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Design

My sketch for this on paper, and even my pseudo code made this look fairly simple, however, I didn't understand that the assignment had called for creating and using nodes to edit the values. I neglected to add the node logic as I wrote it up, and just used a regular linkedlist. I created a node class, and a class that acted as a toolset for modifying the contents of the linkedlist node classes. There were only slight alterations in my existing code to accommodate to these new changes. The steps that really took the longest were the replacing and adding into any position in the array, and the input validation.

Testing

Testing while coding was fairly straightforward, mash a number and make sure it completes without errors. However, as I began testing, I found the need to use input validation to prevent the user from inserting undesired values. I also came across a problem when the user tries to insert into a node space that does not exist yet, getting a nullpointerexception. I think after testing I solved around 10 bugs with my program, but I still have a few things to fix up.

Test cases for initial add/delete

Compile and run	No errors, compiles properly and runs through until it needs user input
Valid Number, Valid Position	Inserts the proper number into the proper position and pushes previous value back in the linkedlist
Invalid Number, Valid Position	Sets Number to zero, but you are still able to set position, 0 will appear in chosen location
Valid Number, Invalid position	Allows your Number, position will be at location 0 though
Invalid Number, Invalid Position	Sets both values to zero, and uploads to the very beginning of the array

Test cases for insert at position:

Compile and run	No errors, compiles properly and runs through until it needs user input
Valid Number, Valid Position	Inserts the proper number into the proper position and pushes previous value back in the linkedlist
Invalid Number, Valid Position	Re prompts until you give an appropriate number
Valid Number, Invalid position	Reprompts until you give an appropriate location ** bug: inputting a number larger than the linkedlist size will cause a null pointer exception
Invalid Number, Invalid Position	Reprompts for values until you give the appropriate values

Reflection

Initially I was unsure if we should be using the node system we had set up in class, or if we should try some other approach (like declaring a normal linkedlist)

One constant problem I encountered during my coding for this is how the node had worked, I didn't quite understand what was happening in a lot of the functions I had written without plenty of trail and error testing. Now, I have written up some code that I believe that I can just use this assignment as a template for future assignments, and focus more on the logic of that issue instead of the logic and construction of a linkedlist.