Longest Consecutive Subsequence

Define Set:

A = { Set of all input array values } — A is created by copying contents of input array

A needs to be any data structure capable of O(c) lookup time for members

Ex: Python has a **Set** data structure that is implemented using a hash table where its keys and values are themeselves members of the set

longestSequenceLength = 0

x_1 x_2 … x_n

For each X_i

If predecessor$_{xi}$ = (x_i - 1) **NOT** in Set A:

Then x_i is start of a sequence

sequenceLength = x_i +1

nextNum = x_i +1

While nextNum in Set A:

sequenceLength += 1

nextNum += 1

Build sequence while successors can be found

If sequenceLength > longestSequenceLength

then longestSequenceLength = sequenceLength

Once loop is done

Return longestSequenceLength