



# Sukkur IBA University Kandhkot Campus

## Lab Task - VII Fall 2022

**Course:** Data Structures

**Date:** October 19, 2022

**Instructor:** Syed Muzamil Hussain Shah

**Class:** BS (CS) - III

**Time:** 2 hour

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### General Instructions:

You will implement stack using static arrays and generics from the scratch with some basic functionalities. if you could not complete this task in the lab then take it as a HW.

### Question 01 Static Arrays, Generics, Stack Code

Create a Generic Stack class and add the following:

1. Add a private Node class with data variable( Generic type), and a 1 argumentative constructor.
2. Define top and length global variables of integer type in the Stack class.
3. Define an array of Node class objects with defined length.
4. Add constructor in Stack class initialize .
5. Add push(AnyType data) method.
6. Add pop() method that returns data of AnyType.
7. Add display() method
8. Add peek() method
9. Add Main() method
10. Add getSize() method that total number of nodes.
11. Add a clear() method that deletes all nodes of the Stack.
12. Add isEmpty() method that returns true if there node in the Stack and false if there is at least one node.
13. Add mergeStacks(Stacks s1, Stack s2) method that merges two queues and returns new queue.
14. Add contains(AnyType data) method that returns true if node is in stack else false