Idea

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A state consists of two integers, *must* and *may*. *must* signifies the number of values that **must** be present at this event, and *may* signifies the number of values that **may** be present.

A final state of monitoring consists of one state per event. Namely, $s_{!c}$, $s_{!r}$, $s_{?c}$, $s_{?r}$

Denote the minimum integer appearing in $s_{!c}$ and $s_{!r}$ by $min_!$. similarly for max, and for ?. e.g.

a: [0,1][1,1][0,1][0,0] says that when push(a) is called, there are between 0 and 1 elements in the stack, and when it returns there is exactly 1 element in the stack. Similarly for pop.

We say a value is compatible with a number n if $n \in [min^a_!, max^a_!] \cap [min^a_?, max^a_?]$.

A chain c_n is a sequence of integers, with $c_0 = 0$, such that each pair of consecutive numbers has a difference of at most 1.

A history is linearizable iff there is sequence $(c_0, v_0), \ldots, (c_n, v_n)$, equal in size to the history, such that $c_0, \ldots, c_n$ form a chain, and each v_i is compatible with c_i.