United International **University**

Department of **C**omputer **S**cience and **E**ngineering

CSE 2216 (H): Data Structures and Algorithms I Laboratory

Trimester: Summer 2023

Class Performance 2, Total Marks: **20**, Total Time: **40 minutes**

Any examinee found adopting unfair means will be expelled from the trimester/program as per UIU disciplinary rules.

Write a program in C++ for the following scenario. You are instructed to read the question carefully. You are not allowed to use any data structure except **stack** for this problem.

You are writing a program for DocumentBuilder. DocumentBuilder must have the following functionalities:

- **initDocument():** This function initializes the document and returns the document.
- **insertText(stack< char > &document, char c):** This function adds the given character to the end of the document.
- **undo(stack< char > &document, int count):** The function deletes *count* characters from the end of the document.
- **showDocument(stack< char > &document):** This function shows the current state of the document.

You are given the main function of the program.

```
#include<iostream>
#include<stack>
using namespace std;
int main()
{
    stack< char > document = initDocument();
    insertText(document, 'u');
    insertText(document, 'n');
    insertText(document, 'i');
    insertText(document, 't');
    showDocument(document); // Output: unit
    undo(document, 2);
    showDocument(document); // Output: un
    insertText(document, 'b');
    showDocument(document); // Output: unb
    return 0;
}
```