Data Structure Lab, Final Term Assignment

Learning Phase:

Search in web for generics/templates in C++. Analyze what is generics and what's the purpose of using generics. Now write a generic function for adding two different types of variables.

e.g. : variable Add(variable a, variable b) [Here variable could be of any data type]

If you are done with the learning phase, then do the following.

Create your own **STL** library as ***mySTL.h***

Your assignment is to create a ***mySTL.h*** *header file in C++ that will contain these* ***templated classes and methods****.*

1. SingleLinkedList class a. *insertAtLast* b. *insertAtFirst* c. *insertAtAnyPos* d. *insertBeforeElement* e. *deleteElementByValue* f. *deleteAtPos* g. *displayList* 2. DoubleLinkedList class a. *insertAtLast* b. *insertAtFirst* c. *insertAtAnyPos* d. *insertBeforeElement* e. *deleteElement* f. *deletePos* g. *displayList* 3. Stack class (use linked list instead of array) a. *push* b. *pop* c. *top*	4. Queue class (use linked list instead of array) a. *enqueue* b. *dequeue* c. *front* d. *rear* 5. BST class a. *insertIntoBST* b. *searchInBST* c. *displayInorder* d. *displayPreorder* e. *displayPostorder*

Finally demonstrate the use of your mySTL library in a demo.cpp file.

You must submit two cpp files ***1. mySTL.cpp*** and ***2. demo.cpp***

Submission: Zip all files and rename the file as **your_id.zip.** e.g: xx-xxxxx-x.zip in portal.aiub.edu