



ACADEMY OF TECHNOLOGY

Lab Assignment 3

Paper name: Data Structure and Algorithm

Code: PCC-CS391

Discipline: CSE

Semester: 3rd

Time: 2 Hours

Date: July 27, 2022

1. Write a menu driven program in C/C++ to implement a stack using array and perform the following operations.
 - (a) *isFull()* function to check whether the stack is full or not.
 - (b) *isEmpty()* function to check whether the stack is empty or not.
 - (c) *peek()* function to read the stack top element without deleting it.
 - (d) *push(item)* function to insert an element *item* in the stack.
 - (e) *pop()* function to read and remove an element from the stack.
 - (f) *display()* function to display the entire stack.
 2. Write a menu driven program in C or C++ to implement a *Queue* using array and perform the following operations.
 - (a) *isFull()* function to check whether the *Queue* is full or not.
 - (b) *isEmpty()* function to check whether the *Queue* is empty or not.
 - (c) *insert(item)* function to insert an element *item* in the *Queue*.
 - (d) *delete()* function to read and remove an element from the *Queue*.
 - (e) *display()* function to display the entire *Queue*.
 3. Write a menu driven program in C or C++ to implement a *Circular Queue* using array and perform the following operations.
 - (a) *isFull()* function to check whether the *Circular Queue* is full or not.
 - (b) *isEmpty()* function to check whether the *Circular Queue* is empty or not.
 - (c) *insert(item)* function to insert an element *item* in the *Circular Queue*.
 - (d) *delete()* function to read and remove an element from the *Circular Queue*.
 - (e) *display()* function to display the entire *Circular Queue*.
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