

Homework #4 Introduction to Computing

Due: Oct. 8 (Friday at 11:59 PM)

File Encryption Program

You are to extend HW #1 to perform the simple encryption scheme (called a Caesar cipher) on each letter from a user specified text-file to generate a new encoded text-file with a user specified file name. Non-letter characters should just be copied directly to the encoded text-file. Your program needs to:

- validate that the user specified file to encode exists (force the user to reenter until they specify an existing file)
- validate the user specified shift amount is a valid integer (force the user to reenter until a valid integer is entered)
- check if the user specified file name for the encoded file exists before opening it for write. If it already exists, ask the user if they are okay with it being wiped out. If they are not, ask them to pick a different file name to receive the encoded text.

Your program's interaction should look something like: (Student input shown in **bold**.)

```
Welcome to the Caesar Cipher Encryption Program

Enter the text-file name to encrypt: message.txt
Sorry the file 'message.txt' does NOT exist -- please try again!
Enter the text-file name to encrypt: messaeg.txt
Sorry the file 'message.txt' does NOT exist--please try again!
Enter the text-file name to encrypt: message.txt

Enter the shift amount for encoding: three
The shift amount must be an integer (e.g., 3) -- please try again!
Enter the shift amount for encoding: 3

Enter the text-file name to receive the encrypted message: encrypted.txt
WARNING: The file 'encrypted.txt' already exists!
Is it okay to wipe it out (y/n)? y

The file 'message.txt' encrypted with a shift amount of 3 to file 'encrypted.txt'
```

Save your program in a file called fileEncrypt.py

Follow the program format and structure described in section 2.6.4 of the text, and be sure to use good style:

- meaningful variable names with good style (i.e., use CamelCase)
- docstring comment at the start of the program
- use constants where appropriate with good style (ALL_CAPS_AND_UNDERSCORES)
- design your program first using top-down design!!!
- implement your design using functions

Submit your homework electronically at http://www.cs.uni.edu/~schafer/submit/which_course.cgi

The steps for the homework submission system are:

1. Write, debug, and test your program. Save it in a file called fileEncrypt.py.
2. Log on to the submission system at: http://www.cs.uni.edu/~schafer/submit/which_course.cgi
(It is very likely that you will get some security certificate warnings when trying to use this. You may add an exception and accept the existing security certificate.) Use the same AD-ITS User name and password you use to log on the lab computers.
3. Select the course and section number of "810:051, Intro to Computer, Fienup". Click the "Continue".

Name: _____

4. Select the homework that you wish to submit: "HW 4: Encrypt File". Click the "Continue" button.
5. Specify how many extra files you want to submit. Just leave it at 0. Click the "Continue" button.
6. Upload your program by Browsing and selecting your fileEncrypt.py file. Click the "Continue" button.
7. The next page reports on the status of the upload(s). You can always continue to upload a better version of the program until the deadline. The newer file will replace an older file of the same name.