

RUSTAMJI INSTITUTE OF TECHNOLOGY

BSF ACADEMY, TEKANPUR

Practical File for CS303 (Data Structure)



Submitted by

Name of Student (Enrolment No.)

B.Tech. Computer Science & Engineering 3rd Semester
(2023-2027 batch)

Subject Teacher
Dr. Jagdish Makhijani

File Checked by
Mr. Yashwant Pathak



Self-Declaration Certificate

I, **[Student's Name]**, hereby declare that I have completed the lab work of CS303 (Data Structure) at my own effort and understanding.

I affirm that the work submitted is my own, and I take full responsibility for its authenticity and originality.

Date:

[Student's Signature]

[Student's Name]

[Enrolment No.]

ENVORIONMENT USED

Hardware Configuration : <hardware configuration of machine>
C Compiler : GCC Compiler
User Interface : <name of user interface used>

GROUP MEMBERS

Member-1 : Name & Enrolment No.
GitHub Repository URL
Member-2 : Name & Enrolment No.
GitHub Repository URL
Member-3 : Name & Enrolment No.
GitHub Repository URL
Member-4 : Name & Enrolment No.
GitHub Repository URL

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Section-A (Linked List)

S. No.	Practical Description	Page Nos.	COs
1	Implementation of Linked List using array.		CO-1
2	Implementation of Linked List using Pointers.		CO-1
3	Implementation of Doubly Linked List using Pointers.		CO-1
4	Implementation of Circular Single Linked List using Pointers.		CO-1
5	Implementation of Circular Doubly Linked List using Pointers.		CO-1

Section-B (Stack)

S. No.	Practical Description	Page Nos.	COs
1	Implementation of Stack using Array.		CO-2
2	Implementation of Stack using Pointers.		CO-2
3	Program for Tower of Hanoi using recursion.		CO-2
4	Program to find out factorial of given number using recursion. Also show the various states of stack using in this program.		CO-2

Section-C (Queue)

S. No.	Practical Description	Page Nos.	COs
1	Implementation of Queue using Array.		CO-2
2	Implementation of Queue using Pointers.		CO-2
3	Implementation of Circular Queue using Array.		CO-2

Section-D (Trees & Graphs)

S. No.	Practical Description	Page Nos.	COs
1	Implementation of Binary Search Tree.		CO-3
2	Conversion of BST PreOrder/PostOrder/InOrder.		CO-3
3	Implementation of Kruskal Algorithm		CO-4
4	Implementation of Prim Algorithm		CO-4
5	Implementation of Dijkstra Algorithm		CO-4

Section-E (Sorting & Searching)

S. No.	Practical Description	Page Nos.	COs
1	Implementation of Sorting a. Bubble b. Selection c. Insertion d. Quick e. Merge		CO-5
2	Implementation of Binary Search on a list of numbers stored in an Array		CO-5
3	Implementation of Binary Search on a list of strings stored in an Array		CO-5
4	Implementation of Linear Search on a list of strings stored in an Array OR Implementation of Binary Search on a list of strings stored in a Single Linked List		CO-5

Experiment No.: 1

Program Description:

Implementation of Linked List using array.

Solution:

Output: