ENSF 592 Spring 2021 – Assignment 3 Grading

Assignment 3 Rubric (24 marks, 10% of overall grade)
Your code must successfully compile to be graded. Code that does not compile will be given a grade of zero. For compiled code, partial marks may be given for each criterion listed below.

Commenting and Syntax (6 marks):

- (1) Your name must be included in the file header
- (1) Comments must be included throughout the code to explain the functionality
- (2) All classes, methods, and functions are fully documented using docstrings (including summary, parameters, and return values)
- (1) All variables and functions have clear and useful names that use lowercase words separated by an underscore, all classes have CamelCase names
- (1) Code is clearly indented and spaces are included between variables and operators
- One mark will be deducted for each error or missing component, up to a maximum of 6 marks

Code Structure and Semantics (7 marks):

- (2) Solution contains at least two user-defined classes
- (3) Solution contains at least three user-defined functions aside from __init__ or main (functions may be included within the classes)
- (1) Solution contains at least one iterable object
- (1) Solution contains at least one regular expression
- One mark will be deducted for each error or missing component, up to a maximum of 7 marks

User Interface and Functionality (5 marks):

- (1) User is given clear guidance on how to enter the input values
- (1) Program allows the user to choose either encoding or decoding functionality
- (1) Program accepts two strings (text and cipher)
- (1) If an invalid cipher is provided, a ValueError exception is used to prompt for cipher re-entry without terminating the program
- (1) The program outputs a lowercase string with no spaces between the letters
- One mark will be deducted for each error or missing component, up to a maximum of 5 marks

Execution (6 marks):

- Example test cases are provided in the screenshot below
- (3) Your program will be executed to test the following cases:
    - Encoding a sentence that includes letters, numbers, and punctuation such as “This is an example sentence with 098273409870 and @#($*&@)#(*$)&.”
    - Decoding a string of lowercase letters and numbers (as though the text had already been encoded by your program)
    - Entering an invalid cipher such as “&56abj_2”
    - All students will have their code tested with the same input values
- (3) Screenshot of successful execution is shown
    - Your screenshot should include all successful functionality
        - 1) encoding, 2) decoding, 3) handling incorrect cipher input
- One mark will be deducted for each error or missing component, up to a maximum of 6 marks

Example execution and test cases – your formatting and wording may vary.

```
(ensf592) C:\Users\eamarasc\Dropbox\Teaching\ENSF 592\Spring 2021\Assignments\Assignment 3>python encryption_key.py
ENSF 592 Encryption Program
Select 1 to encode or 2 to decode your message: one
You must select either 1 or 2.
Select 1 to encode or 2 to decode your message: good idea to give user feedback on input...
You must select either 1 or 2.
Select 1 to encode or 2 to decode your message: 1
Please enter the text to be processed: This is an example. Text may include 2034987029837 and @)(*#$&)(*#&$.
Please enter the cipher text: Inv@l1d
Your cipher must be 26 elements of a-z or 0-9.
Please enter the cipher text: 1cd5fghijkl6nop0rst4vw3yza
***Processed string for demo only: thisisanexampletextmayincludeand
Your output is: 4ijtjt1ofy1n06f4fy4n1zjod6v5f1o5


***Example test cases to bypass user input***

Test 1, Encoding: abcde
Cipher 1: 1cd5fghijkl6nop0rst4vw3yza
***Processed string for demo only: abcde
Your output is: 1cd5f

Test 2, Decoding: a9c4e
Cipher 2: 9c4efghi5klmno6qrsbuv0xyza
Your output is: zabcd

Test 3, Encoding: Tell me and I forget. Teach me and I remember. Involve me and I learn - Benjamin Franklin
Cipher 3: bcd5fghijk60nopq1stu43xy2a
***Processed string for demo only: tellmeandiforgetteachmeandirememberinvolvemeandilearnbenjaminfranklin
Your output is: uf00nfbo5jgpshfuufbdinfbo5jsfnfncfsjo3p03fnfbo5j0fbsocfokbnjogsbo60jo

Test 4, Decoding: uf00nfbo5jgpshfuufbdinfbo5jsfnfncfsjo3p03fnfbo5j0fbsocfokbnjogsbo60jo
Cipher 4: bcd5fghijk60nopq1stu43xy2a
Your output is: tellmeandiforgetteachmeandirememberinvolvemeandilearnbenjaminfranklin

Test 5, Decoding: ui2c25uzoenp5uc2zvujgvmuijoh5joui2xpsme1zoopuc2522ops2w2oupv1i2eui2bnv5uc2g2muxjuiui2i2zsui2m2ol2mm2s
Cipher 5: zc1e2ghij6lmnop4rs5uvwxyba
Your output is: thebestandmostbeautifulthingsintheworldcannotbeseenoreventouchedtheymustbefeltwiththehearthelenkeller
```