CSC148 Worksheet 11 Solution

Hyungmo Gu

April 22, 2020

Question 1

a. Here, the constant time means the running time of accessing and assigning element by index doesn't depend on the length of the list.

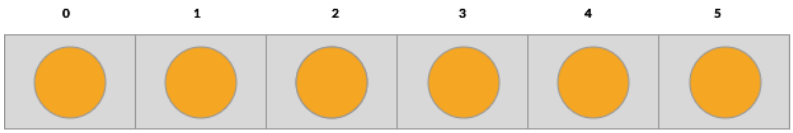
b.

$$n - i$$

many elements need to be shifted to right.

Notes:

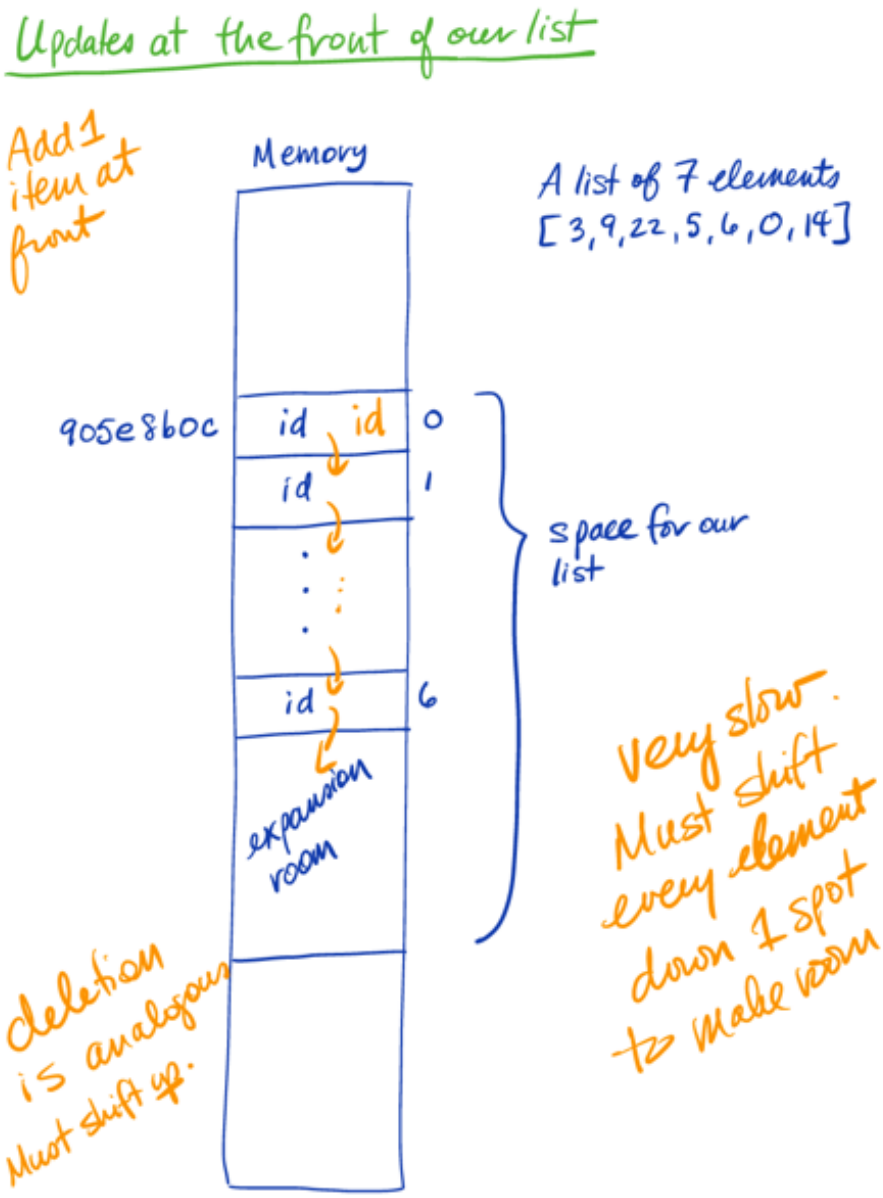
- The following example tells us



  to position an element at index $i = 3$ of the list, $n - i = 6 - 3 = 3$ elements must be moved over.

  Using this fact, we can generalize that to position an element at index i of the list, $n - i$ many elements must be shifted.

- Learned that when items shifts, it shifts into the expansion room.



c. Because we know the list size stays as is when an element is removed, we can conclude 0 many list elements must be moved.

Question 2