

American International University-Bangladesh

Data Structure Lab

Final Term Assignment

Fall 2022-23

Total marks: 20

Deadline: 26-12-22

“Copy and pasting code without understanding is like chewing a gum that is already chewed by someone else”

Create your own Standard Template Library (STL) 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) insertAtFirst
 - b) insertAtLast
 - c) insertAtAnyPos
 - d) insertBeforeElement
 - e) deleteElementByValue
 - f) deleteAtPos
 - g) displayList
2. DoubleLinkedList class
 - a) insertAtFirst
 - b) insertAtLast
 - 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 test.cpp file. You must submit a **zip file** containing **mySTL.h** and **test.cpp** file on **portal** within the mentioned deadline.