Design and Analysis of Algorithms (CS1105)

Message Encrypter and Decrypter

PREPARED BY

Priya Soni (2020BTechCSE059)

Sakshi Kashyap (2020BTechCSE089)

FACULTY GUIDES

Dr. Suman Saha

Department of Computer Science and Engineering

Institute of Engineering and Technology (IET)

JK Lakshmipat University Jaipur

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Readme File

- **Project Title**: Message Encrypter and Decrypter (Using Huffman Coding Algorithm)
- **Motivation:**

  In today's world, data can easily be stolen and used by hackers. With data encryption and decryption we can secure our messages. This python project will encode and decode messages in real-time with the use of Huffman coding algorithm.

  Huffman Encoding is a Lossless Compression Algorithm used to compress the data.

  As it can be understood from being a "Compression Technique", the aim is to encode the same data in a way that takes up less space. Accordingly, when a data is encoded with Huffman Coding, we get a unique code for each symbol in the data.
- **Code style and Framework used:**

  Python, and its libraries - tkinter for GUI
- **Features**

  This **GUI** allows user to

✓ To write a message and its corresponding encrypted and decrypted output.

The **console output** shows

✓ space used before and after compression

✓ distinct characters in the message

✓ frequency of the characters in the message

- **Installations:**

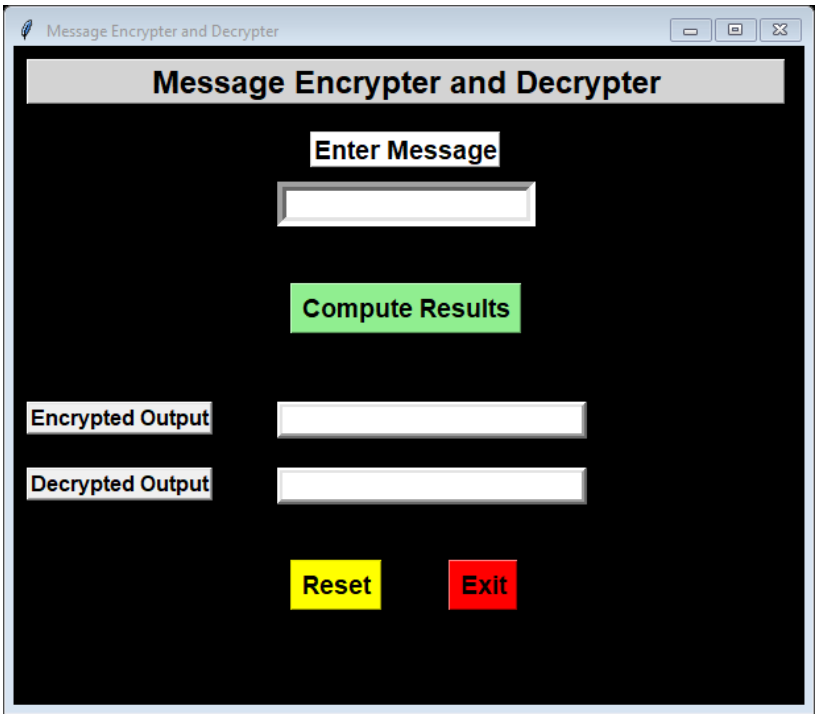
Step 1: Download the .ipynb file from reference link

Step 2: Import tkinter library by running command '*pip install tkinter'* in the command prompt window.

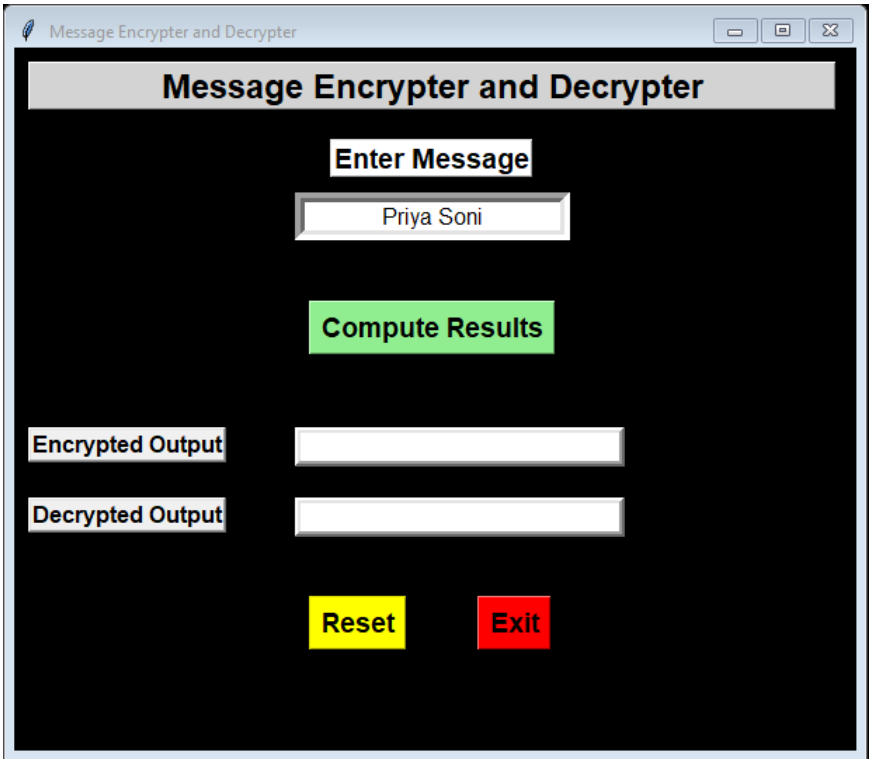
Step 3: Now a chrome window is appeared**,** Press shift + Enter to run the programme.

Step 4: A new window is appeared which shows a GUI named "Message Encrypter and Decrypter"

- **Snapshots of GUI –**

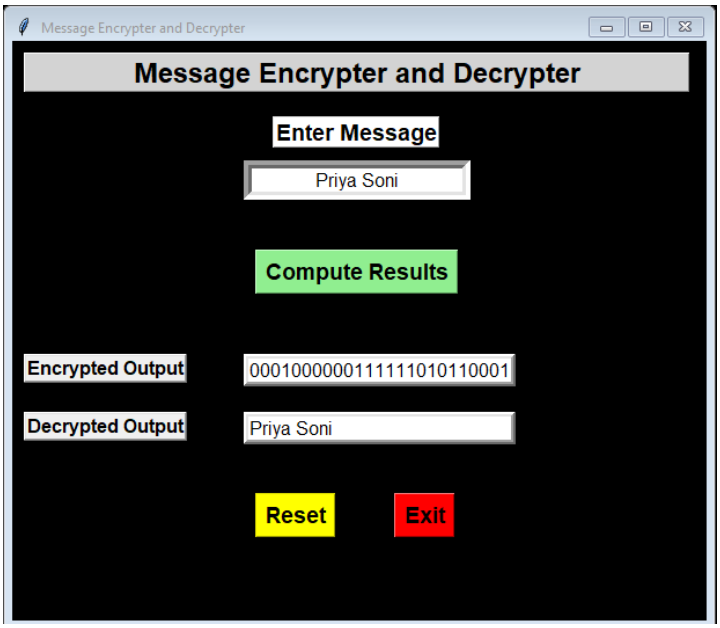


Write a message in “Enter Message” toolbar.



Step 5: Click on “Compute Results” to get the result.

Step 6: corresponding result will cone in respective boxes.



Step 7: Now if you want to use this again then click on “Reset” else press “Exit” to terminate.

Thank You!