

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

BCE-CSC06

PRACTICAL: DATA STRUCTURES USING JAVA LAB

(Common paper to B.Sc. Software Applications,
B.Sc. Computer Science with Data Science and Computer Science with AI)

I/II YEAR
II/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 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.