CS:1210 Practice Problem Set 5

Morning Section: Complete before Tuesday, March 4th
Evening Section: Complete before Monday, March 3rd

1. Suppose that the list `L` equals `[100, ["hello", "bye"], [[1, 2], [2, 3], [3, 4]], 900L]`.

   Write down the values that the following expressions evaluate to.

   (a) `len(L)`

   (b) `len(L[1][0])`

   (c) `L[2][2]`

   (d) `type(len(L)-1)`

   (e) `type(L[len(L)-2])`

   (f) `type(L[len(L)-1])`

   (g) `L[1][1][1]`

   (h) `L[2][2][1]`

   (i) `"bye" in L`

   (j) `"bye" in L[1]`

   (k) `900 in L`

   (l) `100.0 in L`

   (m) `(3 in L[2][0]) or (3 in L[2][1])`

2. What is the output the following code fragment produces.

```
L = [10, [1, 2, 3], "hello", [23]]

L.append(10)
print L
L.extend([20, 10])
print L
L.append([10, 20])
print L
```

3. Write a function called `equalLengthStrings` that takes as its single parameter a list of strings and returns `True` if all the strings in the given list have the same length. The function returns `False` otherwise.

4. Write a function called `addSubsequence` that takes a list `L` of numbers, and two indices `i` and `j` and returns the sum `L[i] + L[i+1] + ... + L[j]`. You can assume that `L` is non-empty and $0 \leq i \leq j < $ `len(L)`. For example, if `L = [2, 4, 6, 3, 7, 2, 8, 9, 1]` then the call to `addSubsequence(L, 2, 5)` should return 18.

5. Write a function called `deleteSubsequence` that takes a list `L` of numbers, and two indices `i` and `j` and returns the list with the sublist `L[i], L[i+1], ..., L[j]` removed. For example, if `L = [2, 4, 6, 3, 7, 2, 8, 9, 1]` then the call to `deleteSubsequence(L, 2, 5)` should return `[2, 4, 8, 9, 1]`.

6. Write a function called `maxPairSum` that takes a list of numbers as a parameter and returns the pair of numbers in consecutive positions that add up to the largest value. For example, if the given list is `[3, -1, 4, 2, 5, -1, 11, -8]` then the function would return the list `[-1, 11]`.

7. Write a function called `minIndex` that takes a list of numbers as a parameter and returns the index of a smallest element in the list. If there are several smallest numbers in the list, it does not matter which index is returned. For example, if the parameter is `[3, -1, 2, 3, -1, 11]` then the function could return 1 or it could return 4.