

Assignment 4

Level 1:

- A. (a) Write a recursive method, `sum(L)`, in pseudo-code to calculate the sum of the integers in the List `L` of integers. Use positions to traverse the list. See the hint in the lecture notes. Analyze line by line your algorithm.
(b) Write a second recursive algorithm that uses the rank-based operations to traverse the list to calculate the sum of the integers in a Sequence. Analyze your algorithm line by line.
(c) Choose the better algorithm, either (a) or (b), then implement that algorithm in JavaScript using the `List.js` file or `Sequence.js` file provided in a previous assignment.
- B. Design a pseudo-code recursive method, `findMax(L)`, that returns the maximum number in the list `L`. Implement in JavaScript using the `List.js` file provided previously.

Level 2:

C-2-4 Describe a pseudo-code recursive algorithm, `setOfSubsets(n)`, that enumerates all of the subsets of the set of numbers $\{1, 2, \dots, n\}$. What is the running time of your method?