Course Name: Fundamentals of Programming & Data Science	**Course Code:** CMPE-112L
Assignment Type: Complex Engineering Problem	**Dated:** 19-February-2024
Semester: 2nd	**Session: 2022**
Lab/Project/Assignment #: 2	**CLOs to be covered: CLO 2**
Lab Title: Encryption and Decryption Tool	**Teacher Name:** Engr. Afeef Obaid

Complex Engineering Problem (CEP):

No.	Attribute	Details	PLOs Covered
WP1	Depth of Knowledge required	This problem requires deep knowledge of dictionaries, random functions and string manipulation in python.	**1**
WP2	Range of conflicting requirements	This problem involves conflicting requirements, as we can make a very complex encryption and decryption algorithm but its processing time, efficiency and code complexity will increase on the other hand.	**3**
WP7	Interdependence	This problem has interdependence as algorithm for decryption depends upon the algorithm which we apply for encryption.	**4**

CEP Description:

Write the python program that takes a sentence from the user and do its Encryption or decryption using dictionary data type.

Rules for encryption:

1. Set the key
2. Reverse each word of the sentence
3. Replace each letter of the word with some random letter
4. Add three random alphabets before and after each word

Rules for Decryption:

1. Ask the key from the user
2. If key matches decrypt the sentence by reversing the encryption steps.