
Select from two sorted arrays

P72545_en

Write an efficient function

Interface

C++ **int** *select* (**int** *k*, **const vector**<**int**>& *v1*, **const vector**<**int**>& *v2*);
Python **def** *select* (*k*: **int**, *v1*: **list**[**int**], *v2*: **list**[**int**]) -> **int**:

that returns the k -th largest of all the elements contained in $v1$ and $v2$, taking into account repeated elements. For instance, if $v1$ contains a 5 and a 7, and $v2$ only contains a 5, then a call to *select*(1, $v1$, $v2$) should return 5, a call to *select*(2, $v1$, $v2$) should also return 5, and a call to *select*(3, $v1$, $v2$) should return 7.

Precondition

The vectors $v1$ and $v2$ are sorted in nondecreasing order. The index k is correct, that is, it is between 1 and $v1.size() + v2.size()$. Therefore, at least one of the vectors is not empty.

Observation

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

Problem information

Author: Salvador Roura

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