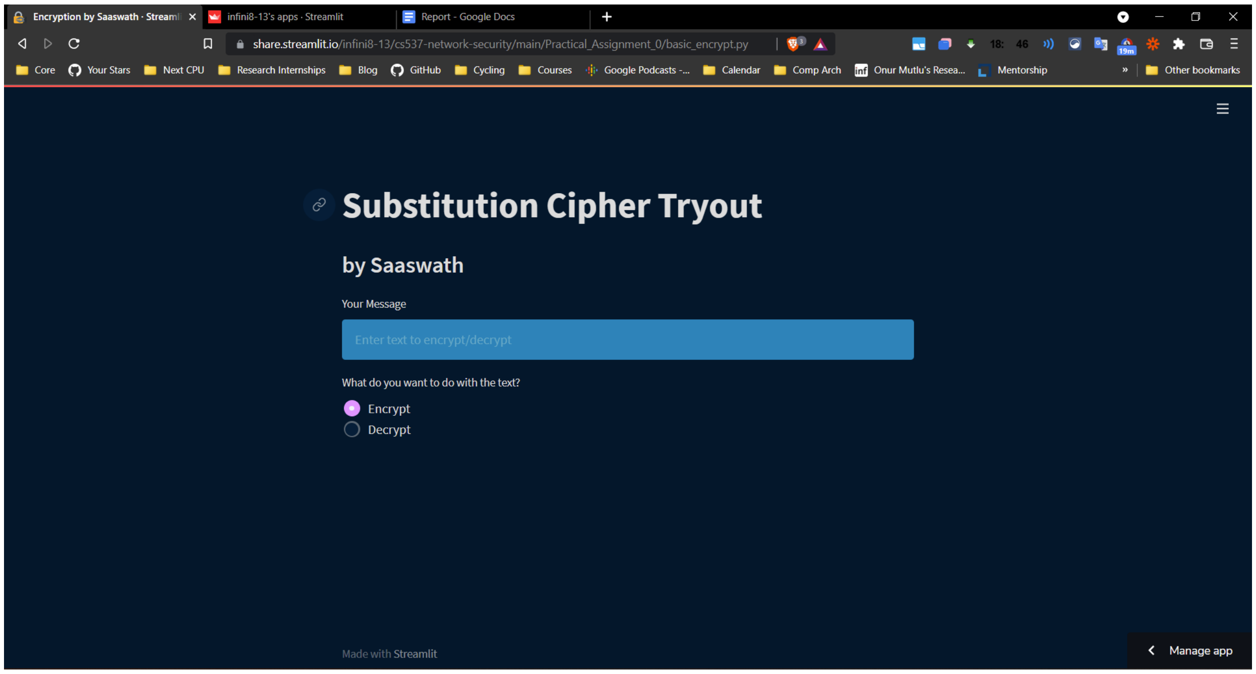
CS537

Practical Assignment 0

L N Saaswath, Part III - EEE



Substitution Cipher Tryout

by Saaswath

Your Message

Enter text to encrypt/decrypt

What do you want to do with the text?

[✓ Encrypt] Decrypt

Submission resources:

CS537 Assignments Repo

https://github.com/infini8-13/CS537-Network-Security

PA0 (current assignment)

