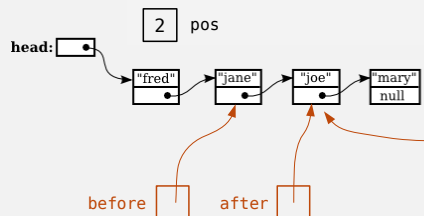


In Class 3/5

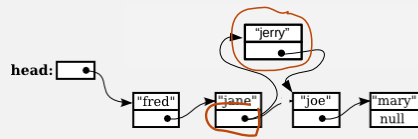


when drawing pictures, explicitly show boxes for all of the values – for parameters (or variables) like head, and for both of the instance variables (elt_ and next_) in the list nodes

draw the values inside the box – so arrows should originate from inside the next_ box

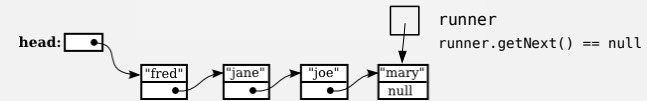
you can then clearly identify what is different in the after picture – circle those boxes whose values are different

add variables for "convenient fingers" – whether pointers or array indexes – that make it easy to make the changes



draw an after picture and explicitly circle those boxes whose values change and new things that are part of the after drawing, including variables for values being computed

In Class 3/5



- be careful of off-by-one loop issues

```
for ( ListNode runner = head ; runner.getNext() != null ;  
      runner = runner.getNext() ) {  
    System.out.println(runner.getElt());  
}
```

stops when runner points to the last node – so the last node's element is never printed

runner != null to include the last node in the repetition

In Class 3/5

- don't forget to consider preconditions and special cases
 - for parameters – is any value of that type OK?
 - for any object parameter, what about null?
- insertAtIndex should return the new head (void return type is an error)