**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,**
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**Department of Computer Engineering**

**B.Tech. Second Year A.Y.-2022-2023**
**Semester: - III (ODD) Subject: - Data Structures Laboratory**
**Subject Code: - BTCOL306**
**Subject Co-ordinator: - Prof. Mr. Sanil Gandhi**
**Laboratory Name:- B3**

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## List of Experiments:

1. Write a program to implement stack using arrays.
2. Write a program to evaluate a given postfix expression using stacks.
3. Write a program to convert a given infix expression to postfix form using stacks.
4. Write a program to implement circular queue using arrays.
5. Write a program to implement double ended queue (dequeue) using arrays.
6. Write a program to implement a stack using two queues such that the push operation runs in constant time and the pop operation runs in linear time.
7. Write a program to implement a stack using two queues such that the push operation runs in linear time and the pop operation runs in constant time.
8. Write a program to implement a queue using two stacks such that dequeue operation runs in constant time and dequeue operation runs in linear time.
9. Write programs to implement the following data structures:
   (a) Single linked list (b) Double linked list.
10. Write a program to implement a stack using a linked list such that the push and pop operations of stack still take O (1)time.
11. Write a program to create a binary search tree (BST) by considering the keys in given order and perform the following operations on it.
   (a) Minimum key (b) Maximum key (c) Search for a given key (d) Find predecessor of a node (e) Find successor of a node (f) delete a node with given key.
12. Write a program to construct an AVL tree for the given set of keys. Also write function for deleting a key from the given AVLtree.
13. Write a program to implement hashing with
   (a) Separate Chaining and (b) Open addressing methods.
14. Implement the following sorting algorithms:
   (a) Insertion sort (b) Merge sort (c) Quick sort (d) Heap sort.
15. Write programs for implementation of graph traversals by applying:
   (a) BFS (b) DFS.