B.Tech. (CSE)
Term Work - Data structure using 'C' – language

Date of Submission: 7th December 2024

INSTRUCTIONS:

1.The programs should have source code and its output separately, print outs should be on DMP sheets.
2. Programs in the file should be numbered as given in the term work.
3. All programs should be menu driven
4. Thick chart paper (green for UG courses / Light Pink for PG courses) binding for the file is required.
5. The file should have 4 pages initially in black and white in the given order
  a. Front page-In Submitted To.
  b. Certificate
  c. Acknowledgement
  d. Index
6. Use A4 size bond paper for algorithm.
7. Do not use global pointers/variables.
8. Write comments in every program.
9. Copy/Paste of programs is not allowed in any case. Perform the programs by yourself.

Q1. Write a C program to implement priority queue using doubly linked list (Priority depends on identity number. Small identity number has greater priority. If identity numbers are equal. Then FIFO rules are used with following functions,

1) insert 2) delete 3) display

Q2. Write a C program to find union (of two linked lists) based on their information field that implements singly linked list (with information field Emp_Id and Name of employee for each node).

Q3. Write a C program to create a linked list P, then write a 'C' function named **split** to create two linked lists Q & R from P So that Q contains all elements in odd positions of P and R contains the remaining elements. Finally print both linked lists i.e. Q and R.

Q4. Write a C program to create a binary search tree and perform following operations:

1) Find node having smallest data in the BST.
2) Delete a node from the tree.
3) Find total number nodes having common parent.
4) Find height of a binary search tree
5) Count total numbers of nodes from right hand side of root node

Q5. Write a C program to implement Kurskal's algorithm to find minimal spanning tree from a given graph.

Q6. Write a C program to sort N names (as a string) given by user in an array, using Quick sort technique.

Q7. Write a C program using circular linked list allocate time slots of 10 ms for given processes in time sharing environment and then print which process will be completed in how much time.

Q8. Write a C program to store the details of a weighted graph (Using linked list).

Q9. Write a menu driven program to implement DFS.

Q10. Write a menu driven program to implement BFS.