

CSC 226 Additional written questions:

1. What is the ZO sequence produced from the tree on page 396 if we look at it in a vertical mirror (i.e., flip it over on the page)?

1,1,0,0,1,1,0,1,0,0,1,1,0,0,0

2. In the code for build given in ZOrep, as a function of ,

(a) how many times is k incremented?

$2N$ times of k incrementing

(b) how many times is build() called in total?

$2N + 1$ times of build() called in total

3. What is the FL sequence for the "ordered" forest for the two tree forest shown at the bottom of page 225?

3,2,1,1,1,0,2,1,1,0

4. Exercise 1.5.8 in the book, except, instead of giving a counter-example, give a one sentence explanation of what can go wrong.

Based on the piece of code, `id[q]` assign its value to `id[p]` within for-loop. As a consequence, any others value's id which are greater than `p` cannot be changed into `q`'s id.

5. Exercise 1.5.9 from the book.

0 --- 1	2	8	4	5
3 --- 6	7		9	

For weighted quick-union find, the union size will always be 1. However, for this question, there are more than 1 elements that have the same id, that is to say, the union size will not be 1.