

## Array C/C++ Programs

C Program to find sum of elements in a given array

C program to find largest element in an array

Recursive C program to linearly search an element in a given array

C program to multiply two matrices

C/C++ Program for Given an array A[] and a number x, check for pair in A[] with sum as x

C/C++ Program for Majority Element

C/C++ Program for Find the Number Occurring Odd Number of Times

C/C++ Program for Largest Sum Contiguous Subarray

C/C++ Program for Find the Missing Number

C/C++ Program for Search an element in a sorted and pivoted array

C/C++ Program for Merge an array of size n into another array of size m+n

C/C++ Program for Median of two sorted arrays

C/C++ Program for Write a program to reverse an array

C/C++ Program for Program for array rotation

C/C++ Program for Reversal algorithm for array rotation

C/C++ Program for Block swap algorithm for array rotation

C/C++ Program for Maximum sum such that no two elements are adjacent

C/C++ Program for Leaders in an array

C/C++ Program for Sort elements by frequency | Set 1

C/C++ Program for Count Inversions in an array

C/C++ Program for Two elements whose sum is closest to zero

C/C++ Program for Find the smallest and second smallest element in an array

C/C++ Program for Check for Majority Element in a sorted array

C/C++ Program for Maximum and minimum of an array using minimum number of comparisons

C/C++ Program for Segregate 0s and 1s in an array

C/C++ Program for k largest(or smallest) elements in an array | added Min Heap method

C/C++ Program for Maximum size square sub-matrix with all 1s

C/C++ Program for Maximum difference between two elements such that larger element appears after the smaller number

C/C++ Program for Union and Intersection of two sorted arrays

C/C++ Program for Floor and Ceiling in a sorted array

C/C++ Program for A Product Array Puzzle

C/C++ Program for Segregate Even and Odd numbers

C/C++ Program for Find the two repeating elements in a given array

C/C++ Program for Sort an array of 0s, 1s and 2s

C/C++ Program for Find the Minimum length Unsorted Subarray, sorting which makes the complete array sorted

C/C++ Program for Find duplicates in O(n) time and O(1) extra space

C/C++ Program for Equilibrium index of an array

C/C++ Program for Which sorting algorithm makes minimum number of memory writes?

C/C++ Program for Turn an image by 90 degree

C/C++ Program for Search in a row wise and column wise sorted matrix

C/C++ Program for Next Greater Element

C/C++ Program for Check if array elements are consecutive | Added Method 3

C/C++ Program for Find the smallest missing number

C/C++ Program for Count the number of occurrences in a sorted array

C/C++ Program for Binary Search

C/C++ Program for Selection Sort  
C/C++ Program for Bubble Sort  
C/C++ Program for Insertion Sort  
C/C++ Program for Merge Sort  
C/C++ Program for Heap Sort  
C/C++ Program for QuickSort  
C/C++ Program for Given an array arr[], find the maximum j – i such that arr[j] > arr[i]  
C/C++ Program for Maximum of all subarrays of size k (Added a O(n) method)  
C/C++ Program for Find whether an array is subset of another array | Added Method 3  
C/C++ Program for Find the minimum distance between two numbers  
C/C++ Program for Find the repeating and the missing | Added 3 new methods  
C/C++ Program for Print a given matrix in spiral form  
C/C++ Program for A Boolean Matrix Question  
C/C++ Program for Median in a stream of integers (running integers)  
C/C++ Program for Find a Fixed Point in a given array  
C/C++ Program for Maximum Length Bitonic Subarray  
C/C++ Program for Find the maximum element in an array which is first increasing and then decreasing  
C/C++ Program for Count smaller elements on right side  
C/C++ Program for Minimum number of jumps to reach end  
C/C++ Program for Implement two stacks in an array  
C/C++ Program for Find subarray with given sum  
C/C++ Program for Dynamic Programming | Set 14 (Maximum Sum Increasing Subsequence)  
C/C++ Program for Longest Monotonically Increasing Subsequence Size (N log N)  
C/C++ Program for Find a triplet that sum to a given value  
C/C++ Program for Find the smallest positive number missing from an unsorted array  
C/C++ Program for Find the two numbers with odd occurrences in an unsorted array  
C/C++ Program for The Celebrity Problem  
C/C++ Program for Dynamic Programming | Set 15 (Longest Bitonic Subsequence)  
C/C++ Program for Find a sorted subsequence of size 3 in linear time  
C/C++ Program for Largest subarray with equal number of 0s and 1s  
C/C++ Program for Dynamic Programming | Set 18 (Partition problem)  
C/C++ Program for Maximum Product Subarray  
C/C++ Program for Find a pair with the given difference  
C/C++ Program for Replace every element with the next greatest  
C/C++ Program for Dynamic Programming | Set 20 (Maximum Length Chain of Pairs)  
C/C++ Program for Find four elements that sum to a given value | Set 1 ( $n^3$  solution)  
C/C++ Program for Find four elements that sum to a given value | Set 2 ( $O(n^2 \log n)$  Solution)  
C/C++ Program for Sort a nearly sorted (or K sorted) array  
C/C++ Program for Maximum circular subarray sum  
C/C++ Program for Find the row with maximum number of 1s  
C/C++ Program for Median of two sorted arrays of different sizes  
C/C++ Program for Print unique rows in a given boolean matrix  
C/C++ Program for Shuffle a given array  
C/C++ Program for Count the number of possible triangles  
C/C++ Program for Iterative Quick Sort  
C/C++ Program for Inplace M x N size matrix transpose | Updated

