

Exercise 2.5.1

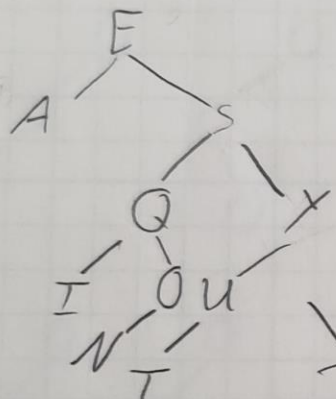
The third line finds what is shorter between "this" & "that". This means that the most iterations that the for loop can run is the length of the shorter variable. If "this.length" was set to n it could be shorter in length than that but `that.length()` could also be bigger so there would need to be a check to avoid an array out of bounds exception. Using the `min` function allows the code to not have to do a conditional check each time.

QuickSelect vs QuickSort

QuickSort divides the array into two arrays to be sorted. QuickSelect behaves in a similar fashion but keeps dividing down.

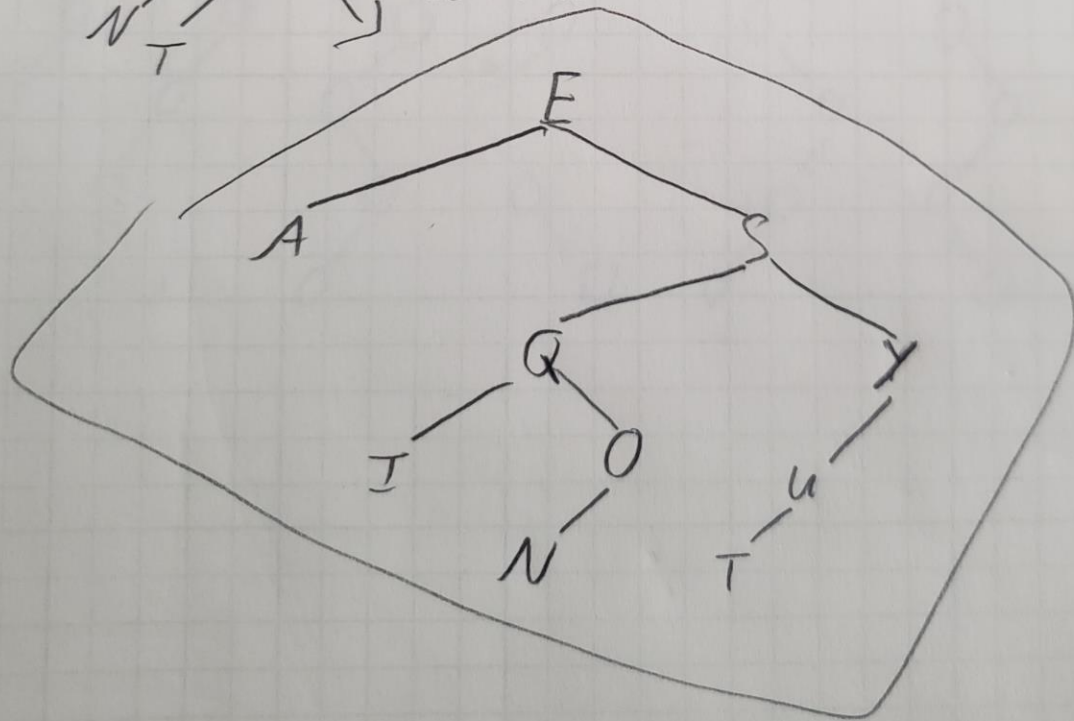
Exercise 3.2.1

EASY QUESTION
5 1 19 25 17 21 5 19 20 9 15 14



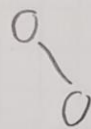
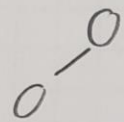
11 comparisons

Redraw

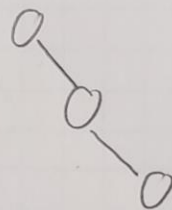
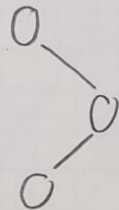
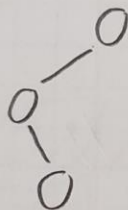
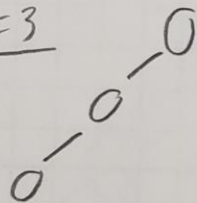


3.2.9

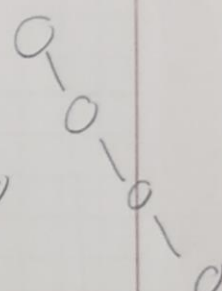
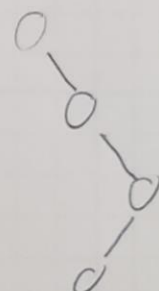
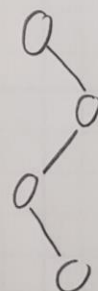
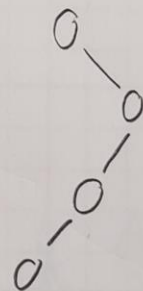
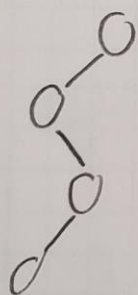
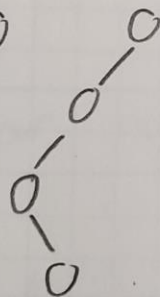
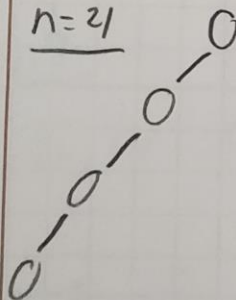
$n=2$



$n=3$



$n=4$



3.3.1

E 5 A 1 S 19 Y 25 Q 17 U 21 T 20 I 9 O 15 N 14

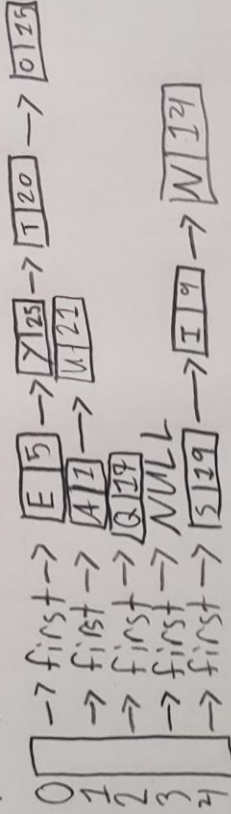


3.3.9

i, ii, iv are red-black BSTs

3.2.1
k: E 5 A 1 S 19 Y 25 Q 17 U 21 T 20 I 9 O 15 N 14

m = 5



E: 11.5%5 = 0
 A: 11.1%5 = 1
 S: 11.19%5 = 24
 Y: 11.25%5 = 0
 Q: 11.17%5 = 21
 U: 11.21%5 = 1
 T: 11.20%5 = 0
 I: 11.9%5 = 4
 O: 11.15%5 = 3
 N: 11.14%5 = 4