

**UNIVERSITY OF MADRAS**  
**B.Sc. DEGREE COURSE IN COMPUTER SCIENCE**  
**SYLLABUS WITH EFFECT FROM 2020-2021**

**BCE-CSC06**

**CORE-VI: PRACTICAL-III**  
**DATA STRUCTURES USING JAVA LAB**  
(Common paper to B.Sc. Software Applications)

**II YEAR / III SEM**

**OBJECTIVES:**

- To implement linear and non-linear data structures
- To understand the different operations of search trees
- To implement graph traversal algorithms

**OUTCOMES:**

- Write functions to implement linear and non-linear data structure operations.
- Suggest appropriate linear and non-linear data structure operations for solving a given problem.

**LIST OF EXERCISES:**

1. Write a Java program to implement the Stack ADT using a singly linked list.
2. Write a Java program to implement the Queue ADT using a singly linked list.
3. Write a Java program for the implementation of circular Queue.
4. Write a Java program that reads an infix expression, converts into postfix form
5. Write a Java program to evaluate the postfix expression (use stack ADT).
6. Write a Java program to an Insert an element into a binary search tree.
7. Write a Java program to delete an element from a binary search tree.
8. Write a Java program to search for a key element in a binary search tree.
9. Write a Java program for the implementation of BFS for a given graph.
10. Write a Java program for the implementation of DFS for a given graph.