Data Structure Lab (KCS351)
List of Programs

Problem statement/link
Program for traversing array elements.
Program to insert the given elements into an array.
Program for insetion in the sorted array
Program for delete the given elements into an array.
Program for Missing number in an array
Program to find which element is repeated in the array and which is not
Program for reversal of an array.
Program for merging two sorted arrays
Program for Set union
Program for Set Intersection
Program for Set Difference
Program for Set Symmetric Difference
Program for computation of address of given element in the one dimensional array and verification with the Physical Address
Program for computation of address of given element in the two dimensional array and verification with the Physical Address
Program for computation of address of given element in the three dimensional array and verification with the Physical Address
Program for Matrix Addition
Program for Matrix Subtraction
Program for Matrix Multiplication
Program for Matrix Transpose
Program for finding Matrix Determinant
Program for Matrix transposition without second matrix
program for Linear Search
Program for Binary search
Program for Ternary search
Program for Jump Search

Program for interpolation search
Program for Index sequential Search
Program for Exponential search
Program for Hash Table Implementation for Basic Hash Function (Without collisions)
Program for Hash Table Implementation for Collision Resoulution using Linear Probing
Program for Hash Table Implementation for Collision Resoulution using Quadratic Probing
Program for Hash Table Implementation for Collision Resoulution using Double Hashing/Re-Hashing
Program for Hash Table Implementation for Collision Resoulution using Separate Chaining
Program for finding factorial of a given number using recursion
Program for Computing A raised to power n using Recursion
Program for finding nth Fibonacci number using Recursion and improving its run time to save stack operations
Program for finding GCD of two numbers using Recursion
Binary Search with Recursion
Program for Towers of Hanoi for n disk (user defined)
Program to reverse the given number using Recursion
Finding sum of the digits of the number
To check if the given string is a palindrome using Recursion
Program for Bubble Sort
Program for Selection Sort
Program for Insertion Sort
Program for Implementation of Shell Sort
Program for Merge Sort
Program for Quick Sort
Program for Median Quick Sort
Program for Randomized Quick Sort
Program for Counting Sort
Program for Radix Sort
Program for Heap Sort
Get the input of student: Name, Roll No, Marks in 6 subjects in 12th. Find if the student is eligible for admission in Delhi University. A student is eligible fo
Write a program to store and print the roll no., name, age and marks of a student using structures. Write a program to store the roll no. (starti
3. Write a program to store and print the roll no., name, age, address and marks of 15 students using structure.

4. Write a program to add two distances in inch-feet using structure. The values of the distances is to be taken from the user.
5. Write a program to add two complex numbers using structure. The values of the complex number is to be taken from the user.
6. Write a program to add two time in hour, minute and second using structure. The values of the time is to be taken from the user.
7. Enter the marks of 5 students in Chemistry, Mathematics and Physics (each out of 100) using a structure named Marks having elements rc
8. Write a program to add, subtract and multiply two complex numbers using structures to function.
students. - Write a function to print the names of all the students having age 14. - Write another function to print the names of all the students having even roll no. - Write another function to display the details of the student whose roll no is given (i.e. roll no. entered by the user).
function to print the names of all the customers having balance less than $200. value of their balance.
11. Write a program to compare two dates entered by user. Make a structure named Date to store the elements day, month and year to store
salary depending on the number of hours of work per day as follows and then print the name of all the employees along with their final Increase in salary $50
and flag to know whether book is issued or not. Create a menu in which the following can be done. 1 - Display book information 2 - Add a new book 3 - Display all the books in the library of a particular author 4 - Display the number of books of a particular title 5 - Display the total number of books in the library 6 - Issue a book (If we issue a book, then its number gets decreased by 1 and if we add a book, its number gets increased by 1)
Program for Stack Primitive Operations
Program for Decimal to Binary Conversion
Program for Decimal to Octal Conversion
Program for Decimal to Hexadecimal Conversion
Program for Decimal to Any Base Conversion
Program to check the validity of Parenthesized Arithmetic Expression using Stack
Program to check the validity of Bracketed Arithmetic Expression using Stack
Program to check if the given number is a palindrome using stacks
Program to Reverse the given String using Stack
Program for Postfix Evaluation

