

Government Engineering College, Rajkot  
Department of Computer Engineering  
B.E. 3<sup>rd</sup> Semester  
Data Structures (3130702)

Sr. No.	Problem Definition.
1	Introduction to Call by Value and Call by reference and Call by address.
2	Introduction to Dynamic Memory Allocation. DMA functions malloc(), calloc(), free() etc.
3	Write a program of stack that performs following operations using array. (a) PUSH (b) POP (c) PEEP (d) CHANGE (e) DISPLAY
4	Write a program to convert infix notation to postfix notation using stack (with and without parenthesis).
5	Write a program for evaluation of postfix expression.
6	Write a program to implement QUEUE using array that performs following operations. (a) INSERT (b) DELETE (c) DISPLAY
7	Write a program to implement Circular Queue using array that performs following operations.. (a) INSERT (b) DELETE (c) DISPLAY
8	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) Insert a node at the end of the linked list. (c) Insert a node such that linked list is in ascending order.(according to info. Field) (d) Delete a first node of the linked list. (e) Delete a node before specified position. (f) Delete a node after specified position.
9	Write a program to implement stack using linked list.
10	Write a program to implement queue using linked list.
11	Write a program to implement following operations on the circular linked list. (a) Insert a node at the end of the linked list. (b) Insert a node before specified position. (c) Delete a first node of the linked list. (d) Delete a node after specified position.
12	Write a program to implement following operations on the doubly linked list. (a) Insert a node at the front of the linked list. (b) Insert a node at the end of the linked list. (c) Delete a last node of the linked list. (d) Delete a node before specified position.
13	Write a program which create binary search tree.
14	Implement recursive and non-recursive tree traversing methods inorder, preorder and postorder traversal.
15	Write a program to implement Selection Sort.
16	Write a program to implement Bubble Sort.
17	Write a program to implement Merge Sort.
18	Write a program to implement Quick Sort.
19	Write a program to implement Linear Search.
20	Write a program to implement Binary Search.