Larger\_Left\_Right

* Look left from the original integer. That is, look at the elements that come before it in the vector, starting with the one on its immediate left and going toward the start of the vector. Stop when you reach one that is larger than the original integer. Use 0 if you don’t find a larger integer.
* Look right from the original integer. That is, look at the elements that come after it in the vector, starting with the one on its immediate right and going toward the end of the vector. Stop when you reach one that is larger than the original integer. Use 0 if you don’t find a larger integer.
* Choose the larger of those 2 values you identified, and place it in the output vector. If the input element is the largest value in the input vector (that is, if there is nothing larger than it either to its left or to its right), put a 0 in the corresponding element in the output vector.

Consider this sample input vector:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10 | 5 | 9 | 70 | 200 | 50 | 70 | 300 | 75 | 120 | 180 | 130 | 95 | 310 | 360 | 72 | 78 | 400 | 30 | 22 |

Here is the corresponding result vector:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 70 | 10 | 70 | 200 | 300 | 200 | 300 | 310 | 300 | 300 | 310 | 310 | 310 | 360 | 400 | 360 | 400 | 0 | 400 | 30 |

Some explanations:

* The first element of the input vector is 10. There’s nothing to the left of the first element of the input vector, so we call that a 0. As we look to its right, the first element we encounter that is larger than it is the 70 in the 4th spot. Since 70 > 0, the corresponding element in the result vector is 70.
* To get the second element of the result vector, we look at the second element of the input vector (5). We find the closest left neighbor that is larger than it (the 10) and the closest right neighbor that is larger than it (the 9). Since 10 > 9, the second element of the result vector is 10.

Function Requirements

Your 2 function prototypes for this section are:

void iterative(const std::vector<int>& numbers, std::vector<int>& result);  
void recursive(const std::vector<int>& numbers, std::vector<int>& result);

Consider this sample input vector:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10 | 5 | 9 | 70 | 200 | 50 | 70 | 300 | 75 | 120 | 180 | 130 | 95 | 310 | 360 | 72 | 78 | 400 | 30 | 22 |

0. 1. 2 3. 4. 5 6. 7. 8. 9 10. 11. 12. 13. 14. 15 16 17. 18 19

Here is the corresponding result vector:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 70 | 10 | 70 | 200 | 300 | 200 | 300 | 310 | 300 | 300 | 310 | 310 | 310 | 360 | 400 | 360 | 400 | 0 | 400 | 30 |

0. 1 2. 3 4. 5 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19