GHARDA FOUNDATION'S
GHARDA INSTITUTE OF TECHNOLOGY

Department of Computer Engineering

Evaluation Sheet

Class: T.E Computer Engineering **Sem:** VI

Subject: Cryptography and System Security

Experiment No: 3

Date: 17/01/2023

Title of Experiment: Design and Implementation of Vigenere Cipher.

Sr. No.	Evaluation Criteria	Max Marks	Marks Obtained
1	Practical Performance	12	
2	Oral	2	
3	Timely Submission	1	
	Total	15	

Signature of Subject Teacher
[Vijesh M.Nair]

Program Code (Encryption) –

```
def encrypt(str, key):
    numstr = [0] * 100
    numkey = [0] * 100
    numcipher = [0] * 100

    print("Entered string is: " + str)
    for i in range(len(str)):
        numstr[i] = ord(str[i]) - ord('A')
    j = 0
    for i in range(len(str)):
        if j >= len(key):
            j = 0
        numkey[i] = ord(key[j]) - ord('A')
        j += 1
    for i in range(len(str)):
        numcipher[i] = (numstr[i] + numkey[i]) % 26

    print("Vigenere Cipher text is")
    for i in range(len(str)):
        print(chr(numcipher[i] + ord('A')), end='')
    print("")

str = input("Enter a string: ")
str = str.upper()
key = input("Enter a key: ")
key = key.upper()
encrypt(str, key)
```

Output –

```
Enter a string: niraj
Enter a key: simple
Entered string is: NIRAJ
Vigenere Cipher text is
FQDPU
```

Program Code (Decryption)

```
def decrypt_vigenere(str, key):
    numstr = [0] * 100
    numkey = [0] * 100
    numcipher = [0] * 100
    j = 0
    str = str.upper()
    for i in range(len(str)):
        numstr[i] = ord(str[i]) - ord('A')
    key = key.upper()
    i = 0
    for j in range(len(key)):
        if i >= len(str):
            break
        numkey[i] = ord(key[j]) - ord('A')
        i += 1
    while i < len(str):
        for j in range(len(key)):
            numkey[i] = ord(key[j]) - ord('A')
            i += 1
    for i in range(len(str)):
        numcipher[i] = (numstr[i] - numkey[i]) % 26
    return ''.join(chr(numcipher[i] + ord('A')) for i in range(len(str)))
```

```
str = input("Enter a string to decrypt: ")
key = input("Enter a key: ")
print("Decrypted Vigenere Cipher text is:")
print(decrypt_vigenere(str, key))
```

Output –

```
Enter a string to decrypt: fqdpu
Enter a key: simple
Decrypted Vigenere Cipher text is:
NIRAJ
```