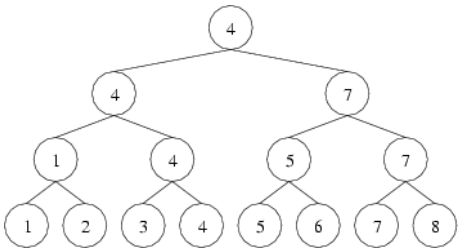
Tennis tournament P73160_en

Consider a tennis tournament with m participants with names $x_1, x_2, \ldots, x_m$, where m is a power of two. In the first round x_1 plays against x_2, x_3 plays against x_4, ..., and x_{m-1} plays against x_m. The players that lose are eliminated, and the process is repeated with the remaining players. When only a player remains, this is the winner of the tournament.

For instance, let $m = 8$, and suppose that in the first round x_1 defeats x_2, x_3 loses against x_4, x_5 defeats x_6, and x_7 defeats x_8. In the second round x_1 plays against x_4 (suppose that x_4 wins), and x_5 plays against x_7 (suppose that x_7 wins). In the third and last round x_4 plays against x_7. Assuming that x_4 wins, this is the champion. The following figure shows the championship just described:



Write a procedure that, given the names of the players and the table of results, returns the name of the winner of the tournament:

string winner(**const** *vector*<*string*>& *name*, **const** *vector*<**bool**>& *win*);

The vector @name@ has size m, where m is any power of 2. For each @j@ between 0 and $m-1$, we have @name[j]@ $= x_{j+1}$. All the names are different.

For instance, this could be the table of names of the tournament previously described:

0	1	2	3	4	5	6	7
Edberg	Lendl	Wilander	Borg	Agassi	Becker	McEnroe	Connors

The vector @win@ has size $m - 1$ and contains all the results of the matches: the first round is stored in the last $m/2$ positions, the second round is stored in the $m/4$ previous positions, the third round is stored in the $m/8$ previous positions, ..., and the result of the last round (the final) is stored in @win[0]@. The boolean of each position indicates if the first player (the one with the smallest index) has won against the second one.

This would be the table of results of the tournament previously described:

0	1	2	3	4	5	6
true	false	false	true	false	true	true
final	second round		first round			

For the example tournament, the answer should be "`Borg`".

Observation

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

Problem information

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