

Maximum Width Ramp

Given an array A of integers, a ramp is a tuple (i, j) for which $i < j$ and $A[i] \leq A[j]$. The width of such a ramp is $j - i$. Find the maximum width of a ramp in A. If one doesn't exist, return 0.

Example 1:

Input: [6,0,8,2,1,5]
Output: 4

Explanation:

The maximum width ramp is achieved at (i, j) = (1, 5): $A[1] = 0$ and $A[5] = 5$.

Example 2:

Input: [9,8,1,0,1,9,4,0,4,1]
Output: 7

Explanation:

The maximum width ramp is achieved at (i, j) = (2, 9): $A[2] = 1$ and $A[9] = 1$.

Note:

$2 \leq A.length \leq 50000$
 $0 \leq A[i] \leq 50000$

Solution in C++

```
class Solution {
public:
    int maxWidthRamp(vector<int>& A) {
        int n=A.size();

        vector<pair<int,int>> my;
        for(int i=0; i<n; i++) my.push_back({A[i],i});
        sort( my.begin(), my.end());

        int max_width=0;
        int i=0;
        int j=1;
        while(j<n) {
            if (my[i].second<my[j].second) {
                max_width = max( max_width, my[j].second-my[i].second);
                j++;
            }
            else i++;

            if (i==j) j++;
        }

        return max_width;
    }
};
```