Encryption Decryption UI

Network Security Project_00

Submitted By:-   **Presented To:-**

Divyam Gupta   Prof. Dr. K. K. Shukla
19165020   Department of CSE,
Pharmaceutical engineering & Technology   IIT (BHU), Varanasi
9034460083

Used Algorithm to encrypt and decrypt :-

For Example:-

Plain Text -> DivyamGupta
Cipher Text -> WrebznTfkgz

Algorithm is that,
If a letter is at 'k' index from the beginning in english alphabet then the ciphered text will contain letter at 'k' index from the end.

For example,
a -> z   A -> Z
c -> x   C -> X etc…

Used formula;-

For capital letters ->   chr(92 - (ord(s[i]) - 63))

For small letters ->   chr(123 - (ord(s[i]) - 96))

For rest of the letters -> It keeps it same.

Where, "chr" represents the operation to convert ASCII value to char.
        "ord" represents the operation to convert char to its ASCII value.
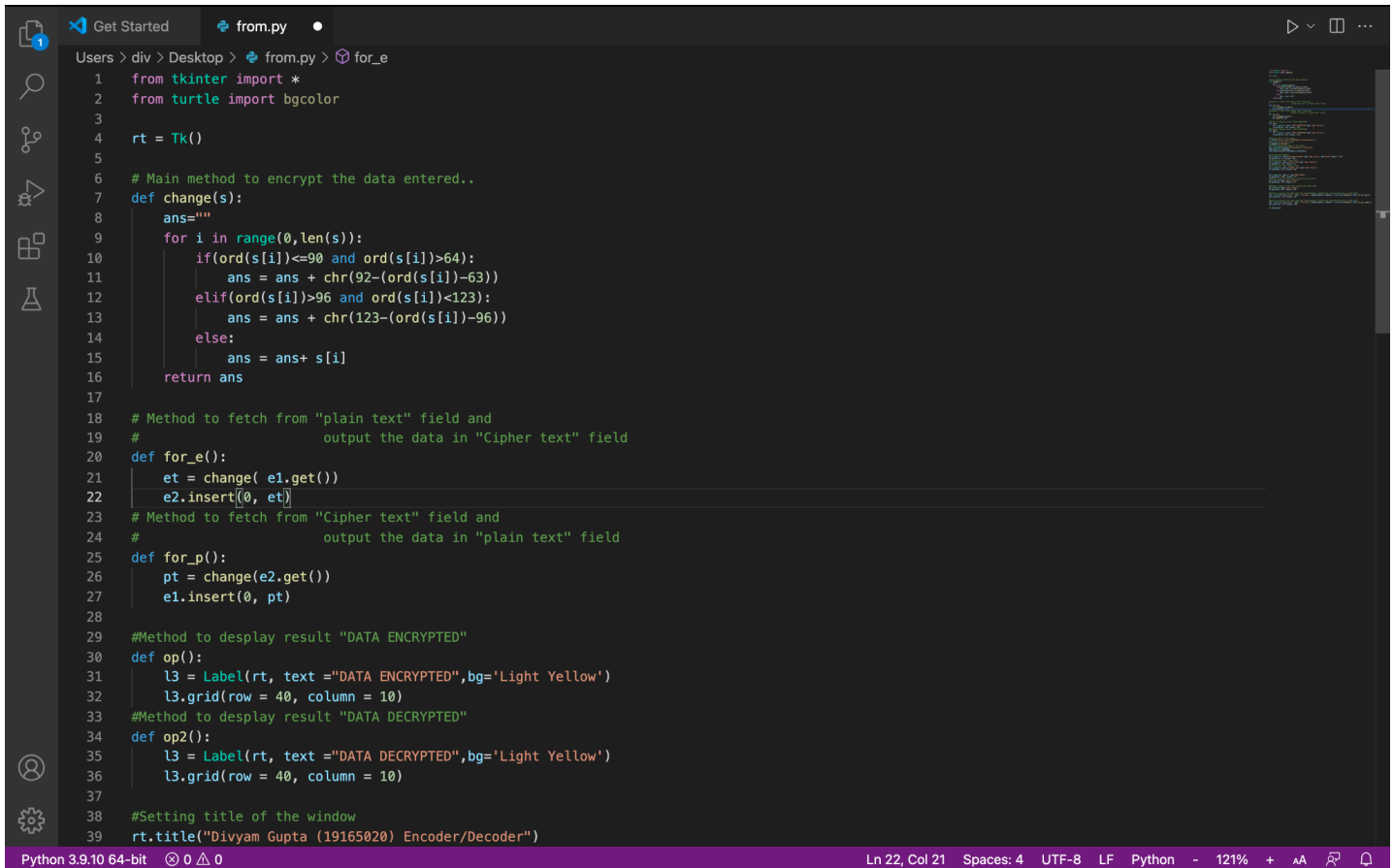   "s[i]" represents the char at 'i' position in string 's'

