

CS 8 – Introduction to Computer Science
HOMEWORK 5
Print this form and write your answers on it.

SCORE: (out of 40)

Submit this homework (hardcopy) to class. DUE DATE is 02/26/18.

Name: _____

Umail: _____@umail.ucsb.edu

Perm ID Number: _____

Lab Time Circle one: 1 PM 2 PM 3 PM 4 PM

Based on Ch. 3 material. If you need more space to write your answers, feel free to use an extra blank page and attach it to this homework.

To answer some of the questions on this homework, it will be very helpful to have a computer system running Python version 3.x (e.g., 3.4.3) available to you.

IMPORTANT: You MUST (a) submit your answers TYPED when asked to and (b) staple your homework submission. You will otherwise lose at least 10 points (out of 40 total).

1. (15 pts) Recall the function **encrypt(string)** from class lecture on Wednesday, 2/21, and that we demonstrated how it works well with lower-case letters, but does not work with upper-case letters. Modify it so that it can do the same for upper-case letters as it can with lower-case letters. In other words, I want **encrypt("ABCDEFGHIJKLMNOPQRSTUVWXYZ")** to be able to return **"ZYXWVUTSRQPONMLKJIHGFEDCBA"** and I want **encrypt("Penelope")** to be able to return **"Kvmvolkv"**. Assume that these strings do not have any other characters in them (i.e. just upper-case or lower-case alphabets). Submit your typed answer on a separate sheet and staple it to this page.

2. (10 pts) Write a Python function **stripSpaces(myString)** that takes a string representing a phrase as a parameter and returns the phrase back *but without* all the spaces between each word. So for example: **stripSpaces("CIPHERING a new word anew")** returns **"CIPHERINGanewwordanew"**. Submit your typed answer on a separate sheet and staple it to this page.

3. (15 pts) Read section 3.5 in the book (Substitution Cipher) and look especially at the code in Listing 3.5. Try it out on Python IDLE then answer the following questions on the back of this page. Tell me what happens if you run the function in Listing 3.5 as **substitutionEncrypt(p, k)**, where:
- a. (5 pts) **p = "python"** and **k = "mnopqrstuvwxyzabcdefghijkl "**. (You may want to copy and paste this into your Python IDLE run – also note that there is a space character at the end of the string **k**). **Explain** why you got the result that you did. The explanation is worth 4 out of the 5 points.
 - b. (5 pts) **p = "The spy wants to come in from the cold"** and **k = "jamesbond"**. **Explain** why you got the result that you did. The explanation is worth 4 out of the 5 points.
 - c. (5 pts) Is this encryption symmetrical? Explain your answer with a good example.