

## Maintenance/Change Request

### Description:

Update the program used to store sorted integer values from a Linked List to a Stack data structure.

### Requirements:

1. The customer would like the data structure used to store sorted integer values to be a Stack instead of a Linked List
2. The customer would like the program to reuse as much existing software as possible, notably taking advantage of the Java Collections Framework.
3. The customer would like to see only the required edits necessary to meet the above objectives without adding additional functionality.

### Code Analysis:

This program can be updated easily by taking advantage of the existing code and swapping out features for the linked list and replacing them with features of a stack. The existing SortedLinkedList class can be renamed and the attribute can be updated to use a Stack from the Java Collections Framework instead of a Linked list. Existing methods will only need small modifications to address the new variable name for the stack attribute, but the overall purpose and functionality of those methods remains largely unchanged. The main.java file requires only a few small modifications, as variables for demoType and myList can be replaced to reflect the change to a SortedStack instead of the SortedLinkedList, with the main loop being largely unchanged outside of variable name adjustments and comments. Overall, the existing code structure allows us to largely re-use the current code, including relevant methods, as they have the same overall objective within the program. Swapping out references to the Java Collections Framework LinkedList class for the Stack class allows us to re-use that existing code while plugging the new data structure into our program seamlessly.

### Required Updates:

#### SortedLinkedList.java:

- Rename class and constructor method
- Import Stack in place of LinkedList
- Update attribute linkedList to stack, use Stack class for type
- Update references to attribute to reflect name change
- Update comments/docs

#### Main.java

- Update demoType variable to reflect change to a Sorted Stack
  - This variable is used to easily adjust text in the main loop of the program to reflect the data structure used.
- Rename myList variable to myStructure, set it as a new instance of the SortedStack class
- Update variable references to use myStructure

- Update comments/docs