Cryptography

Project Title: - AES-Crypto-Tool

Submitted By: -

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Project code: -

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# A Symmetric Cryptographic Encryption and Decryption in Python
# done by @Prakhar_Sachan
# Python v3.7.2

import os
import sys
from tqdm import tqdm
from termcolor import colored, cprint

class Encryption:

    def __init__(self, filename):
        self.filename = filename
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```
    def encryption(self):
        try:
            original_information = open(self.filename, 'rb')
        except (IOError, FileNotFoundError):
            cprint('File with name {} is not found.'.format(self.filename),
color='red', attrs=['bold', 'blink'])
            sys.exit(0)

        try:
            encrypted_file_name = 'cipher_' + self.filename
            encrypted_file_object = open(encrypted_file_name, 'wb')

            content = original_information.read()
            content = bytearray(content)

            key = 192
            cprint('Encryption Process is in progress...!', color='green',
attrs=['bold'])
            for i, val in tqdm(enumerate(content)):
                content[i] = val ^ key

            encrypted_file_object.write(content)

            # Print numeric representation of the encrypted content
            print("Numeric representation of the encrypted content:")
```

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            for num in content:
                print(num, end=' ')


        except Exception:
            cprint('Something went wrong with {}'.format(self.filename), color='red', attrs=['bold', 'blink'])
        finally:
            encrypted_file_object.close()
            original_information.close()


class Decryption:

    def __init__(self, filename):
        self.filename = filename

    def decryption(self):
        try:
            encrypted_file_object = open(self.filename, 'rb')
        except (FileNotFoundError, IOError):
            cprint('File with name {} is not found'.format(self.filename), color='red', attrs=['bold', 'blink'])
            sys.exit(0)

        try:
```

```
        decrypted_file = input('Enter the filename for the Decryption file with extension:')
        decrypted_file_object = open(decrypted_file, 'wb')

        cipher_text = encrypted_file_object.read()

        key = 192

        cipher_text = bytearray(cipher_text)

        cprint('Decryption Process is in progress...!', color='green', attrs=['bold'])

        for i, val in tqdm(enumerate(cipher_text)):
            cipher_text[i] = val ^ key

        decrypted_file_object.write(cipher_text)

    except Exception:
        cprint('Some problem with Ciphertext unable to handle.', color='red', attrs=['bold', 'blink'])
    finally:
        encrypted_file_object.close()
        decrypted_file_object.close()

space_count = 30 * ' '
```

```
cprint('{} File Encryption And Decryption Tool. {}'.format(space_count, space_count), 'red')

cprint('{} {}'.format(space_count + 3 * ' ', 'Programmed by Prakhar Sachan.'), 'green')


while True:
    cprint('1. Encryption', color='magenta')
    cprint('2. Decryption', color='magenta')
    cprint('3. Exit', color='red')
    cprint('~Python3:', end=' ', color='green')

    try:
        choice = int(input())
    except ValueError:
        print("Invalid input. Please enter a valid option (1, 2, or 3).")
        continue

    if choice == 1:
        logo = '''  ___                      _   _
| __|_ _  __ _ _ _  _ _ ___| |_(_)___ _ _
| _|| ' \/ _| '_| || | '_ \  _| / _ \ ' \
|___|_||_\__|_|  \_, | .__/\__|_\___/_||_|
                 |__/|_|                '''
        cprint(logo, color='red', attrs=['bold'])
```

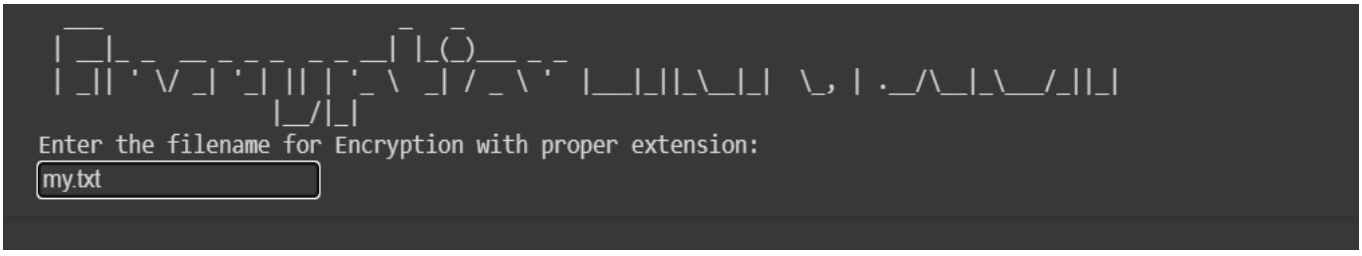
```
        cprint('Enter the filename for Encryption with proper extension:', end=' ', color='yellow', attrs=['bold'])
        file = input()
        E1 = Encryption(file)
        E1.encryption()
        cprint('{} Encryption is done Successfully...!'.format(file), color='green', attrs=['bold'])
        cprint('Do you want to do it again (y/n):', end=' ', color='red', attrs=['bold', 'blink'])
        again_choice = input()
        if (again_choice.lower() == 'y'):
            continue
        else:
            break

    elif choice == 2:
        logo = '''  ___                         _   _
|   \ ___ __ _ _ _  _ _ __| |_(_)___ _ _
| |) / -_) _| '_| || | '_ \  _| / _ \ ' \
|___/\___\__|_|  \_, | .__/\__|_\___/_||_|
                 |__/|_|                 '''
        cprint(logo, color='red', attrs=['bold'])
        cprint('Enter the Encrypted filename with proper extension:', end=' ', color='yellow', attrs=['bold'])
        file = input()
```

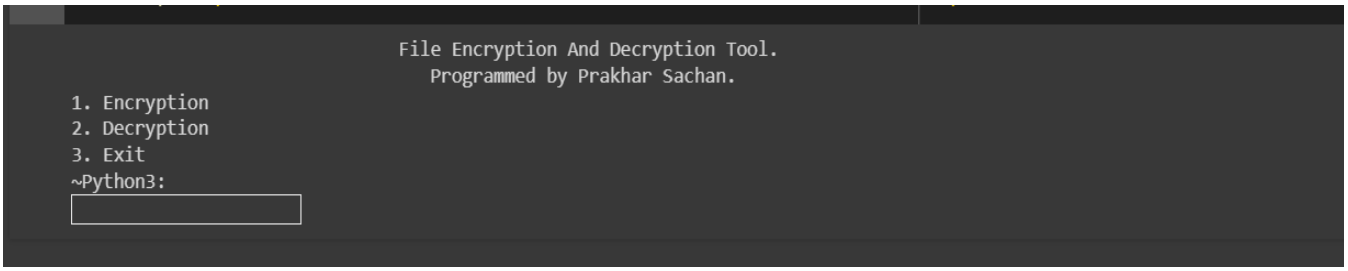
```
        D1 = Decryption(file)
        D1.decryption()
        cprint('{} Decryption is done Successfully...!'.format(file), color='green', attrs=['bold'])
        cprint('Do you want to do it again (y/n):', end=' ', color='red', attrs=['bold', 'blink'])
        again_choice = input()
        if (again_choice.lower() == 'y'):
            continue
        else:
            break
    elif choice == 3:
        sys.exit(0)
    else:
        print('Your choice of selection is not available. Please enter 1, 2, or 3.')
```

INPUT: -

Imp: - file save by name my.txt



My.txt - my name is prakhar



OUTPUT:-

Output: - Numeric representation of the encrypted content: 173 185 224 174 161 173 165 224 169 179 224 176 178 161 171 168 161 178 my.txt Encryption is done Successfully...!