

Array



same type of value,
same size

If I know where $a[0]$ is,

$a[k]$ is k "units" away

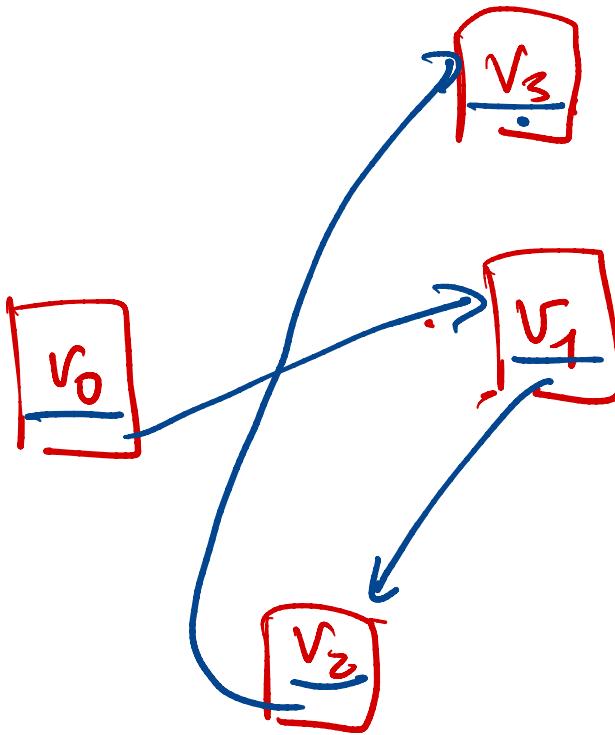
Size = n

"Random Access"

List

Sequence of values
"distributed" across
memory

Sequential access
- to reach v_k
takes time
proportional to k

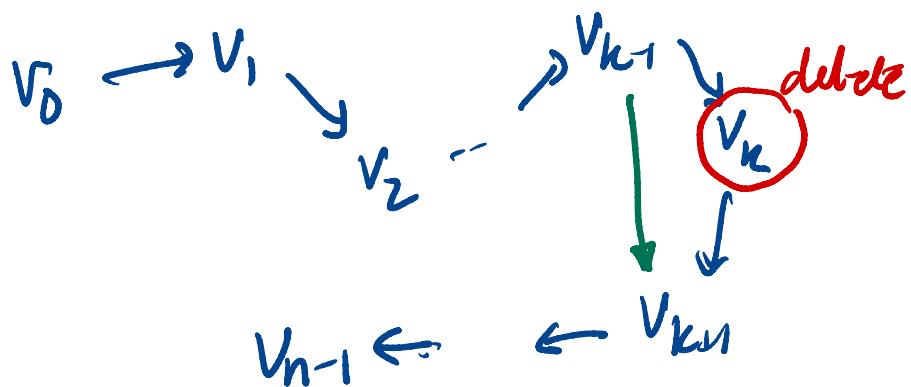


Arrays vs list

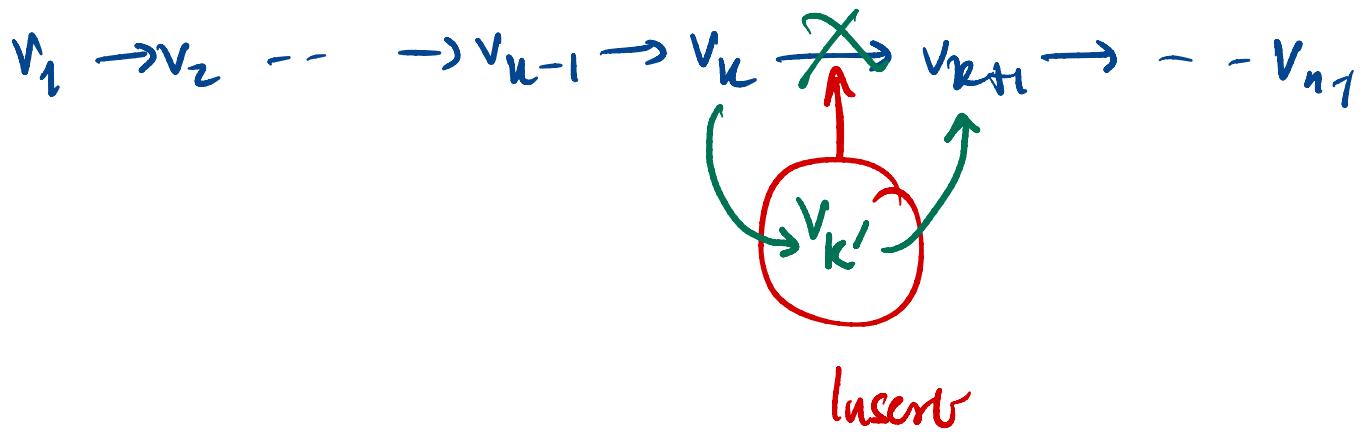
- Update $a[k]$ - uniform time in array, prop to k in list
or
look up

- Insert or delete
 $a[k]$

Array - shift all values right/left by 1



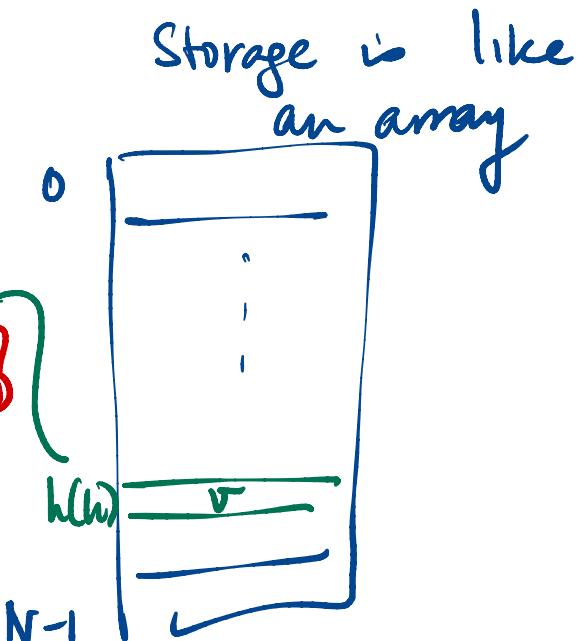
Insert in a list



Dictionaries

key $k \rightarrow h(k) \rightarrow \{0, 1, \dots, N-1\}$

hash
function



Collisions

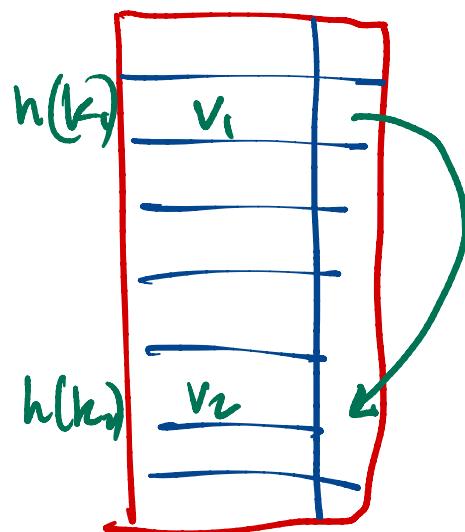
$$h(k_1) = h(k_2)$$

~~Python stores keys in order of creation~~

lists

$k_1 \rightarrow v_1$

$k_2 \rightarrow v_2$



What are Python lists?

Next time