

Tasks

Question 1

Write a C++ program that do the following;

1. Create a templated Struct node with following data members;
 - a. Node *next;
 - b. T dataItem;
2. Create a class SingleList with following data members;
 - a. Node *head (Public Data Member) ;
 - b. Node *tail;
 - c. Node *current;
3. Implement the following functions in class SingleList (Proper Constructor and destructor are must);
 - a. Void InsertFirst(T dataItem);
 - b. Void InsertLast(T dataItem);
 - c. Int Search(T DT); // returns the index of the data item;
 - d. Void removeFirst(); // removes the first data item of the list;
 - e. Void removeLast(); // removes the last data item from the list;
 - f. Void displayList();
 - g. Int size(); // returns the size of the list;
 - h. T CurrentDataItem(); // returns the data item currently pointed by the current pointer;
 - i. Void remove(T DT); // if the item is in the list; then remove it.
 - j. T NextDataItem(); // returns the data item next to the current pointer
 - k. Void Clear(); // remove all the data items from the list;
 - l. Void Ascendsort(); // sorts the list in ascending order;