Dedicated Faculty, Committed Education
Darshan
Institute of Engineering & Technology

Department of Computer Engineering

Academic Year 2021-22 | Semester-III

Lab Program List

3130702 – Data Structure | Division – CX/CY/CZ

Prof. Vijay M Shekhat

Lab	Practical
1	1. Write a program to find factorial of a number. (Using Loop) 2. Write a program to find factorial of a number. (Using Recursion) 3. Write a program to check whether a number is prime or not.
2	4. Read n numbers in an array then read two different numbers, replace 1st number with 2nd number in an array and print its index and final array. 5. Read n numbers in an array and print it using pointer. 6. Read two 2x2 matrices and perform addition of matrices into third matrix and print it. 7. Read two matrices, first 3x2 and second 2x3, perform multiplication operation and store result in third matrix and print it.
3	8. Write a C program to swap two numbers using user define function. (Use concept of Call by Value) 9. Write a C program to swap two numbers using user define function. (Use concept of Call by Reference) 10. Create structure Employee_Detail (Employee_id, Name, Designation, Salary). Write a program to read the detail from user and print it. 11. Create array of structure STUDENT_DETAIL (Enrollment_no, Name, Sem, CPI) for 5 students, scan their information and print it.
4	12. Implement a program for stack that performs following operations using array: PUSH, POP, PEEP, CHANGE & DISPLAY 13. Write a program to determine if an input character string is of the form a^ib^i where i >= 1 i.e. Number of 'a' should be equal to number of 'b'.
5	14. Implement a program to convert in-fix notation to post-fix notation using stack.
6	15. Write a program for evaluation of post-fix Expression using Stack. 16. Write a program for evaluation of pre-fix Expression using Stack.
7	17. Implement Simple Queue using array that performs following operations: INSERT, DELETE, DISPLAY 18. Implement Circular Queue using array that performs following operations: INSERT, DELETE, DISPLAY

Lab	Practical
8	19. Implement a program to create a node for singly linked list. Read the data in a node, print the node and release the memory of the node. 20. Write a menu driven program to implement following operations on the singly linked list. a. Insert a node at the front of the linked list. b. Display all nodes. c. Delete a first node of the linked list. d. Insert a node at the end of the linked list. e. Delete a last node of the linked list. f. Delete a node from specified position. 21. Write a program to implement stack using linked list. 22. Write a program to implement queue using linked list.
9	23. Write a menu driven program to implement following operations on the ordered singly linked list. a. Insert a node such that linked list is in ascending order. (According to info. Field) b. Delete a node from specified position. c. Delete a first node of the linked list. d. Delete a last node of the linked list.
10	24. Write a menu driven program to implement following operations on the circular linked list. a. Insert a node at the front of the linked list. b. Delete a node from specified position. c. Insert a node at the end of the linked list. d. Display all nodes.
11	25. Write a menu driven program to implement following operations on the doubly linked list. a. Insert a node at the front of the linked list. b. Delete a node from specified position. c. Insert a node at the end of the linked list. d. Display all nodes.

Lab	Practical
12	26. Write a program to implement Linear/Sequential Search. 27. Write a program to implement Binary Search.
13	28. Read n numbers in an array from user and sort them in ascending order and print sorted array using bubble sort algorithm. 29. Read n numbers in an array from user and sort them in ascending order and print sorted array using insertion sort algorithm. 30. Read n numbers in an array from user and sort them in ascending order and print sorted array using selection sort algorithm.
14	31. Read n numbers in an array from user and sort them in ascending order and print sorted array using merge sort algorithm.
15	32. Read n numbers in an array from user and sort them in ascending order and print sorted array using quick sort algorithm.