For a, ASCII value = 97
        Applying formula
        123-(97-96) = 122
        122 is ASCII value of z…

Implementation and Code

Platform Used -> VS Code
Language Used -> Python

Using tkinter package to create a UI window.


```python
from tkinter import *
from turtle import bgcolor

rt = Tk()

# Main method to encrypt the data entered..
def change(s):
    ans=""
    for i in range(0,len(s)):
        if(ord(s[i])<=90 and ord(s[i])>64):
            ans = ans + chr(92-(ord(s[i])-63))
        elif(ord(s[i])>96 and ord(s[i])<123):
            ans = ans + chr(123-(ord(s[i])-96))
        else:
            ans = ans+ s[i]
    return ans

# Method to fetch from "plain text" field and
#                   output the data in "Cipher text" field
def for_e():
    et = change( e1.get())
    e2.insert(0, et)
# Method to fetch from "Cipher text" field and
#                   output the data in "plain text" field
def for_p():
    pt = change(e2.get())
    e1.insert(0, pt)

#Method to desplay result "DATA ENCRYPTED"
def op():
    l3 = Label(rt, text ="DATA ENCRYPTED",bg='Light Yellow')
    l3.grid(row = 40, column = 10)
#Method to desplay result "DATA DECRYPTED"
def op2():
    l3 = Label(rt, text ="DATA DECRYPTED",bg='Light Yellow')
    l3.grid(row = 40, column = 10)

#Setting title of the window
rt.title("Divyam Gupta (19165020) Encoder/Decoder")
```

Fig:- 1/2 Code for UI window & algorithm

1. Method **change(),** represents the above mentioned algorith.
   Method for_e(): & for_p(): represents to call change() and input data.
2. Method op(), op2() is used to get the result field i.e. DATA ENCRYPTED/DATA DECRYPTED
3. Title, geometry, bg, lm, lm2, l1, l2 is used to get the desired UI.
4. e1, e2 is used to get the input from the user
5. enc, dec represents the buttons for encrypting and decryption respectively.

```python
38    #Setting title of the window
39    rt.title("Divyam Gupta (19165020) Encoder/Decoder")
40    #Setting size of the window
41    rt.geometry("600x500")
42    #Setting background image in the window
43    bg = PhotoImage(file="Desktop/python vs/bg.png")
44    lm2=Label(rt, image=bg)
45    lm2.place(x=0,y=0,relheight=1,relwidth=1)
46
47    #printing the heading
48    lm = Label(rt, text ="Encoder/Decoder",bg='Light yellow',fg="green",font=("",20))
49    lm.grid(row = 1, column = 10)
50    #printing the label "Plain text"
51    l1 = Label(rt, text ="Plain text",bg='Light Yellow')
52    l1.grid(row = 20, column = 2)
53    #printing the label "Cipher text"
54    l2 = Label(rt, text ="Cipher text",bg='light Yellow')
55    l2.grid(row = 20, column = 20)
56
57
58    l3 = Label(rt, text ="",bg='DARK GREEN')
59    l3.grid(row = 100, column = 1)
60    #Making a field to enter and recieve the plain data
61    e1 = Entry(rt,bg='Light Yellow')
62    e1.grid(row = 24, column = 2)
63
64    #Making a field to enter and recieve the cipher data
65    e2 = Entry(rt,bg='Light Yellow')
66    e2.grid(row = 24, column = 20)
67
68    #button to encrypt the imput data and simultaneously clearing any pre-existing entry in the field
69    enc = Button(rt,fg='green', text = "Encrypt", pady=0,padx=0, command = lambda:[e2.delete(0, END),for_e(),op()])
70    enc.grid(row = 27, column = 2)
71
72    #button to decrypt the imput data and simultaneously clearing any pre-existing entry in the field
73    dec = Button(rt,fg='green', text = "Decrypt", pady=0,padx=0, command = lambda:[e1.delete(0, END),for_p(),op2()])
74    dec.grid(row = 27, column = 20)
75
76    rt.mainloop()
```

