

# Encryption Decryption UI

Network Security Project\_00

**Submitted By:-**

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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 ->  $\text{chr}(92 - (\text{ord}(\text{s}[\text{i}]) - 63))$

For small letters ->  $\text{chr}(123 - (\text{ord}(\text{s}[\text{i}]) - 96))$

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'

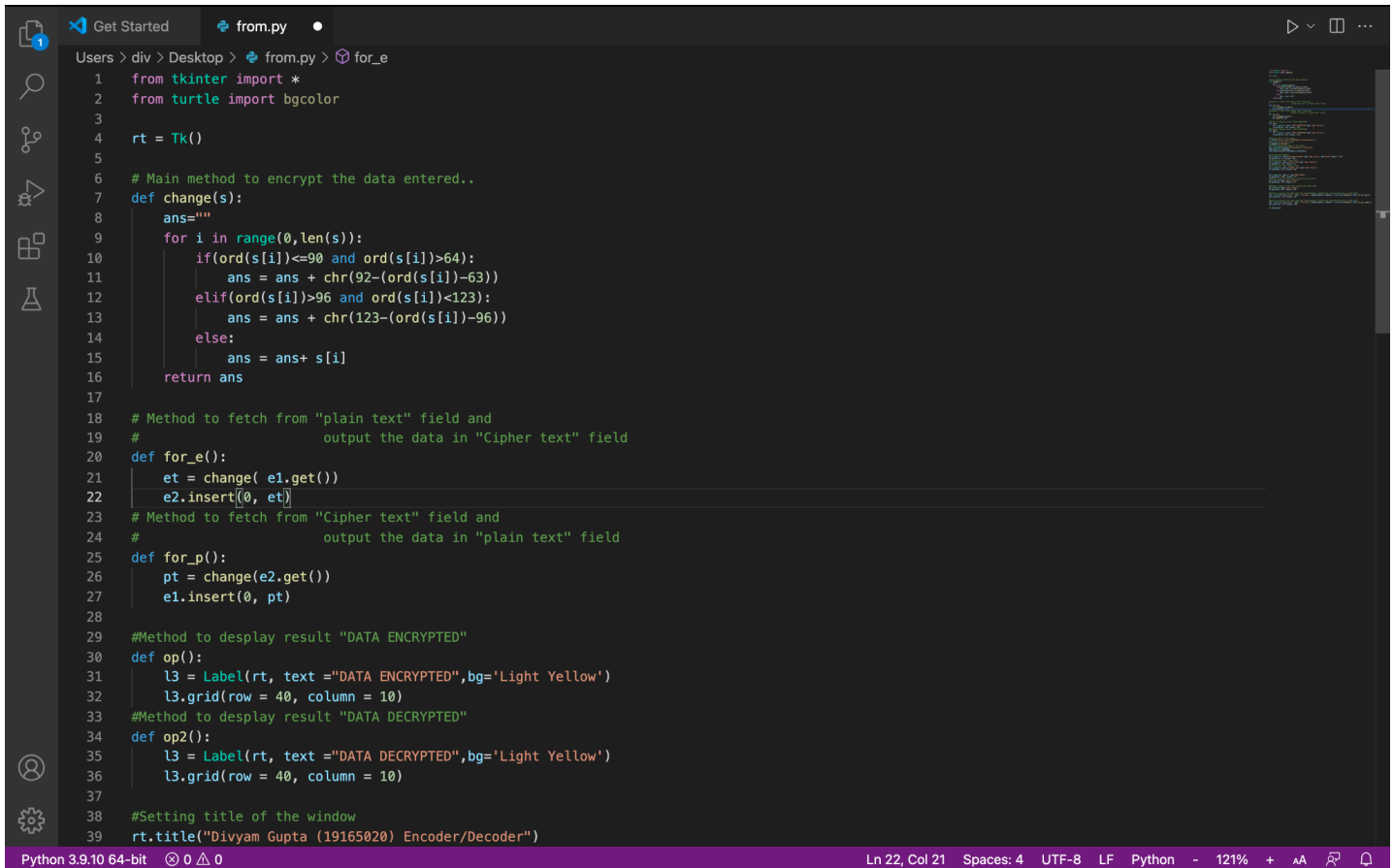
For a, ASCII value = 97  
Applying formula  
 $123 - (97 - 96) = 122$   
122 is ASCII value of z...

## Implementation and Code

Platform Used -> VS Code

Language Used -> Python

Using tkinter package to create a UI window.

