK is of length 4 (so the rows are
of length (), and the permutation is defined by the
alphabetical order of the letters in the keyword. In this
case the order would be 31242
a) Any space space are filled with nulls or left blank
or placed by a * character (tg)
(5) Finally, the Message is read of in column in the
order specified by keyword.
FOR EDUCATIONAL USE

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Academic Year: 2022-2023

#### **EXPERIMENT 4**

Shashwat Shah TYBtech Comps B C22 60004220126

**AIM:** Study and Implement Simple Columnar Transposition Cipher.

### CODE:

```
def ColTT_Enc(plain_text, key):
    matrix = []
    for i in range(key):
        matrix.append([])
    for i in range(len(plain_text)):
        matrix[i % key].append(plain_text[i])
    for i in matrix:
        print(i)
    cypher_text = ''
    for i in matrix:
        for char in i:
            cypher text += char
    print("Cipher text of Columnar Transposition is " + cypher text)
    return cypher_text
def ColTT_Dec(cypher_text, key):
    matrix = []
    for i in range(key):
        matrix.append([])
    count = int(len(cypher_text)/key)
    length = 0
    extra = int(len(cypher_text) % key)
    for charlist in matrix:
        for j in range(count):
            charlist.append(cypher_text[length])
            length = length+1
        if (extra != 0):
            charlist.append(cypher_text[length])
            length = length+1
            extra = extra-1
    for i in matrix:
        print(i)
    plain_text = ''
```



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## DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING



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Academic Year: 2022-2023

```
for i in range(key+1):
    for charlist in matrix:
        if i > len(charlist)-1:
            continue
        plain_text = plain_text + charlist[i]
    print("Decrypted text of Columnar Transposition is " + plain_text)

string = input("Enter a string:")
col = int(input("Enter column number:"))
c2 = ColTT_Enc(string, col)
ColTT Dec(c2, col)
```

### **OUTPUT:**

Encrypted Message: hwS\_aah\_Sh hsta\_ Decryped Message: Shashwat Shah