

# **GURU NANAK DEV ENGINEERING COLLEGE,LUDHIANA**

## **PRACTICAL PLANNING RECORD**

**Department:** Computer Sc. &Engg.

**SubjectCode:** LPCCS-105

**Class:** D2 CSE

**Semester :** 4th Sem.

**Subject:** Data Structures Laboratory

<b>Sr. No.</b>	<b>Details of Practical</b>	<b>Likely Week</b>	<b>Teachers Signature</b>	<b>REMARK</b>
1	Write a Program to find the position of an element in an array using Linear Search Algorithm.	1		
2	Write a program to add two matrices .	1		
3	Design, Develop and Implement a menu driven Program for the following Array operations a. Display of Array Elements with Suitable Headings b. Inserting an Element (ELEM) at a given valid Position (POS) c. Deleting an Element at a given valid Position(POS) d. Exit. .	2		
4	Design, Develop and Implement a menu driven Program for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX) a. Push an Element on to Stack b. Pop an Element from Stack c. To Check Overflow and Underflow situations on Stack d. Display the elements of Stack e. Exit	2		

<b>Approved</b>	<b>EFFECTIVE</b>
<b>HOD</b>	<b>DATE</b>

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5	Design and implement a program to check a given number is Palindrome or not using stack.	3		
6	Design, Develop and Implement a Program for converting an Infix Expression to Postfix Expression. Program should support for both parenthesized and free parenthesized expressions with the operators: +, -, *, /, %(Remainder), ^(Power) and alphanumeric operands	3		
7	Design, Develop and Implement a Program for evaluating Suffix expression with single digit operands and operators: +, -, *, /, %, ^.	4		
8	Design, Develop and Implement a Program for solving Tower of Hanoi problem with n disks	4		
9	<p>Design, Develop and Implement a menu driven Program for the following operations on Linear QUEUE (Array Implementation of Queue with maximum size MAX)</p> <ol style="list-style-type: none"> <li>Check Overflow and Underflow situations on Linear QUEUE</li> <li>Insert an Element on to Linear QUEUE</li> <li>Delete an Element from Linear QUEUE</li> <li>Display the elements of Linear QUEUE</li> <li>Exit</li> </ol> <p>Support the program with appropriate functions for each of the above operations .</p>	5		

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Sr. No.	Details of Practical	Likely Week	Teachers Signature	REMARK
10	<p>Design, Develop and Implement a menu driven Program for the following operations on Circular QUEUE (Array Implementation of Queue with maximum size MAX)</p> <ol style="list-style-type: none"> <li>Check Overflow and Underflow situations on Circular QUEUE</li> <li>Insert an Element on to Circular QUEUE</li> <li>Delete an Element from Circular QUEUE</li> <li>Display the elements of Circular QUEUE</li> <li>Exit</li> </ol> <p>Support the program with appropriate functions for each of the above operations</p>	5		
11	<p>Design, Develop and Implement a menu driven Program for the following operations on Dequeue QUEUE (Array Implementation of Queue with maximum size MAX)</p> <ol style="list-style-type: none"> <li>Check Overflow and Underflow situations on Dequeue QUEUE</li> <li>Insert an Element on to Dequeue QUEUE</li> <li>Delete an Element from Dequeue QUEUE</li> <li>Display the status of Dequeue QUEUE</li> <li>Exit</li> </ol> <p>Support the program with appropriate functions for each of the above operations</p>	5		
12	<p>Design, Develop and Implement a menu driven Program for the following operations on Singly Linked List (SLL) of Student Data with the fields: USN, Name, Branch, Sem, PhNo</p> <ol style="list-style-type: none"> <li>Insert new student at beginning of list.</li> <li>Insert new student at end of list.</li> <li>Insert new student in the middle of the list.</li> <li>Display all records and count the number of nodes in it.</li> <li>Delete first student from the list.</li> <li>Delete last student from the list</li> <li>Delete nth student the list.</li> <li>Exit.</li> </ol>	6		

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<b>Sr. No.</b>	<b>Details of Practical</b>	<b>Likely Week</b>	<b>Teachers Signature</b>	<b>REMARK</b>
13	Design, Develop and Implement a menu driven Program for the following operations on STACK of Integers (Linked Implementation ) <ol style="list-style-type: none"> <li>Push an Element on to Stack</li> <li>Pop an Element from Stack</li> <li>To check Overflow and Underflow situations on Stack</li> <li>Display the elements of Stack</li> <li>Exit</li> </ol>	7		
14	Design, Develop and Implement a menu driven Program for the following operations on QUEUE (Linked Implementation) <ol style="list-style-type: none"> <li>Check Overflow and Underflow situations on QUEUE</li> <li>Insert an Element on to QUEUE</li> <li>Delete an Element from QUEUE</li> <li>Display the elements of QUEUE</li> <li>Exit</li> </ol> Support the program with appropriate functions for each of the above operations .	7		
15	Design, Develop and Implement a menu driven Program for the following operations on Doubly Linked List (DLL) of Employee Data with the fields: SSN, Name, Dept, Designation, Sal, PhNo <ol style="list-style-type: none"> <li>Insert new student at beginning of list.</li> <li>Insert new student at end of list.</li> <li>Insert new student in the middle of the list.</li> <li>Display all records and count the number of nodes in it.</li> <li>Delete first student from the list.</li> <li>Delete last student from the list</li> <li>Delete nth student the list.</li> <li>Exit.</li> </ol>	8		

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Sr. No.	Details of Practical	Likely Week	Teachers Signature	REMARK
15	Design, Develop and Implement a Program to perform insertion , deletion and traversing in a sorted Singly Circular Linked List (SCLL) with header nodes.	9		
16	Implement a Program to find the sum of two polynomials POLY1(x,y,z) and POLY2(x,y,z) and store the result in POLYSUM(x,y,z)	9		
17	Design, Develop and Implement a menu driven Program for the following operations on Binary Search Tree (BST) of Integers. a. Insertion in a BST. b. Traverse the BST in Inorder, Preorder and Post Order. c. Search an element in BST d. Deletion in BST e. Exit	10		
18	Design, Develop and Implement a menu driven Program for the following operations on Graph(G) of Cities a. Create a Graph of N cities using Adjacency Matrix b. Traverse Graph using using DFS c. Traverse Graph using using BFS method	10		
19	Write a Program to find the position of an element in an array using Binary search Algorithm.	11		
20	Write a program to sort list using bubble sort.	11		
21	Write a program to sort list using selection sort.	11		
22	Write a program to sort list using insertion sort.	11		
23	Write a program to sort list using merge sort.	11		
24	Write a program to sort list using quicksort.	11		

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