A screenshot of the Visual Studio Code editor interface. The top bar shows the file name 'from.py' and the Python interpreter path 'Python 3.9.10 64-bit'. The left sidebar contains icons for Explorer, Search, Source Control, Run and Debug, Extensions, and Testing. The main editor area displays a Python script for a Caesar cipher encoder/decoder. The code includes imports for tkinter and turtle, a Tk() window creation, and several functions: 'change()' for the encryption algorithm, 'for\_e()' and 'for\_p()' for handling input/output between text fields, and 'op()' and 'op2()' for displaying 'DATA ENCRYPTED' and 'DATA DECRYPTED' messages. The window title is set to 'Divyam Gupta (19165020) Encoder/Decoder'.

```
1 from tkinter import *
2 from turtle import bgcolor
3
4 rt = Tk()
5
6 # Main method to encrypt the data entered..
7 def change(s):
8     ans=""
9     for i in range(0,len(s)):
10         if(ord(s[i])<=90 and ord(s[i])>64):
11             ans = ans + chr(92-(ord(s[i])-63))
12         elif(ord(s[i])>96 and ord(s[i])<123):
13             ans = ans + chr(123-(ord(s[i])-96))
14         else:
15             ans = ans+ s[i]
16     return ans
17
18 # Method to fetch from "plain text" field and
19 # output the data in "Cipher text" field
20 def for_e():
21     et = change( e1.get())
22     e2.insert(0, et)
23 # Method to fetch from "Cipher text" field and
24 # output the data in "plain text" field
25 def for_p():
26     pt = change(e2.get())
27     e1.insert(0, pt)
28
29 #Method to desplay result "DATA ENCRYPTED"
30 def op():
31     l3 = Label(rt, text ="DATA ENCRYPTED",bg='Light Yellow')
32     l3.grid(row = 40, column = 10)
33 #Method to desplay result "DATA DECRYPTED"
34 def op2():
35     l3 = Label(rt, text ="DATA DECRYPTED",bg='Light Yellow')
36     l3.grid(row = 40, column = 10)
37
38 #Setting title of the window
39 rt.title("Divyam Gupta (19165020) Encoder/Decoder")
```

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

1. Method **change()**, represents the above mentioned algorithm.  
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.

```

1 Get Started from.py
Users > div > Desktop > from.py > for_e
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 input 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 input 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()
77
Python 3.9.10 64-bit 0 0 Ln 22, Col 21 Spaces: 4 UTF-8 LF Python - 121%

```

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

## RESULTS:-

```

1 Get Started from.py
Users > div > Desktop > from.py > for_e
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])-9)
        else:
            ans = ans + s[i]
    return ans

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

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

#Method to display result "DATA ENCRYPTED"
def op():
    l3 = Label(rt, text ="DATA ENCRYPTED",bg='Light Yellow')

```




Fig:- Data Encrypting

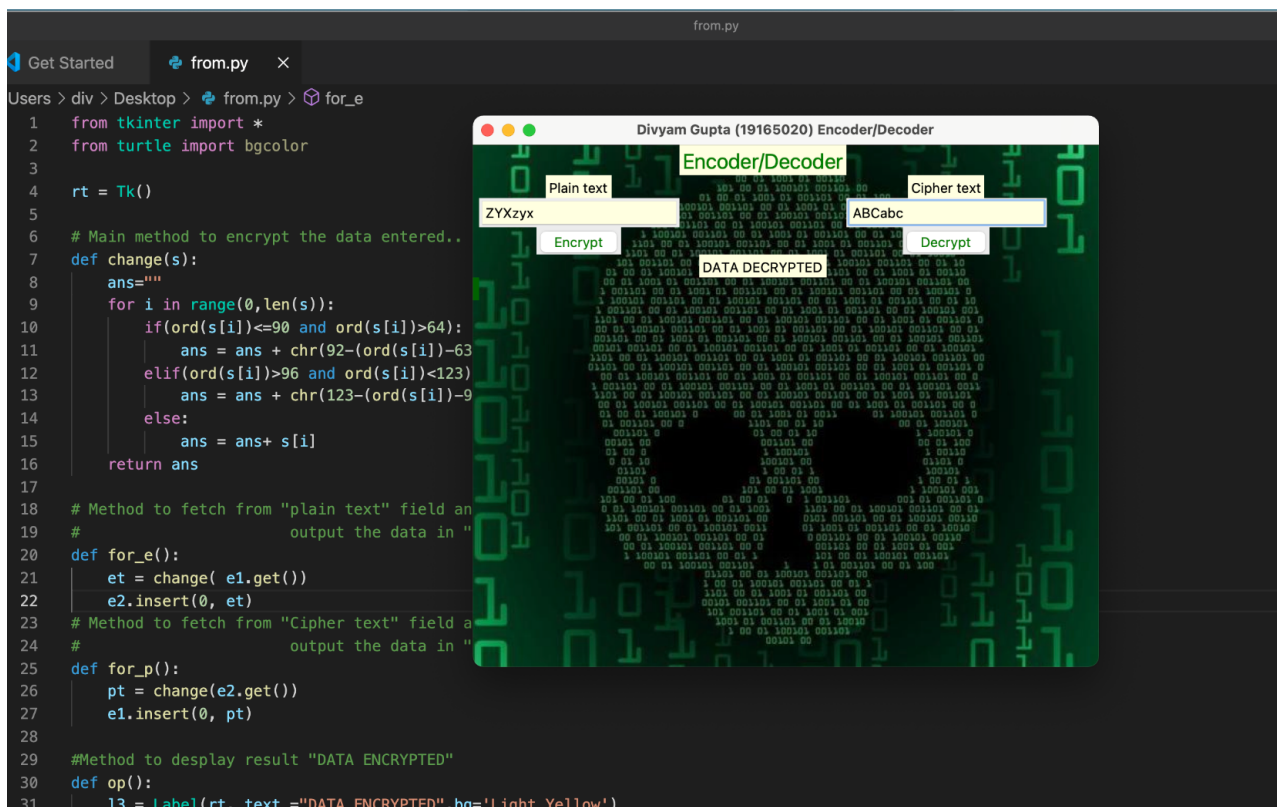


Fig:- Data Decrypting

## 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](https://drive.google.com/file/d/1n2TfUpyFMdXjLJMKzYs_Xi7G6OY8NE3V/view?usp=sharing)

THANK YOU