D.S.A. Lab #3 Assignment

Extend you application by adding the following functionalities:
1. Add an option in the principal menu for lab #3.
2. Add a submenu with the following options:
   a) Mergesort
   b) Singly linked list
   c) Doubly linked list

"Mergesort" – implement Mergesort algorithm, generate a 20 random items vector, output the generated vector, sort the items using Mergesort and output the sorted vector.

"Singly linked list" – implement a singly linked container data structure, insert 10 items at the beginning of the list, insert 10 items at the back of the list, output each item before it is inserted in the list, remove 1 item from the list. Print all items contained in the list.

"Doubly linked list" – implement a doubly linked container data structure, insert 10 items at the beginning of the list, insert 10 items at the back of the list, output each item before it is inserted in the list, remove 1 item from the list. Print all items contained in the list.