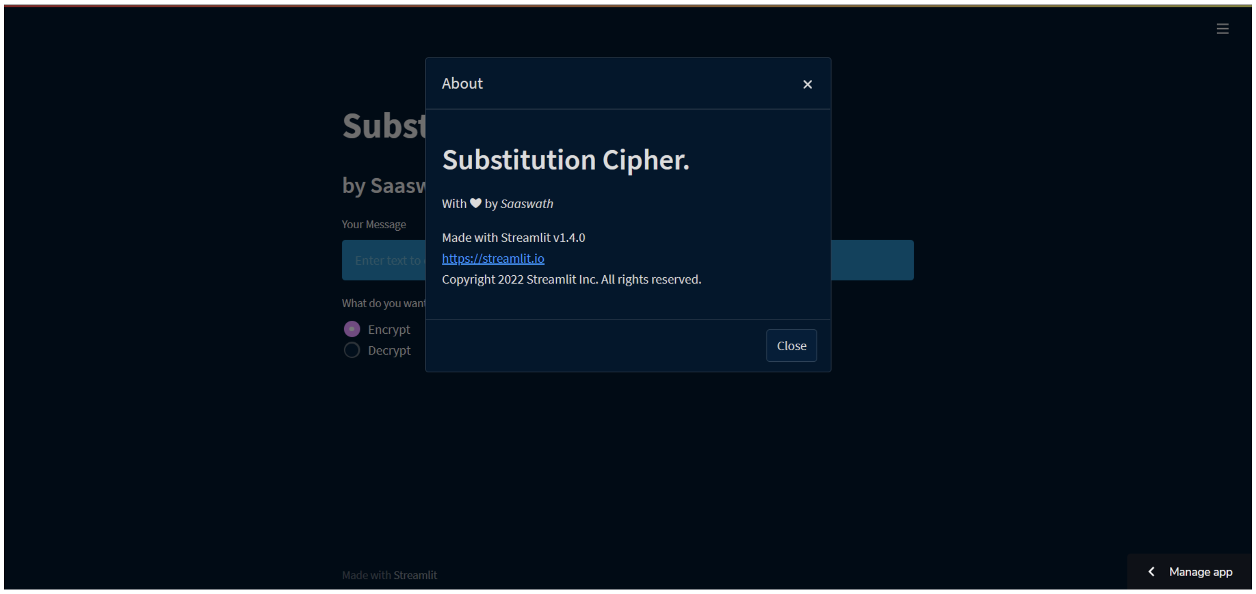
github.com/infini8-13/CS537-Network-Security/tree/main/Practical_Assignment_0

Deployed encryption app

https://zpr.io/bBPzUV7FKkAW

About - Implementation of a simple substitution cipher in python, UI made with streamlit library.

Screenshots

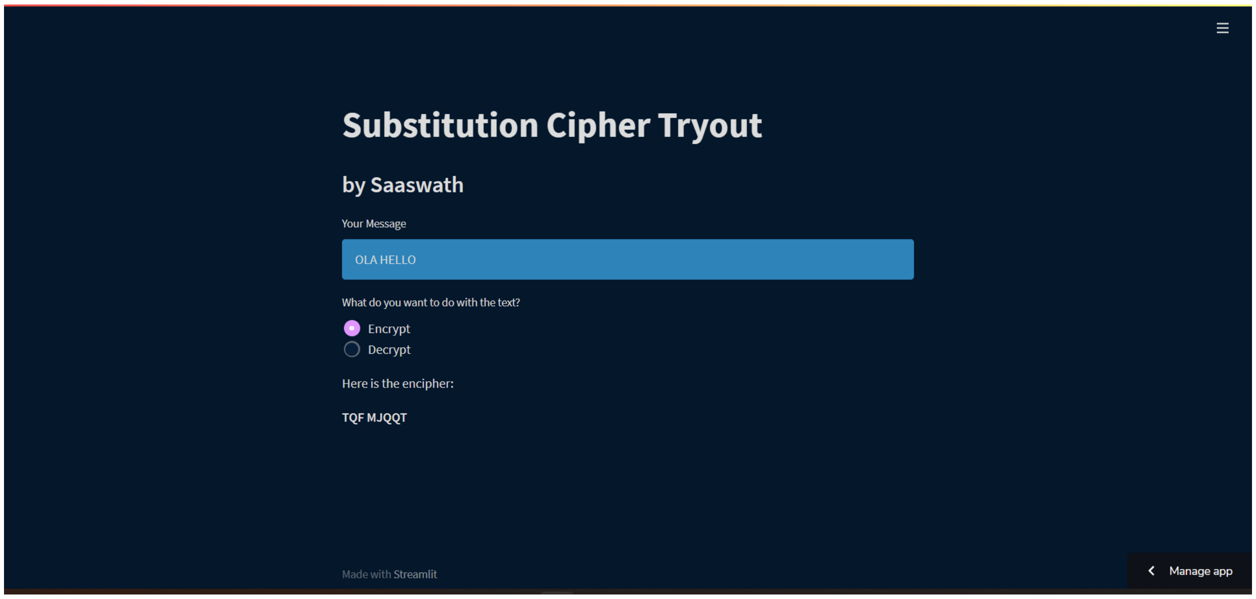


About

Substitution Cipher.

