Rightmost position of insertion   P54070_en

Write an efficient function

$$\textbf{int } rightmost(\textbf{double } x, \textbf{const } vector<\textbf{double}>\& v);$$

that returns the rightmost position where x could be inserted in the sorted vector v (by adding one position at the end of v and moving the necessary elements one position to the right) so that v would remain sorted.

For instance, assume that x is 23. If v is $[15, 15, 20, 30, 40, 40]$, then we must insert x at the position 3 (between 20 and 30), and the resulting v would be $[15, 15, 20, 23, 30, 40, 40]$. If v is $[17, 23, 23, 35, 42, 42]$, then we could insert x at the positions 1, 2 or 3, so your function must return 3. If v is $[3, 5, 7, 9]$, x should be inserted at the position just to the right of the end of the vector, that is, 4. As a final example, if v is $[23, 23]$, x should be inserted at 2.

Precondition

The vector v is sorted in nondecreasing order.

Observations

- Your solution can only include the `vector` library.

- You can write and use additional functions if you need them.

- You only need to submit the required procedure; your main program will be ignored.

Problem information

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