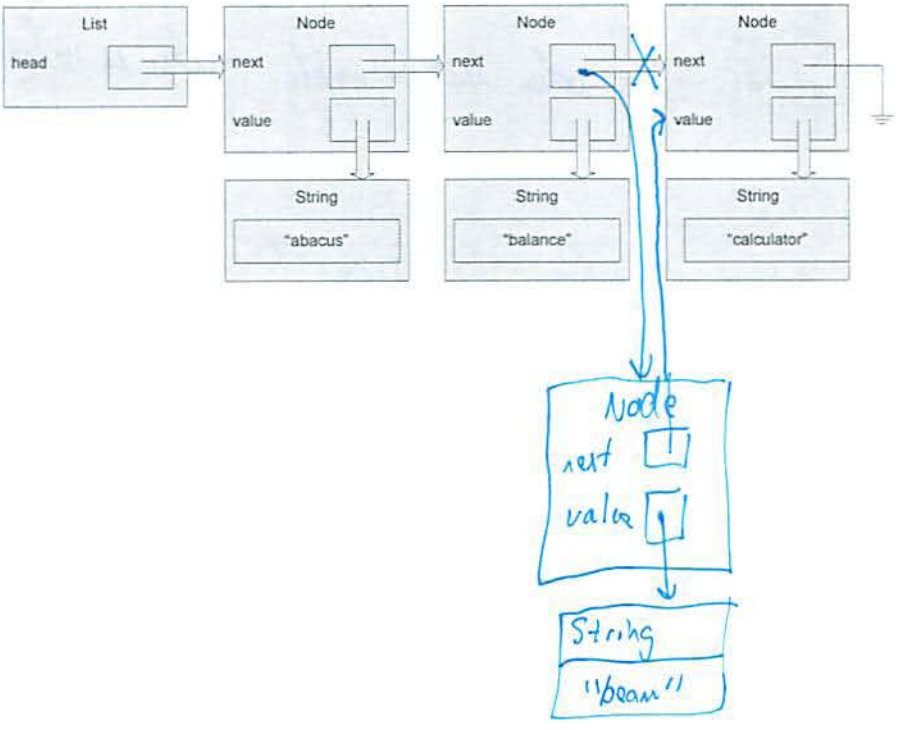
Name Answers

CS-2852 – Dr. Durant – Quiz 3
Spring 2014, Week 3

1. (3 points) Illustrate on the following diagram how the list will be structured after adding a "beam" string between "balance" and "calculator."



2. (4 points) List the steps your code would take, in the correct order, to add a node after a given node in a list such as the one above. Assume that you've already found the node to add after ("balance" in the example above) and that it is not at the end of the list.

① create new node w/ new content
and next = nodeToAddAfter.next

② nodeToAddAfter.next = theNewNode;

Note: This question avoids the need to deal w/ adding @ head by specifying you are given node to add after. Head would be handled by checking for null.

Note: Since the previous node is given, it is inefficient to (re-) walk the list in your answer.

3. (3 points) When implementing add(int, E), that is, adding a node at a given position (which increases the list size by 1 if successful), list at least 3 additional, distinct cases that you must ensure work correctly:

a. User gives negative position → throw an IndexOutOfBoundsException – (you don't need to specify the outcome for your cases)

b. add(0, _) when list is empty - this is valid

c. add(N, _) where N = size (end of list)

d. add(N-1, _) " " (1 before end)

* add(N, _) where N > size (throw error)

* add(N, _) where 0 < N < size-1 (valid, neither end)