Holly Do - COMP 614

Homework 2

The URL for your final CodeSkulptor file:

https://py3.codeskulptor.org/#user310_7NY4n1pxDw_25.py

Question 2.C.i:

Given the length of input list is m and we are supposed to take the average of n numbers at a time, because n<m, n pieces of data from the input list should be used to compute one individual element in the output list.

Question 2.C.ii:

Without using iteration, we could extract a contiguous sequence of elements from the input list using list slicing, such as slice = data[i : i+n]. The average of slice would be the element at index i in the output list, given n < m and i+n <= m.

Question 2.C.iii:

In the case where n<m, the number of data will be in the output list is (m-n+1). Because i+n <= m, the maximum of i+n would be m or i= m-n. Since i the index is counted from zero, the length of the list is the maximum index+1 or (m-n+1). Thus, the number of data will be in the output list is (m-n+1).

Question 2.D.i:

For clean_with_deletion, to create a deep copy, we create a new empty list then add each value in the original data, excluding the rows that contained value None, to the new list.

Question 2.D.ii:

For column_avgs, the Python expression for the number of columns in the data set is len(data[row_index]). The length of each row is the same, which is the length of the list attached with that row. This is also the number of columns of the matrix.

Question 2.D.iii:

To build a list of all of the numeric elements in the ith column of the matrix, we visit all the values of the ith column. The number of values including None should be len(data). To do this, we choose one column i, and then append the value at data[row_index][i] into the list, iterating over len(data) from 1 to (len(data)-1). The reason we iterate over this

range is because the value at index zero is the header and the value at index len(data) is out of range.
Repeating this process over the number of columns, len(data[row_index]), will return a list of column's averages.

Homework Reflection:

1. What were the two most important concepts and/or skills that were reinforced by this assignment? Why do you believe that these concepts are important? (Your response must be 3-6 sentences.)
   Two most important concepts I've learned from this assignment is traversing list of lists and separating data into different ranges. Traversing list of lists helps me manage the data within the rows and columns of the table. Considering different outcomes/behaviors according to the ranges helps me anticipate what can go wrong in my program.

2. How do the skills and concepts that you applied in this assignment transcend the specific application/problem that you were tackling? How could you envision applying these skills and concepts again in the future? (Your response must be 2-4 sentences.)
   These skills help me tackle a complex program with many different smaller sub-problems. I would definitely use these skills again for future assignments because they provide a practical way to work with tables in a dataset.

3. What do you believe you did well on this assignment? If you could do this assignment over, would you do anything differently? Why or why not? (Your response must be 2-4 sentences.)
   I think I've got the results correctly. If I could work on this assignment over, I would make sure to understand the questions asked and the meaning of the parameters. Misunderstanding the questions can result in a lot of wasted time down the line.

4. Do you think you're comfortable enough with the concepts covered in this assignment that you would be capable of teaching them to a peer? Why or why not? (Your response must be 2-4 sentences.)
   I am comfortable enough to teach to a peer. This assignment helped me get familiar with rows and columns in a dataset. It is a valuable skillset to have.