

**CS 8 – Introduction to Computer Science**  
**HOMEWORK 8**

Print this form and write your answers on it.

SCORE: (out of 40)

**Submit this homework (hardcopy) to class. DUE DATE is 03/14/18.**

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**Perm ID Number:** \_\_\_\_\_

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

1. (20 pts) Write a Python function, **ListNames**, that keeps asking the user to input an undetermined number of names and creates a growing Python list of these names. Once the user enters 'q' or 'Q' at the input prompt, however, the program stops asking for names and instead prints out the message: "You entered  $N$  names." (where  $N$  is the number of people the user entered). The function returns the Python list of names in alphabetical order. That last 'q' or 'Q' entry should not be counted towards the calculation of  $N$  and should not be in the final returned list.  
 Submit the answer to this question as a print out on a separate attached (stapled) sheet to this homework.

2. (20 pts) Consider  **$\Sigma X(n)$** , a sum of numbers in the following infinite series:

$$2 + 5 + 8 + 11 + 14 + 17 + \dots \text{etc}$$

Write TWO Python functions: **SeriesX1** and **SeriesX2**, where **SeriesX1(n)** calculates the value of the sum up until the  $n^{\text{th}}$  position (assume the first position is position 0) using a *recursive function* approach, and where **SeriesX2(n)** does so using a *while loop*.

Submit the answer to this question as a print out on a separate attached (stapled) sheet to this homework.