
Bi-increasing vector

P99753_en

In this problem, we say that a vector with n integer numbers $v [0.. n - 1]$ is *bi-increasing* if $n \geq 2$, $v[0] > v[n - 1]$, and there exists an index j between 0 and $n - 2$ such that:

- $v[0] \leq \dots \leq v[j - 1] \leq v[j]$,
- $v[j + 1] \leq v[j + 2] \leq \dots \leq v[n - 1]$.

For instance, the vector [12, 12, 15, 20, 1, 3, 3, 5, 9] is bi-increasing (with $j = 3$).

Implement an *efficient* function

```
bool search (int x, const vector<int>& v);
```

such that, given an integer number x and a bi-increasing vector v , returns if x is in v or not. You can use and implement auxiliary functions if you need them.

Precondition

The vector v is bi-increasing.

Observation

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

Problem information

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