Fig:- 2/2 Code for UI window & algorithm
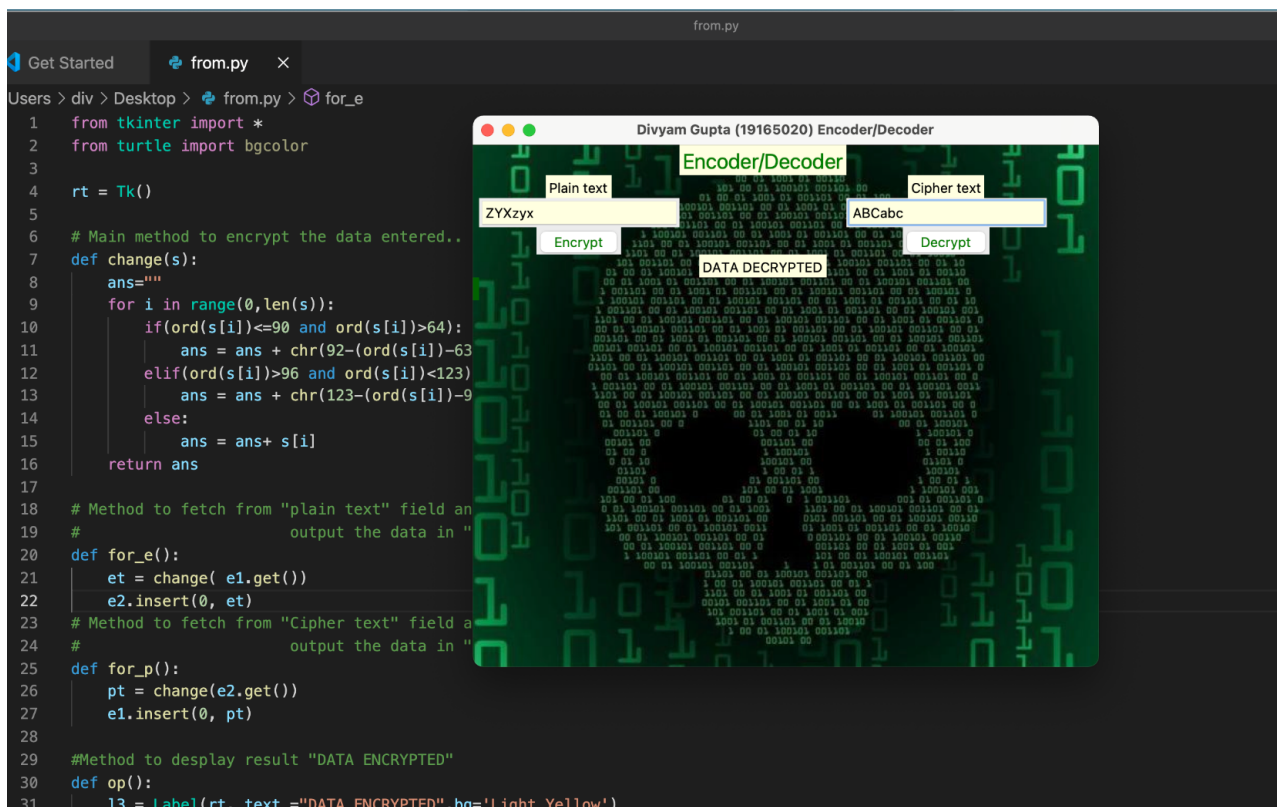
RESULTS:-

Fig:- Data Encrypting

Fig:- Data Decrypting

Key Features of Project:-

1. Encrypting & Decrypting
2. No need to remove or delete the text from the answer field to process new text.
   It automatically updates it.
3. Displays Data Encrypted / Data Decrypted message.

GitHub Repository Link:- https://github.com/gdivyam220/Encrypt-Decrypt

Video Description Link:-
https://drive.google.com/file/d/1n2TfUpyFMdXjLJMKzYs_Xi7G6OY8NE3V/view?usp=sharing

THANK YOU