With ❤ by *Saaswath*

Made with Streamlit v1.4.0
https://streamlit.io
Copyright 2022 Streamlit Inc. All rights reserved.



Substitution Cipher Tryout

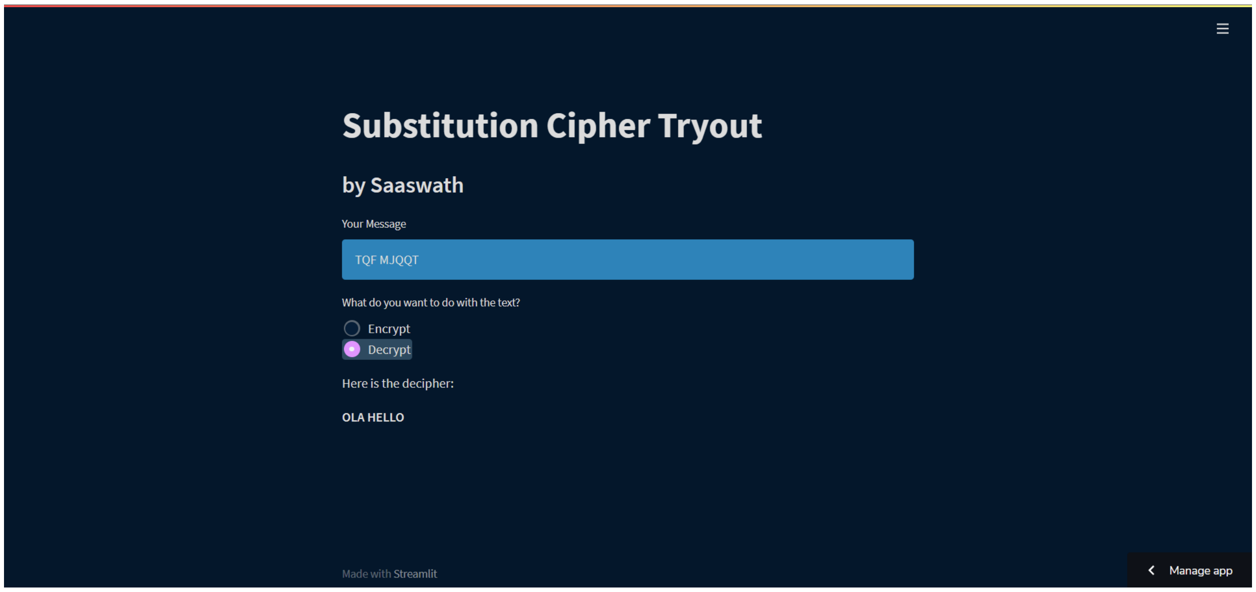
by Saaswath

Your Message: OLA HELLO

What do you want to do with the text?
[✓ Encrypt] Decrypt

Here is the encipher:

TQF MJQQT



Substitution Cipher Tryout

by Saaswath

Your Message

TQF MJQQT

What do you want to do with the text?