Program for Prefix Evaluation
Program for Infix to Postfix Coversion
Program for Infix to Prefix Coversion
Program for implementation of 2 stacks using a single Array
Program for Finding Minimum in the Stack
Program for Sorting of stack
Program for implementation of Multiple stack in one Array
Program of Array Implementaion of Linear Queue
Program of Array Implementaion of CircularQueue
Program for ArrayImplementation of Double Ended Queue
Program for Array Implementation of Priority Queue (Ascending Array)
Program for Array Implementation of Priority Queue (Descending Array)
Program for Heap Implementation of Priority Queue
Program for Stack implementation using Queue
Program for Queue implementation using Stack
Program for Linear Linked List Primitive operations
Program for creation of Linked List header file and test of basic functions through that
Program for finding count of Nodes in Linked List
Program for concatenation of Linear Linked List
Program to implement Linear search.
Program to insert an item at any given position in the linked List
Program for Creation of Copy of the Linked list
Program for counting nodes containing even and odd information.
Program for Splitting a Linked List(in-place)
Program for Creation of Ascending Order Linear Linked List
Program for Merging two sorted Linked List/unsoted link list
Program for Union of two sorted Linked List (consider lists as sets)
Program for Intersection of two sorted Linked List (consider lists as sets)
Program for finding difference of two linked list (consider lists as sets)
Program for Symmetric difference of two sorted Linked List (consider lists as sets)
Program for Finding the Middle element of a singly linked list in one pass

Program to perform Binary Search on the Linked List
Program for Reversing the Linear Linked List
Program to print Linked List contents in reverse order
Program for Pair wise swap of elements in linked list
Program to find kth node from the last in a single link list
Program for Sorting the Linear Linked List
Program for finding if the given link list is palindrome or not
Program to Detect if there is ay cycle in the linked list, starting point of cycle, length of cycle
Program for Delete duplicate nodes in the Linked List
Program to find the Merging point in the linked list
Program for Linked List Implementaion of Priority Queue
maintaining the order of their arrival
Program for Deletion of all occuraces of x from Linked List
Program to Delete kth node from end of a linked list in a single scan and O(n) time
Program to find out the addition of two given link list 125+85 =210 1->2->5 8->5
Program for addition very long numbers using Linked List
Program to find out the substraction of two given link list
Program for Polynomial Addition using Linked List
Program for Polynomial subtraction using Linked List
Program for Polynomial Multiplication using Linked List
Program for Circular Linked List Primitive Operations
Program for concatenation of Circular Linked List
Program for reversing the Circular Linked List
Program to Modify a Circular Linked List such that each node stores the sum of all nodes except itself
Program to remove all Fibonacci Nodes from a Circular Singly Linked List
Program for implementation of Josephus Problem
Program for Doubly linked list Primitive operations
Program for Circular Doubly Linked List Primitive Operations
Program for Linked List Implementation of Stacks
Program for Linked List Implementaion of Queue
Program for Linked List implementation of Double Ended Queue

Program for implementation of Header Linked List
Program for Pre-Order, In-Order, Post-Order Traversal
Recursive Creation of Binary Tree
Program to find Node Count in the Binary Tree
Program to find leaf node Count in the Binary Tree
Program to find count of nodes having 1 child
Program to find count of nodes having 2 children
Program to Find the height of the Binary Tree
write a program or function to find the sum all nodes in a given binary tree.
Program to Find if the given Binary Tree is complete
Program to find if the given Binary Tree is strictly
Program for Level Order Traversal
Program for Vertical Traversal
Program for Top View Traversal
Program for Bottom view Traversal
Program for Left View Traversal
Program for Right View Traversal
Write a program to create a copy of the given Binary Tree
write a program to delete to entire binary tree.
wrirte a program to check the two given binary tree is identical or not(structure as well as node value)
write a program to find out mirror image of given binary tree.
Program to build the Expression Tree from the given Infix expression
Program for Huffman Coding
write a program to construct a tree from given traversals.
write a program to check if the given tree is BST or not.
write a program to implement Insertion and Search operation in BST (Iterative)
Program to find the diameter of the Binary Tree (distance between the farthest node)
write a program to implement min,max,successor, predesessor in the BST
write a program to implement deletion in BST.
Write a Program for BST insertion (using Recursion)
write a program to perform insertion operation for AVL tree.

Vector, Pair, Queue
Program to read a graph and print the adjacency List
Program to read the adjacency matrix and convert that to Adjacency List
Program for BFS on a Graph
Program for DFS on a Graph
Program to find the number of connected components in the undirected Graph
Program for Warshall's Algorithm for APSP
Program for Warshall's Algorithm for Transitive Closure
Program for finding Transitive Closure using Multiplication Method
Program for 1-D array implementation of Upper Traingular Sparse Matrix
Program for 1-D array implementation of Lower Traingular Sparse Matrix
Program for 1-D array implementation of Tridiagonal Sparse Matrix
Program for Vector Representation of General Sparse Matrix
Program For Linked List Implementation of General Sparse Matrix
Program for Addition of two sparse Matrices
Program for finding transpose of a sparse Matrix
Program for Multiplication of Sparse Matrix