

PRASAD V. POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY
(Autonomous)
KANURU, VIJAYAWADA-520007

II B.Tech – I Sem CSE (AI&ML)

Data Structures Lab

Course Code	20AM3352	Year	II	Semester:	I
Course Category	PCC Lab	Branch	CSE(AI&ML)	Course Type	Practical
Credits	1.5	L-T-P	0-0-3	Prerequisites	Programming for Problem Solving using C
Continuous Internal Evaluation	15	Semester End Examination	35	Total Marks	50

Course Outcomes		
Upon successful completion of the course, the student will be able to:		
CO1	Apply Linear and non-linear data structures for solving problems.	L3
CO2	Implement programs as an individual on different IDEs.	L3
CO3	Develop an effective report based on various programs implemented.	L3
CO4	Apply technical knowledge for a given problem and express it with effective oral communication.	L3
CO5	Analyze outputs using given constraints/test cases.	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3: High, 2: Medium, 1: Low)														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS01
CO1	3													
CO2					1				2					
CO3			3											
CO4										3				
CO5		2										1		

Syllabus		
Expt. No.	Contents	Mapped CO
1	Demonstrate recursive algorithms with examples.	CO1,CO2,CO3,CO4,CO5
2	Implement various searching techniques.	CO1,CO2,CO3,CO4,CO5
3	Develop programs for different sorting techniques	CO1,CO2,CO3,CO4,CO5
4	Implement and perform different operations on Single, Double and Circular Linked Lists.	CO1,CO2,CO3,CO4,CO5
5	Develop a program to perform operations of a Stack using arrays and linked Lists.	CO1,CO2,CO3,CO4,CO5
6	Develop programs to implement Stack applications.	CO1,CO2,CO3,CO4,CO5
7	Develop a program to perform operations of Linear Queue using arrays and linked Lists.	CO1,CO2,CO3,CO4,CO5
8	Implement Circular Queues.	CO1,CO2,CO3,CO4,CO5
9	Develop a program to represent a tree data structure.	CO1,CO2,CO3,CO4,CO5
10	Develop a program to demonstrate operations on Binary Search Tree.	CO1,CO2,CO3,CO4,CO5
11	Implement and perform different operations on Graph	CO1,CO2,CO3,CO4,CO5
12	Demonstrate Graph Traversal Techniques	CO1,CO2,CO3,CO4,CO5
13	Case Study -1	CO1,CO2,CO3,CO4,CO5
14	Case Study -2	CO1,CO2,CO3,CO4,CO5
15	Case Study -3	CO1,CO2,CO3,CO4,CO5
16	Case Study -4	CO1,CO2,CO3,CO4,CO5

Learning Resources
Text Books
1. Data Structures Using C, Reema Thareja, Second Edition, OXFORD University Press
e-Resources & other digital material
1. https://www.cs.usfca.edu/~galles/visualization/Algorithms.html 2. http://www.algomatic.com/algorithm/single-linked-list-insert-delete 3. http://www.algomatic.com/algorithm/binary-tree-insert-delete-display 4. https://www.youtube.com/watch?v=AfYqN3fGapc 5. https://www.youtube.com/watch?v=7vw2ildqHlM 6. http://littlesvr.ca/dsa-html5-animations/sorting.php