

# Longest Consecutive Sequence

**Question:** Given an unsorted array of integers, find the length of the longest consecutive elements sequence.

For example,

Given [100, 4, 200, 1, 3, 2],

The longest consecutive elements sequence is [1, 2, 3, 4]. Return its length: 4.

Your algorithm should run in  $O(n)$  complexity.

## Solutions:

class Solution:

# @param num, a list of integer

# @return an integer

def longestConsecutive(self, num):

startToEnd = {}

endToStart = {}

longest = 0

for i in range(0, len(num)):

start = num[i]

end = num[i]

if num[i] in startToEnd:

end = startToEnd[num[i]]

del startToEnd[num[i]]

del endToStart[end]

if num[i] in endToStart:

start = endToStart[num[i]]

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    del startToEnd[start]
    del endToStart[num[i]]
    if num[i]-1 in endToStart:
        start = min(start, endToStart[num[i]-1])
        del startToEnd[endToStart[num[i]-1]]
        del endToStart[num[i]-1]
    if num[i]+1 in startToEnd:
        end = max(end, startToEnd[num[i]+1])
        del endToStart[startToEnd[num[i]+1]]
        del startToEnd[num[i]+1]
    startToEnd[start] = end
    endToStart[end] = start
    longest = max(longest, end-start+1)
return longest
```

Solution().longestConsecutive( [100, 4, 200, 1, 3, 2] )