Name of the Faculty:
Name of the Institute:
Name of the Department:
Name of the Staff Member:
Course Name:
Course Code:

LabNo.	Unit/Chapter Number	Title of Practical/Tutorial
1	1	Write a program to perform various stack operations using array
2	1	Write a program to convert infix expression to prefix and postfix expression using stack

3	2	Write a program to perform the following operation on a simple queue. (Implement the queue using array
4	2	Write a program to perform the following operation on a circular queue. (Implement the queue using array) a) Insert an element b) Remove an element
5	2	Write a program to perform insert and remove operations on following(Priority Queue
6	3	Write a program to perform Double Ended Queue [Input Restricted / Output Restricte
7	3	Write a program to create a singly link list in FIFO & LIFO form

8	3	Write a program perform the following operations on a singly linked list. a) Create Linked list b) Insert element at first position c) Insert element at last position d) Insert element in Linked list in sorted order e) Delete element from Linked list f) Copy Linked list g) Find the sum of elements of linked list e) Count number of nodes of linked list f) Search given element in linked list
9	3	Write a program to perform following singly link list operations a. insert b. delete c. search d. reverse
10	3	**Write a program to perform following doubly link list operations insert b. delete c. search d. reverse**
11	3	**Write a program to add two polynomials**
12	3	**Write a program to perform following circular link list operations**
13	4	**Write a program to create a binary search tree and print its element in**
14	4	**program for insertion of a node in B tree / B+ tree a. Inorder b. Preorder c. Po**
16	4	**te a program to create a graph in a adjacency list structure traverse it in DFS ,I**
17	4	Write program to sort a given list using Insertion sort.
18	5	Write program to sort a given list using Shell sort.
19	5	Write program to sort a given list using Quick sort.

20	5	Write program to sort a given list using Bubble sort.
21	5	Write program to sort a given list using Merge sort.
22	5	Write program to sort a given list using Heap sort.
23	6	Write program to search an element in a given list using Linear Search and Binary Search.
24		Revision

Parul University
Micro Lecture Planning

FACULTY OF IT & CS
NSTITUTE OF COMPUTER APPLICATION
MCA
Prof. Madhav J
Data Structures
5201151

Name of the Programme:
Semester/Year:
Division:
Batch:
Hrs./Week:
Academic Year:

Sub-topics/ Activity	Duration (Minutes)	Specific Learning Objective (After completion of this sub-topic, students will be able to)	Targeted Course Outcome	Targeted Learning Domain
Write a C program to perform following operations on strack. (Use library functions for all operations) a) PUSHb) POP c) DISPLAY	30	Describe the significance of various linear and non-linear data structure such as arrays, stack, queue, linked list, trees and graph	CO1	Cognitive
Write a program to convert an infix arithmetic expression into postfix notation.	90	Identify the appropriate data structure for a given problem.	CO1	Cognitive

Write a program to perform the following operation on a simple queue. (Implement the queue using array	120	Construct most suitable data structure to solve a problem by considering various problem characteristic such as data size and various type of operation.	CO2	Cognitive
Write a program to perform the following operation on a circular queue. (Implement the queue using array) a) Insert an element b) Remove an element	30	Construct most suitable data structure to solve a problem by considering various problem characteristic such as data size and various type of operation.	CO3	Cognitive
ɔrm insert and remove operations on following(Priority Queue)				Cognitive
ɔrm Double Ended Queue [Input Restricted / Output Restricted]				Cognitive
·am to create a singly link list in FIFO & LIFO form				Cognitive

Write a program perform the following operations on a singly linked list. a) Create Linked list b) Insert element at first position c) Insert element at last position d) Insert element in Linked list in sorted order e) Delete element from Linked list f) Copy Linked list g) Find the sum of elements of linked list e) Count number of nodes of linked list f) Search given element in linked list	90	Construct most suitable data structure to solve a problem by considering various problem characteristic such as data size and various type of operation.	CO3	Cognitive
Opeartions on CRUD opearions	90	Construct most suitable data structure to solve a problem by considering various problem characteristic such as data size and various type of operation.		Cognitive
Doubly linked list Operations				
Polynomials operations				
Circular Linked list operations	120	Design and implement various	CO4	Cognitive
BST operations				
B-Tree Operations , inorder preorder, postorder	120	Design and implement various	CO4	Cognitive
BFS				
Write program to sort a given list	120	Design and	CO4	Cognitive
Write program to sort a given list	120	Design and	CO4	Cognitive
Write program to sort a given list using Quick sort	120	Design and implement various	CO4	Cognitive

Write program to sort a given list using Quick sort	120	Design and implement various techniques for	CO4	Cognitive
Write program to sort a given list	120	Design and	CO4	Cognitive
Write program to sort a given list	120	Design and	CO4	Cognitive
Write program to search an element in a given list using Linear Search	120	Design and	CO4	Cognitive
Revision	120	Design and	CO4	Cognitive

MCA
1
A
-
3
2024-25

Targeted Level of Learning	Learning-Teaching Method	Tools/Media to be used	Assessment Tool	Assessment Schedule	Planned Date
Understand	Lab Based Learning	8	Lab based Practical task	Within Lab	8/19/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	8/26/2024

Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	9/9/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	9/16/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	9/23/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	9/30/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	10/3/2024

Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	10/10/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	10/17/2024
					10/24/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	10/31/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	11/2/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	11/9/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	11/16/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	11/25/2024

Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	11/27/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	12/2/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	5/12/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	7/12/2024
Remember	Lab Based Learning	Turbo C/ VS Code	Lab based Practical task	Within Lab	10/12/2024

Actual Date