AlgoExpert Quad Layout JavaScript 12px Sublime Monokai 00:00:00

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Solution 1 Solution 2

```javascript
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// O(n^2) time | O(n) space
function longestIncreasingSubsequence(array) {
  const sequences = new Array(array.length);
  const lengths = array.map(num => 1);
  let maxLengthIdx = 0;
  for (let i = 0; i < array.length; i++) {
    const currentNum = array[i];
    for (let j = 0; j < i; j++) {
      const otherNum = array[j];
      if (otherNum < currentNum && lengths[j] + 1 >= lengths[i]) {
        lengths[i] = lengths[j] + 1;
        sequences[i] = j;
      }
    }
    if (lengths[i] >= lengths[maxLengthIdx]) maxLengthIdx = i;
  }
  return buildSequence(array, sequences, maxLengthIdx);
}

function buildSequence(array, sequences, currentIdx) {
  const sequence = [];
  while (currentIdx !== undefined) {
    sequence.unshift(array[currentIdx]);
    currentIdx = sequences[currentIdx];
  }
  return sequence;
}

exports.longestIncreasingSubsequence = longestIncreasingSubsequence;
```