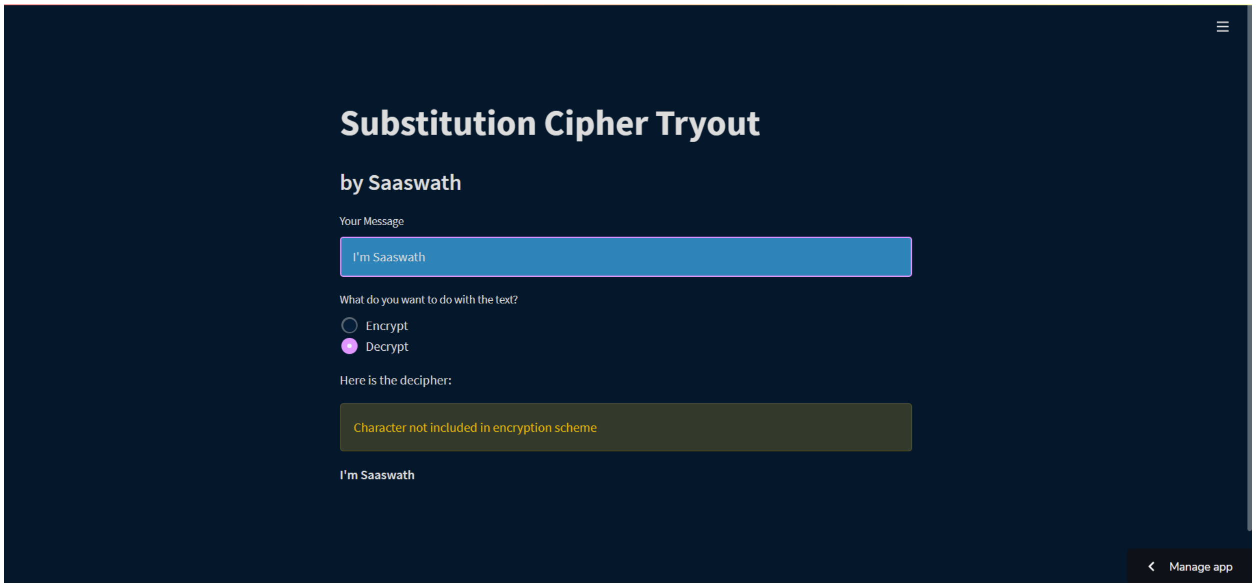
Encrypt [✓ Decrypt]

Here is the decipher:

OLA HELLO

Made with Streamlit

Exception error warning:



Substitution Cipher Tryout

by Saaswath

Your Message

I'm Saaswath

What do you want to do with the text?

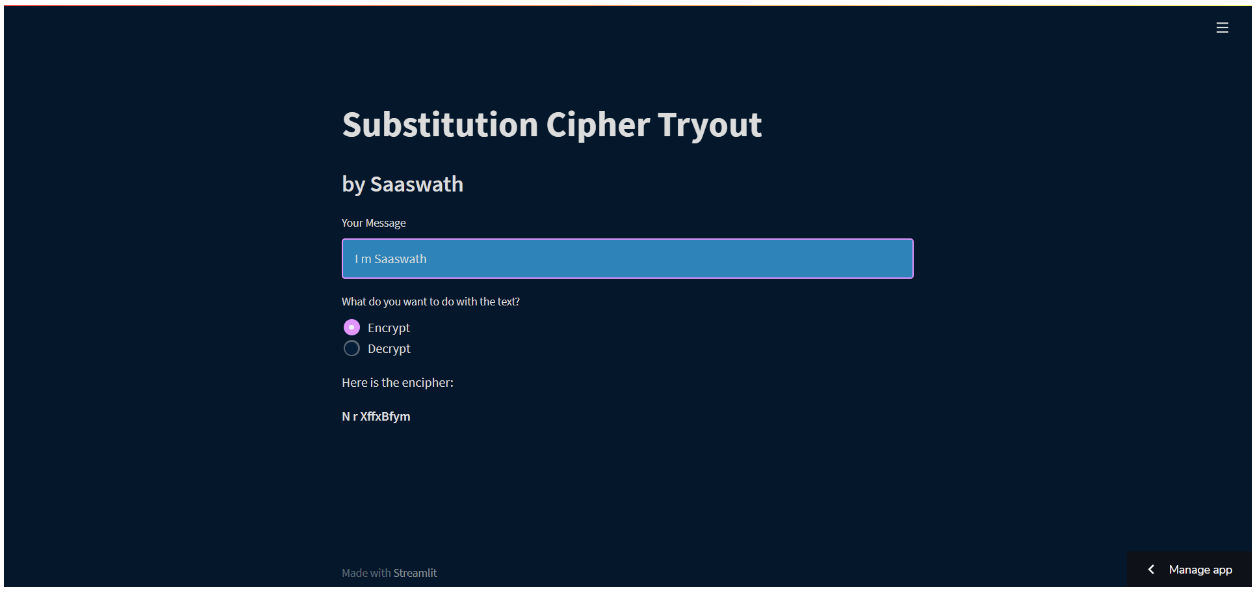
Encrypt [✓ Decrypt]

Here is the decipher:

Character not included in encryption scheme

I'm Saaswath

Without special characters:



Substitution Cipher Tryout

by Saaswath

Your Message

I m Saaswath

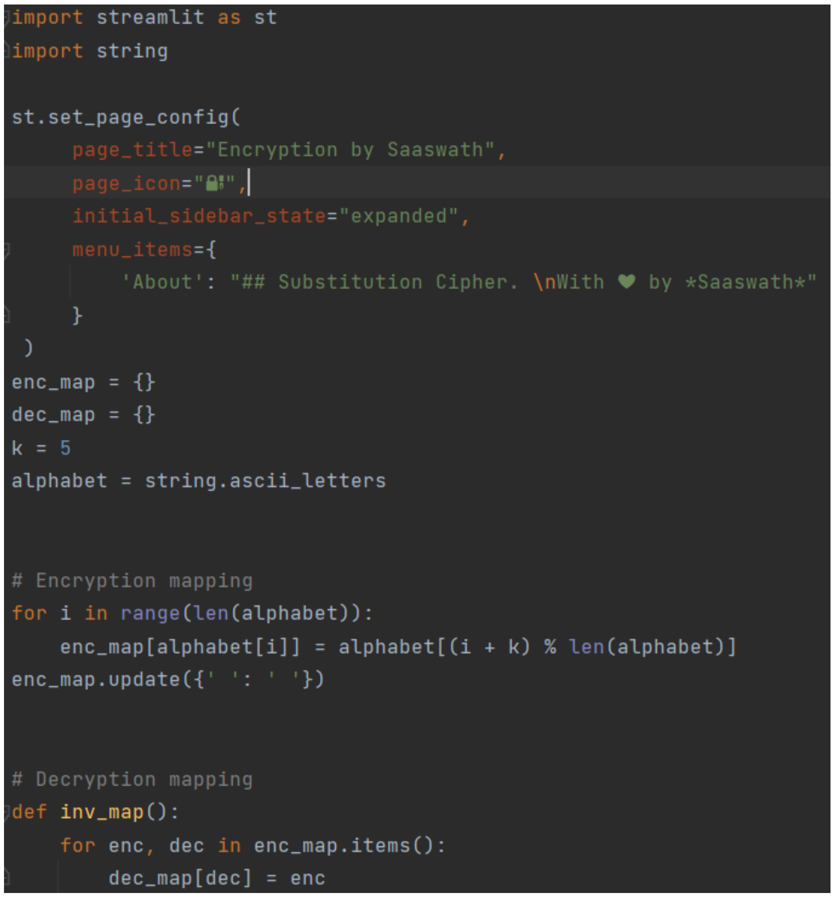
What do you want to do with the text?

[✓ Encrypt]
Decrypt

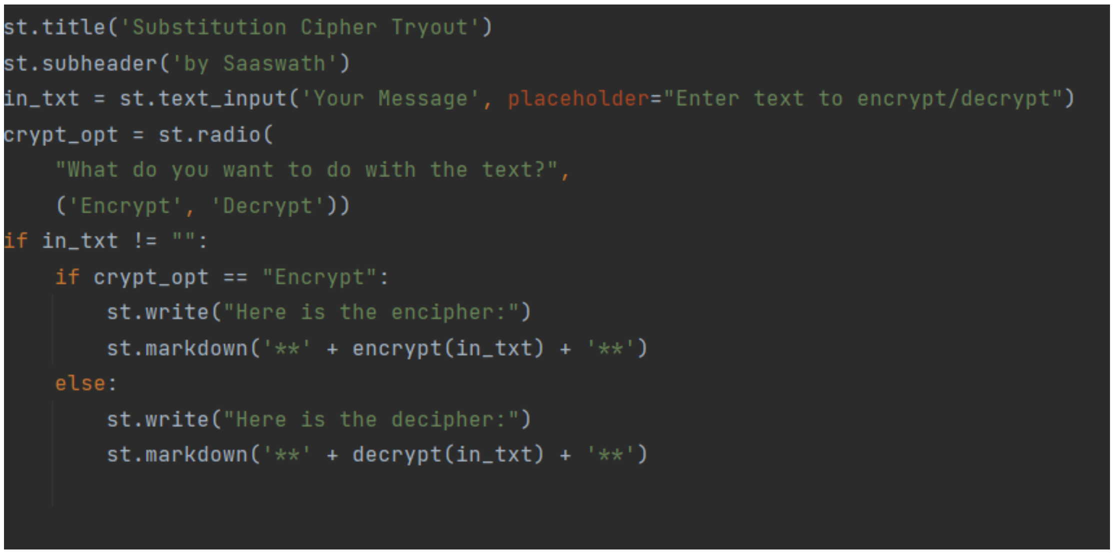
Here is the encipher:

N r XffxBfym

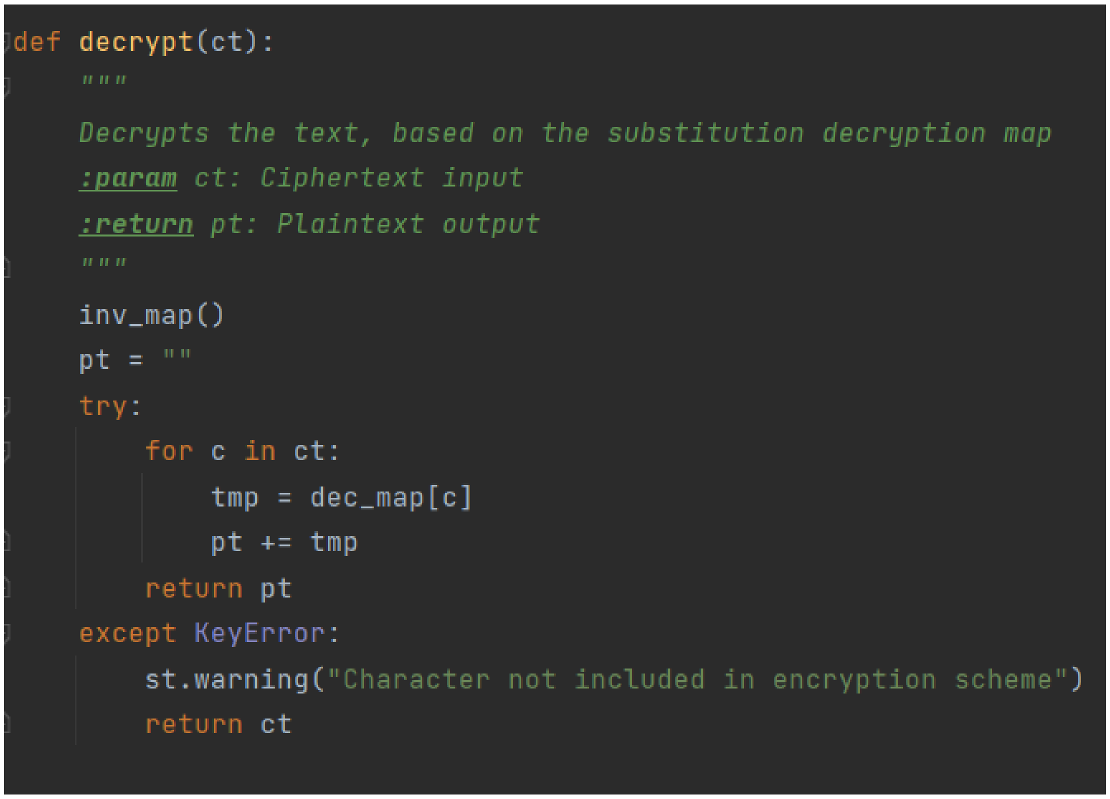
Code Screenshots:



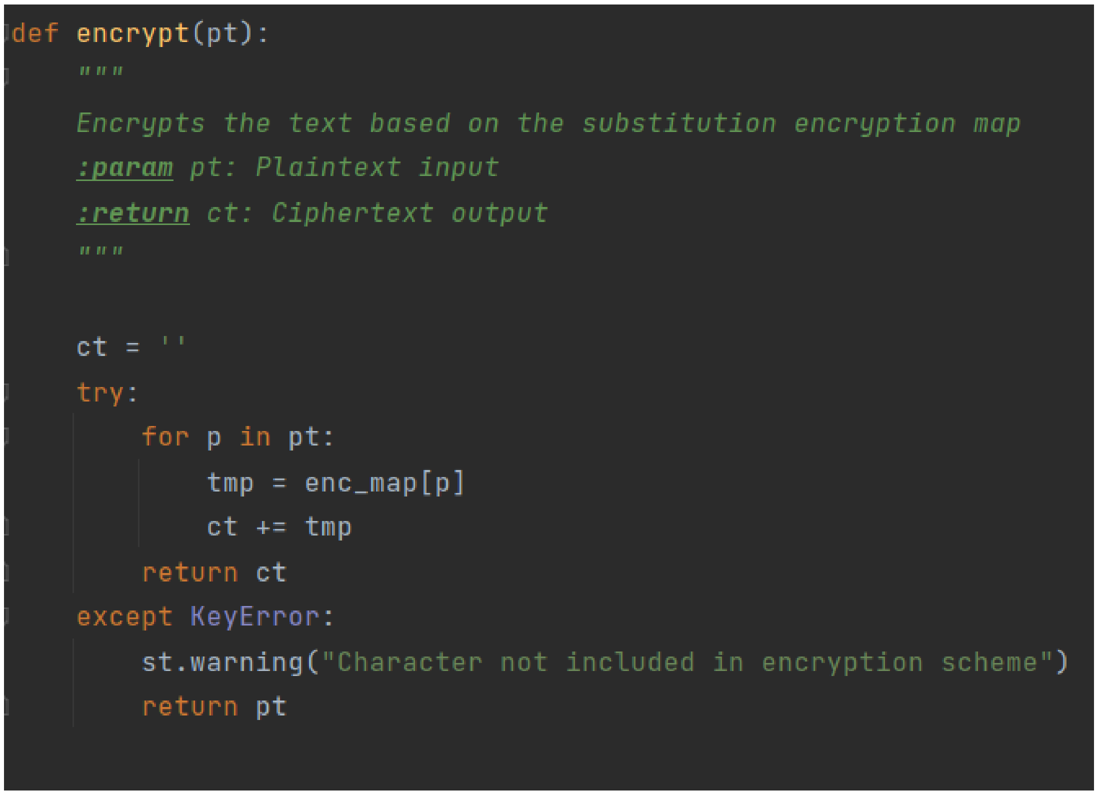
```
import streamlit as st
import string

st.set_page_config(
     page_title="Encryption by Saaswath",
     page_icon="🔒",
     initial_sidebar_state="expanded",
     menu_items={
         'About': "## Substitution Cipher. \nWith 💚 by *Saaswath*"
     }
 )
enc_map = {}
dec_map = {}
k = 5
alphabet = string.ascii_letters


# Encryption mapping
for i in range(len(alphabet)):
    enc_map[alphabet[i]] = alphabet[(i + k) % len(alphabet)]
enc_map.update({' ': ' '})


# Decryption mapping
def inv_map():
    for enc, dec in enc_map.items():
        dec_map[dec] = enc
```



```python
st.title('Substitution Cipher Tryout')
st.subheader('by Saaswath')
in_txt = st.text_input('Your Message', placeholder="Enter text to encrypt/decrypt")
crypt_opt = st.radio(
    "What do you want to do with the text?",
    ('Encrypt', 'Decrypt'))
if in_txt != "":
    if crypt_opt == "Encrypt":
        st.write("Here is the encipher:")
        st.markdown('**' + encrypt(in_txt) + '**')
    else:
        st.write("Here is the decipher:")
        st.markdown('**' + decrypt(in_txt) + '**')
```



```python
def decrypt(ct):
    """
    Decrypts the text, based on the substitution decryption map
    :param ct: Ciphertext input
    :return pt: Plaintext output
    """
    inv_map()
    pt = ""
    try:
        for c in ct:
            tmp = dec_map[c]
            pt += tmp
        return pt
    except KeyError:
        st.warning("Character not included in encryption scheme")
        return ct
```



```python
def encrypt(pt):
    """
    Encrypts the text based on the substitution encryption map
    :param pt: Plaintext input
    :return ct: Ciphertext output
    """

    ct = ''
    try:
        for p in pt:
            tmp = enc_map[p]
            ct += tmp
        return ct
    except KeyError:
        st.warning("Character not included in encryption scheme")
        return pt
```