

Caesar Cipher

This code will encode and decode text.

I was deeply influenced by the book "Tiny Python Projects" by Ken Youens-Clark (ISBN 9781617297519). ^[1]. I used the examples and structure layed out by Mr. Youens-Clark to create this command-line program. You can find his code on [Github](#) and download it using the following command:

```
$ git clone https://github.com/kyclark/tiny_python_projects
```

A [Caesar Cipher](#) shifts a letter up or down the alphabet a certain number of places. The default for this code is a right-rotation of 3 letters. As an example, abc12 encodes to def45, making def45 decode to abc12.

Installation

Clone from GitHub.

```
git clone https://github.com/fultonb/caesar_cipher.git
```

Usage

Using text as input:

```
$ ./cc_encode.py 'Hello World!'
Khoor2Zruog$
```

Use the -d flag to decode text:

```
./cc_encode.py -d 'Khoor2Zruog$'
Hello World!
```

Using the -l flag:

```
$ ./cc_encode.py -l 'Hello World!'
Hhoor Wruog!
```

Use the -d and -l flag to decode text:

```
./cc_encode.py -d -l 'Hhoor Wruog!'
Hello World!
```

Use the -n flag to shift the letters 5 spaces to the right while encoding:

```
$ ./cc_encode.py -n 5 abc12
fgh67
```

Use the -n flag, with the -d flag, to shift the letters 5 spaces to the left while decoding:

```
./cc_encode.py -d -n 5 fgh67
abc12
```

Use a file as input:

```
$ ./cc_encode.py ./inputs/fox.txt
Wkh2txlfn2eurzq2irA2mxpsv2ryhu2wkh2odCB2grj;
```

Use the -o flag to use a file as output:

```
$ ./cc_encode.py -o fox_decoded.txt 'Wkh2txlfn2eurzq2irA2mxpsv2ryhu2wkh2odCB2grj;' -d

$ more fox_decoded.txt
The quick brown fox jumps over the lazy dog.
```

Use the -h flag for help:

```
$ ./cc_encode.py -h
usage: cc_encode.py [-h] [-n int] [-o str] [-d] [-l] text

Encoding and decoding text using the Caesar Cipher

positional arguments:
  text                Input text or file

optional arguments:
  -h, --help          show this help message and exit
  -n int, --num int   Shift this many spaces (default: 3)
  -o str, --outfile str
                        Output filename (default: )
  -d, --decode        Decode text (default: False)
  -l, --lower_case    Uses only lower case alphabet (default: False)
```

Run all tests using:

```

$ make test
pytest -xv test.py
===== test session starts =====
...
collected 19 items

test.py::test_exists PASSED [ 5%]
test.py::test_usage PASSED [ 10%]
test.py::test_bad_num PASSED [ 15%]
test.py::test_bad_num_lower_case PASSED [ 21%]
test.py::test_encode_text1 PASSED [ 26%]
test.py::test_decode_text1 PASSED [ 31%]
test.py::test_decode_fox_text_using_2 PASSED [ 36%]
test.py::test_file_bustle PASSED [ 42%]
test.py::test_decode_file_bustle PASSED [ 47%]
test.py::test_file_fox PASSED [ 52%]
test.py::test_decode_file_fox PASSED [ 57%]
test.py::test_file_fox_lower_case PASSED [ 63%]
test.py::test_decode_file_fox_lower_case PASSED [ 68%]
test.py::test_file_spiders PASSED [ 73%]
test.py::test_decode_file_spiders PASSED [ 78%]
test.py::test_text_outfile PASSED [ 84%]
test.py::test_decode_text_outfile PASSED [ 89%]
test.py::test_file PASSED [ 94%]
test.py::test_decode_file PASSED [100%]

===== 19 passed in 1.93s =====

```

Type check using mypy:

```

$ mypy cc_encode.py
Success: no issues found in 1 source file

```

Interleave the input file with the output file (include line numbers):

```
$ paste -d '\n' inputs/preamble.txt test-encode-outs/preamble.txt /dev/null | nl
1  When, in the course of human events, it becomes necessary for one people to
2  Zkhq/2lq2wkh2frxuvh2ri2kxpdq2hyhqvw/2lw2ehfrphv2qhfhvvduB2iru2rqh2shrsch2wr2
3  dissolve the political bands which have connected them with another, and to
4  glvvroyh2wkh2srolwlfdo2edqgv2zklfk2kdyh2frqqhfwg2wkhp2zlw2dqrwkh2u/2dgg2wr2
5  assume among the powers of the earth, the separate and equal station to
6  dvvxph2dprqj2wkh2srzhuv2ri2wkh2hduw/2wkh2vhsdudwh2dgg2htxdo2vwdwlrq2wr2
7  which the laws of nature and of nature's God entitle them, a decent respect
8  zklfk2wkh2odzv2ri2qdwuh2dgg2ri2qdwuh*v2Jrg2hqwlwoh2wkhp/2d2ghfhqw2uhvshfw2
9  to the opinions of mankind requires that they should declare the causes
10 wr2wkh2rslqlrqv2ri2pdqnlqg2uhtxluhv2wkdw2wkhB2vkrxog2ghfoduh2wkh2fdxvhv2
11 which impel them to the separation.
12 zklfk2lpsho2wkhp2wr2wkh2vhsdudwlrq;
```

License

[MIT](#)

[1] Youens-Clark, K. (2020). **Tiny Python Projects**. Manning Publications