Programming Exercise 10.6

NSA Encoder, v.1.0

Purpose. Practice using a text file as input, and writing output to a text file.

Pretend that you have been hired by the National Security Agency (NSA) to write a program that scrambles the text in a text file, and rewrites it as a new file. Someone else will be hired to write a program to unscramble the file and output it to the console screen. In this way, the NSA can put secret messages into text files, scramble the files with your program, and send them as attachments to email. The recipients of the email messages will use the decoder program to read the file and display the original message.

You already performed a "proof of concept" that used console I/O in Exercise 9.2. This new version adapts that to use text file I/O.

Requirements. Write **`nsaEncoder1.py`** based on Exercise 9.2's `nsaEncoder0.py`. Prompt the user to enter the name of an existing text file to be encoded, using the encoding algorithm from `nsaEncoder0.py`. Read the text from the input file and encode it a line at a time, and write each line of encoded text to an output file after it's encoded. Name the output file **`secret.txt`**.

Algorithm.

```
prompt for the input file name
open the input file for input
open secret.txt for output
start end-of-file loop
  read a line from the input file
  decode the line
  write the line to the output file
loop ends here
close output file
close input file
```

Program I/O. Input: the name of the file to be encoded. Output: `secret.txt`.

Example. Here's what the console part of the I/O should look like, with user input in blue:

```
Enter name of file to decode:
LatestNewFromEurope.txt
```