

Whiteboard 7

WHITEBOARD 7

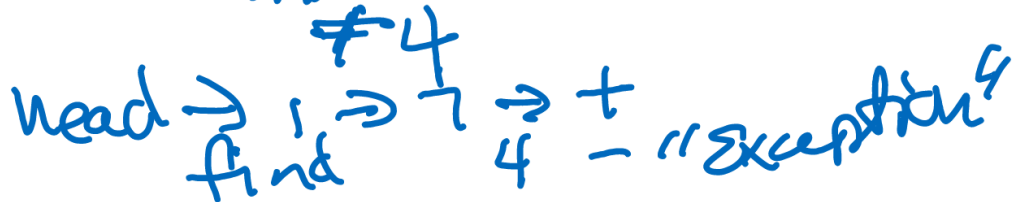
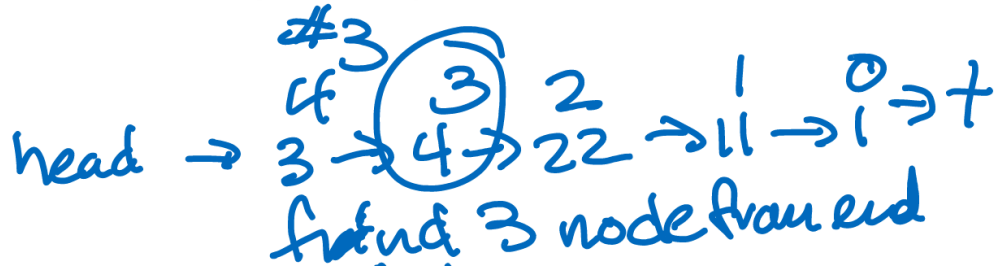
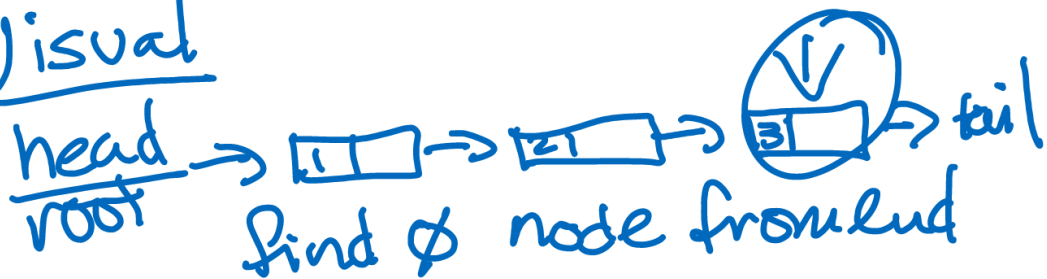
KTH ELEMENT

Problem Domain

write method that takes "K"
parameter and finds that node
as from the end/tail.

All previously written methods
- linked lists, listNode, etc.

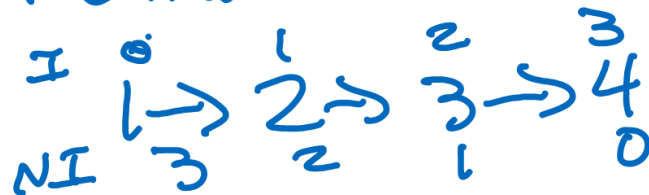
Visual



Algorithms

- reverse find length (#nodes) of LL

- Reverse LL backwards



- find k element return value or exception

count
-1
+1

Pseudocode

size fix to find length
loop through size# to find k
while (newindex = size - k + 1 ! 0)
newindex ← newindex - 1

as it's new index = k
return this.data
↑
toString

if new?
if new index < k
→ return Exception
last

<u>Big O(N) time</u>	<u>O(1) space</u>
2 loops but not nested	2 variables but just int

Code
public class KthElement {

{
public static findK(int k) {
int index = (int) new LL().size() - k + 1
LL current = new LL();
while (index != k) {
current = current.next

{
if (index == k) {
return current.data;
}
if (index == null) {
return new Exception();
}

}