Consider the scenario and provide solution accordingly - An organization has given you a task to provide authentication to each and every message which is being transfer between employees to identify the message is transferred by legit employee only. (Hint - Use MAC)

CODE:

```
def plaintocipher(plain, key):
    cipher=''
    key=int(key)
    for i in plain:
        j=ord(i)
        if i.islower():
            k=(j+key-97)%26+97
        else:
            k=(j+key-65)%26+65
        l=chr(k)
        cipher+=l
    return cipher


def sender(mess, k):
    cipher_t=plaintocipher(mess, k)
    message=mess+'xx'+cipher_t
    return message


def receiver(mess, k):
    for i in range(len(mess)-2):
        if mess[i] == 'x' and mess[i+1] == 'x':
```

```python
            original_cipher=mess[(i+2):]
            original_message=mess[:i]
            calculated_cipher=plaintocipher(original_message, k)
            print('\nOriginal_cipher: ',original_cipher )
            print('\ncalculated_cipher: ',calculated_cipher )
            print('\n')
            if calculated_cipher==original_cipher:
                return True
            else:
                return False


    plain_text=input('Enter the plain text: ')
    key=input('Enter the key: ')
    key=int(key)


    to_reciever=sender(plain_text, key)
    print(f'\nText received from sender side: ', to_reciever)


    print(receiver(to_reciever, key))
```

OUTPUT:

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```
In [23]: runfile('C:/Users/Admin/study material/sem5/Practicals/
Cryptography/Practical-10/MAC.py', wdir='C:/Users/Admin/study material/sem5/
Practicals/Cryptography/Practical-10')

Enter the plain text: practicalten

Enter the key: 5

Text received from sender side:  practicaltenxxuwfhynhfqyjs

Original_cipher:  uwfhynhfqyjs

calculated_cipher:  uwfhynhfqyjs


True

In [24]:
```