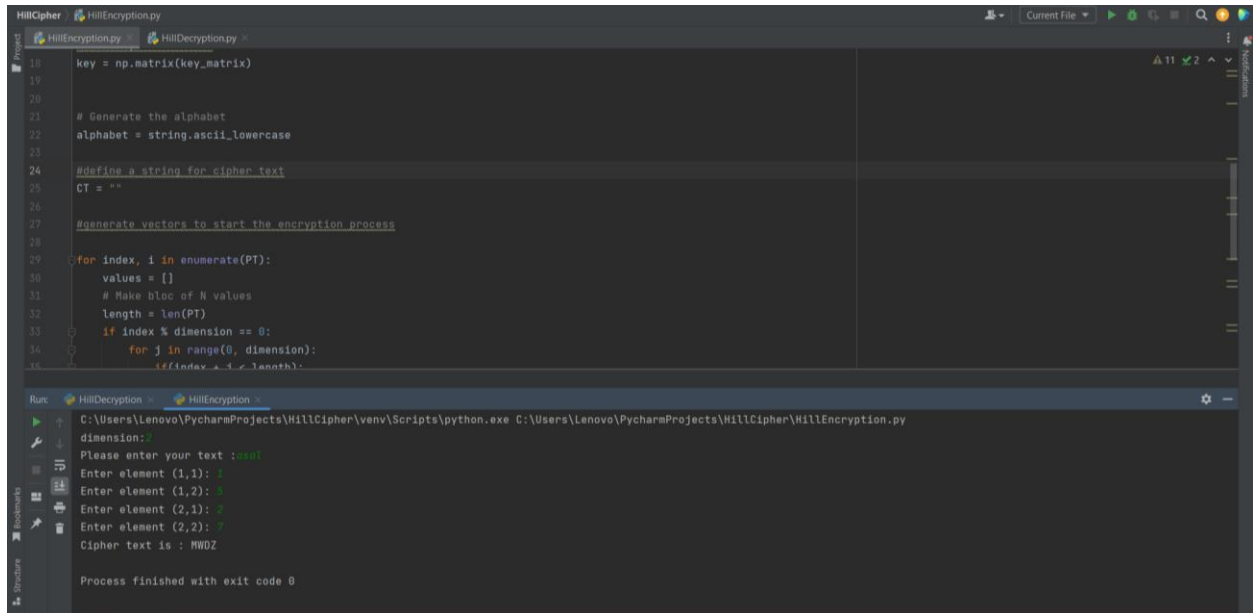


Hill cipher – Asal Rahbari

Encryption :

Plaintext : asal

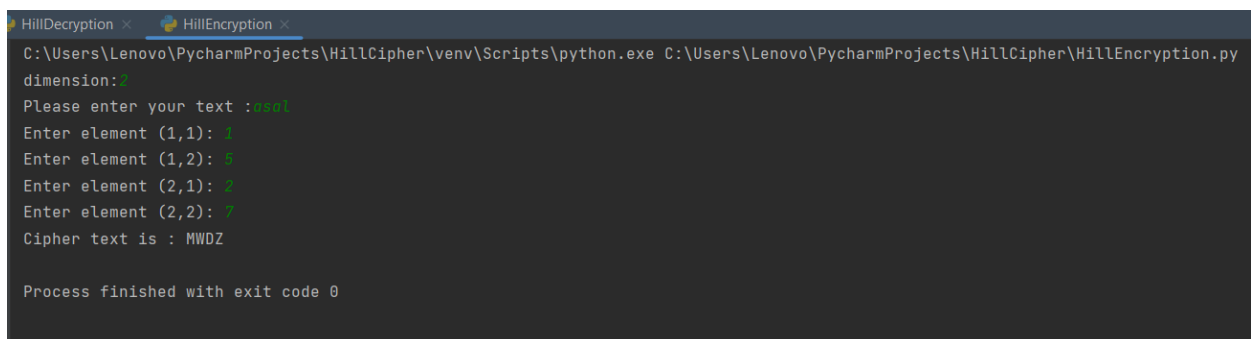
Key matrix : $\begin{bmatrix} 1 & 5 \\ 2 & 7 \end{bmatrix}$



```
HillCipher
HillEncryption.py
18 key = np.matrix(key_matrix)
19
20
21 # Generate the alphabet
22 alphabet = string.ascii_lowercase
23
24 #define a string for cipher text
25 CT = ""
26
27 #generate vectors to start the encryption process
28
29 for index, i in enumerate(PT):
30     values = []
31     # Make bloc of N values
32     length = len(PT)
33     if index % dimension == 0:
34         for j in range(0, dimension):
35             if (index + j < length):
```

Run HillDecryption x HillEncryption x

```
C:\Users\Lenovo\PycharmProjects\HillCipher\venv\Scripts\python.exe C:\Users\Lenovo\PycharmProjects\HillCipher\HillEncryption.py
dimension:2
Please enter your text :asal
Enter element (1,1): 1
Enter element (1,2): 5
Enter element (2,1): 2
Enter element (2,2): 7
Cipher text is : MWDZ
Process finished with exit code 0
```

