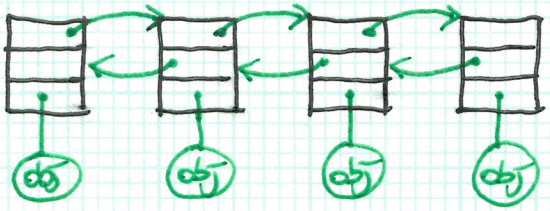
*SENG2200 - Data Structures Revision & Homework.

Pt1/ Create the following 3 structures in Java

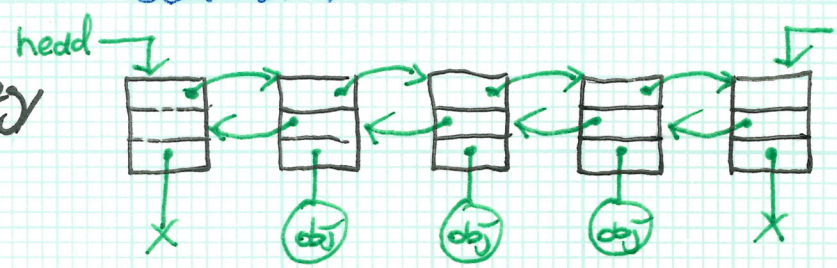
a) Doubly-Linked List - Just an ordinary Doubly Linked List; the 'payload' (or data) can be whatever you like, int, Object, etc.... This is more about the structure than the content

eg/



b) Doubly-Linked List w/ Sentinels - much the same as previous, just now with a ~~first~~ head & tail sentinel node

eg/



*Remember, the Sentinels have no payload

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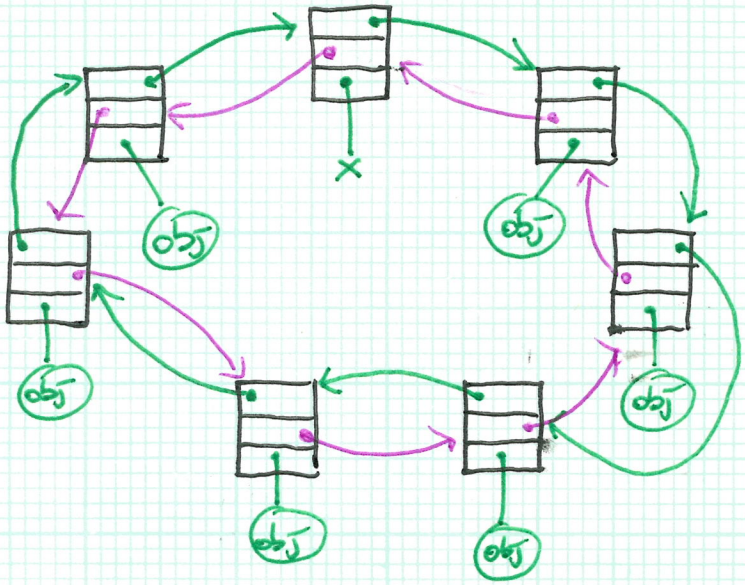
c) Circular Doubly-Linked List w/ Sentinal - a more interesting structure...



* While this ↑ looks scarey, its nothing more than a Doubly-Linked List, whos head & tail simply point to the same sentinel node

* hints & tips

↳ Remember to properly initialize these, esp. in the case of sentinels.

↳ Write your node class right, & it will work for all three examples...

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↳ example Node UML:

Node
- Node prev - Node next - Object data
+ Node() + Node getPrev() + Node getNext() + setNext(Object) + setPrev(Object)

*just using the type 'Object' because its easy for this example.

↳ And then you'll just need to write the List classes that use the Node; like

DLList
- Node head - Node tail - Node current ⋮ + boolean isEmpty()

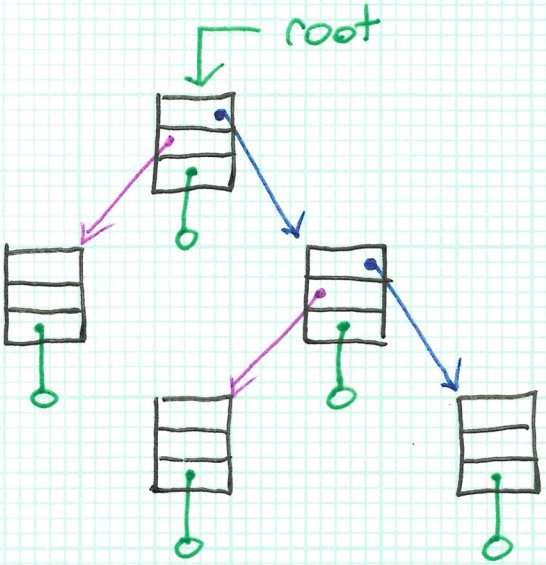
*I'll leave some of this for you to figure out

CDLList
- Node sentinel - Node current ⋮ + boolean isEmpty()

Continued →

*Stuff to think about:

↳ What About a TREE?



↳ using different structures to implement things like
- → A ~~stack~~ STACK
- → A QUEUE
- → etc

* This ~~this~~ will be useful when you get to Interfaces.

HAPPY CODING =)