Please prepare a Progress Report for your homework one in a PDF file format. The content of the Progress Report should be:

The logic ideas of the methods that you are required to implement with detailed steps and explanations. You can use java-like description or pseudo-code to present the logic idea of each method. It is more desirable to use diagrams to explain the logic ideas.

For example, Logic Idea for addFirst(Object item) method in the linked list class,

Step 1), make a new node NN and store the Object item into the new node NN's data field.

Step 2) NN's next reference points to the node referenced by head.next.

Step 3) Then assign NN to the next reference in the dummy head node.

Step 4) increase size of this list by one.

1. public Object removeFirst() throws Exception

Step 1: Create a ListNode type object named cur, and assign head.next to cur. Cur now refers to head.next.

Step 2: Create a for loop that depends on this.size NOT being 0, because if the list size is 0, we can't do anything. Minimum is 1, and we can assume no list with negative size will be passed in.

Step 3: Assign cur.next to head.next. This essentially bypasses the first node, as expected.

Step 4: If the array is empty, an exception is thrown.

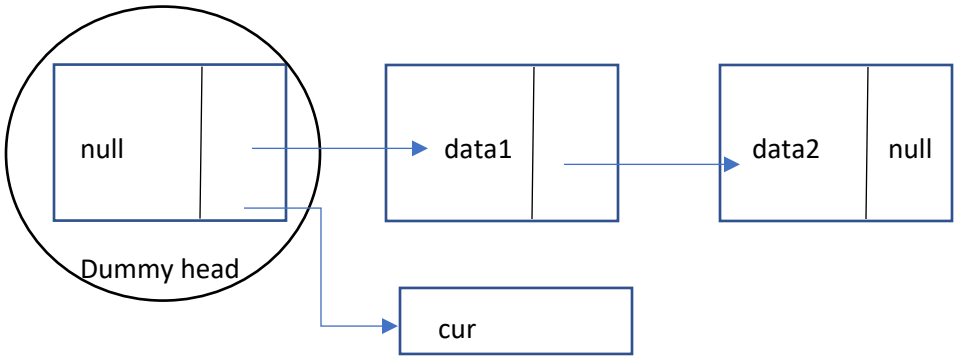

Figure 1 Non-empty singly linked list with dummy head implemented. Variable cur of type ListNode gets head.next.

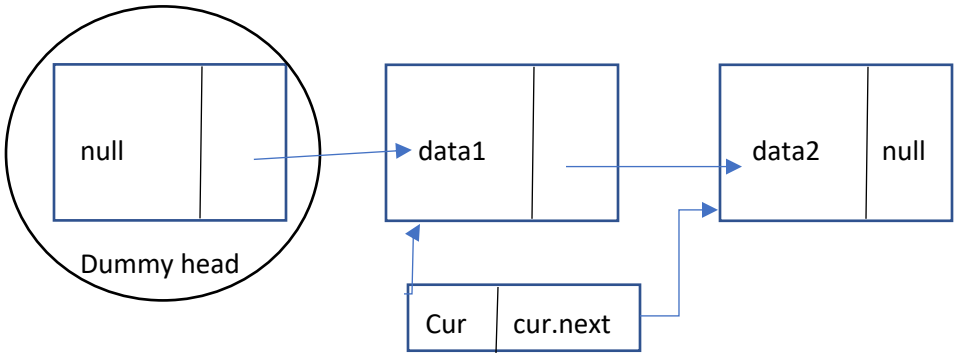

Figure 2 Variable cur "moves up" in the linked list by the loop.

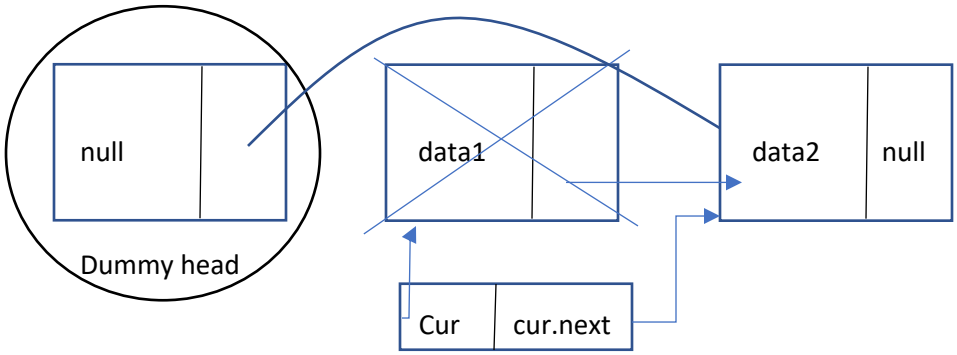

Figure 3 cur.next is then assigned to head.next, making cur's node (second node) the first node