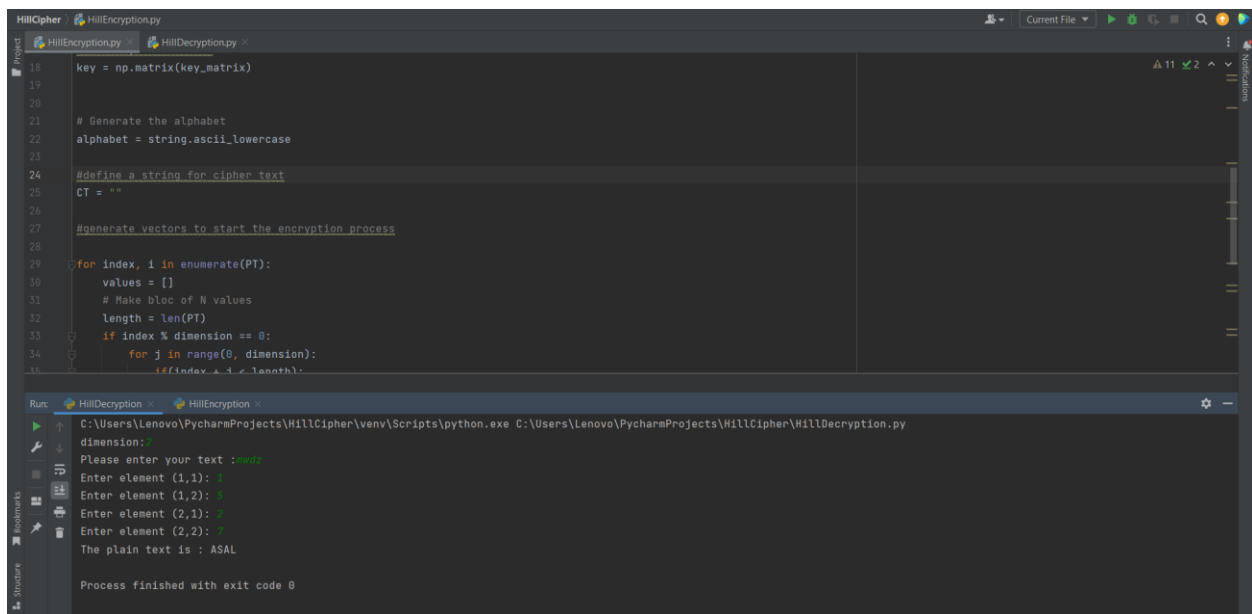


```
HillDecryption x HillEncryption x
C:\Users\Lenovo\PycharmProjects\HillCipher\venv\Scripts\python.exe C:\Users\Lenovo\PycharmProjects\HillCipher\HillEncryption.py
dimension:2
Please enter your text :asal
Enter element (1,1): 1
Enter element (1,2): 5
Enter element (2,1): 2
Enter element (2,2): 7
Cipher text is : MWDZ
Process finished with exit code 0
```

Decryption :

Ciphertext : mwdz

Key matrix : $\begin{bmatrix} 1 & 5 \\ 2 & 7 \end{bmatrix}$



```
18 key = np.matrix(key_matrix)
19
20
21 # Generate the alphabet
22 alphabet = string.ascii_lowercase
23
24 #define a string for cipher text
25 CT = ""
26
27 #generate vectors to start the encryption process
28
29 for index, i in enumerate(PT):
30     values = []
31     # Make bloc of N values
32     length = len(PT)
33     if index % dimension == 0:
34         for j in range(0, dimension):
35             values.append(PT[index + j * length])
```

Run: HillDecryption.py

C:\Users\Lenovo\PycharmProjects\HillCipher\venv\Scripts\python.exe C:\Users\Lenovo\PycharmProjects\HillCipher\HillDecryption.py

dimension: 2

Please enter your text : mwdz

Enter element (1,1): 1

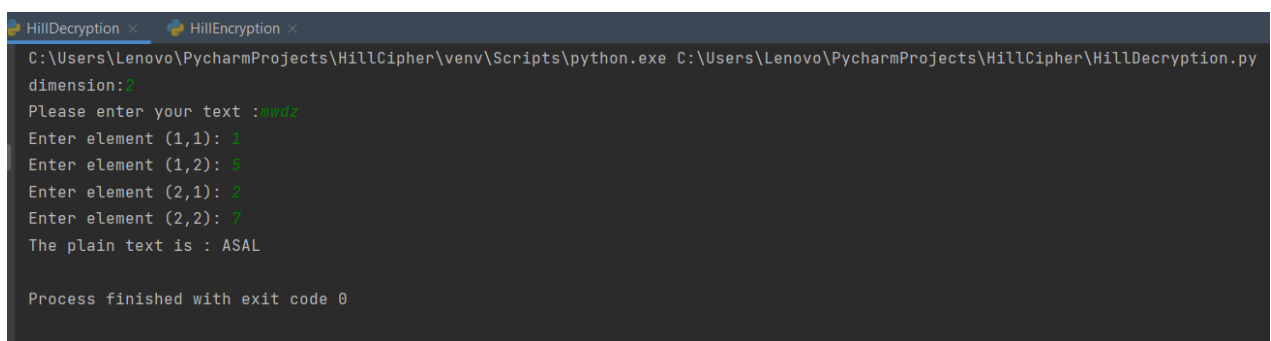
Enter element (1,2): 5

Enter element (2,1): 2

Enter element (2,2): 7

The plain text is : ASAL

Process finished with exit code 0



```
C:\Users\Lenovo\PycharmProjects\HillCipher\venv\Scripts\python.exe C:\Users\Lenovo\PycharmProjects\HillCipher\HillDecryption.py
dimension:2
Please enter your text :mwdz
Enter element (1,1): 1
Enter element (1,2): 5
Enter element (2,1): 2
Enter element (2,2): 7
The plain text is : ASAL

Process finished with exit code 0
```