C/C++ Program for Find the number of islands  
 C/C++ Program for Construction of Longest Monotonically Increasing Subsequence (N log N)  
 C/C++ Program for Find the first circular tour that visits all petrol pumps  
 C/C++ Program for Arrange given numbers to form the biggest number  
 C/C++ Program for Dynamic Programming | Set 27 (Maximum sum rectangle in a 2D matrix)  
 C/C++ Program for Pancake sorting  
 C/C++ Program for A Pancake Sorting Problem  
 C/C++ Program for Tug of War  
 C/C++ Program for Print Matrix Diagonally  
 C/C++ Program for Divide and Conquer | Set 3 (Maximum Subarray Sum)  
 C/C++ Program for Counting Sort  
 C/C++ Program for Merge Overlapping Intervals  
 C/C++ Program for Find the maximum repeating number in O(n) time and O(1) extra space  
 C/C++ Program for Stock Buy Sell to Maximize Profit  
 C/C++ Program for Rearrange positive and negative numbers in O(n) time and O(1) extra space  
 C/C++ Program for Sort elements by frequency | Set 2  
 C/C++ Program for Find a peak element  
 C/C++ Program for Print all possible combinations of r elements in a given array of size n  
 C/C++ Program for Given an array of of size n and a number k, find all elements that appear more than  $n/k$  times  
 C/C++ Program for Find the point where a monotonically increasing function becomes positive first time  
 C/C++ Program for Find the Increasing subsequence of length three with maximum product  
 C/C++ Program for Find the minimum element in a sorted and rotated array  
 C/C++ Program for Stable Marriage Problem  
 C/C++ Program for Merge k sorted arrays | Set 1  
 C/C++ Program for Radix Sort  
 C/C++ Program for Move all zeroes to end of array  
 C/C++ Program for Find number of pairs such that  $x^y > y^x$   
 C/C++ Program for Count all distinct pairs with difference equal to k  
 C/C++ Program for Count all possible paths from top left to bottom right of a mXn matrix  
 C/C++ Program for Suffix Array | Set 1 (Introduction)  
 C/C++ Program for Rearrange an array so that  $arr[i]$  becomes  $arr[arr[i]]$  with O(1) extra space  
 C/C++ Program for Sort n numbers in range from 0 to  $n^2 - 1$  in linear time  
 C/C++ Program for Count all possible groups of size 2 or 3 that have sum as multiple of 3

### **Matrix C/C++ Programs**

C Program to check if two given matrices are identical  
 C program to find transpose of a matrix  
 C program for subtraction of matrices  
 C program for addition of two matrices  
 C program to multiply two matrices  
 C/C++ Program for Print a given matrix in spiral form  
 C/C++ Program for A Boolean Matrix Question

C/C++ Program for Print Matrix Diagonally  
C Program to find the number of islands  
C Program to find maximum size square sub-matrix with all 1s  
C/C++ program for the celebrity problem  
C/C++ Program for Print a given matrix in spiral form

### **String C/C++ Programs**

C program to swap two Strings  
C Program to Check if a Given String is Palindrome  
C Program to Sort an array of names or strings  
C/C++ Program for Return maximum occurring character in the input string  
C/C++ Program for Remove all duplicates from the input string.  
C/C++ Program for Print all the duplicates in the input string.  
C/C++ Program for Remove characters from the first string which are present in the second string  
C/C++ Program for A Program to check if strings are rotations of each other or not  
C/C++ Program for Print reverse of a string using recursion  
C/C++ Program for Write a C program to print all permutations of a given string  
C/C++ Program for Divide a string in N equal parts  
C/C++ Program for Given a string, find its first non-repeating character  
C/C++ Program for Print list items containing all characters of a given word  
C/C++ Program for Reverse words in a given string  
C/C++ Program for Run Length Encoding  
C/C++ Program for Find the smallest window in a string containing all characters of another string  
C/C++ Program for Searching for Patterns | Set 1 (Naive Pattern Searching)  
C/C++ Program for Searching for Patterns | Set 2 (KMP Algorithm)  
C/C++ Program for Searching for Patterns | Set 3 (Rabin-Karp Algorithm)  
C/C++ Program for Searching for Patterns | Set 4 (A Naive Pattern Searching Question)  
C/C++ Program for Length of the longest substring without repeating characters  
C/C++ Program for Print all permutations with repetition of characters  
C/C++ Program for Print all interleavings of given two strings  
C/C++ Program for Check whether a given string is an interleaving of two other given strings  
C/C++ Program for Check whether two strings are anagram of each other  
C/C++ Program for Searching for Patterns | Set 5 (Finite Automata)  
C/C++ Program for Pattern Searching | Set 6 (Efficient Construction of Finite Automata)  
C/C++ Program for Pattern Searching | Set 7 (Boyer Moore Algorithm – Bad Character Heuristic)  
C/C++ Program for Dynamic Programming | Set 17 (Palindrome Partitioning)  
C/C++ Program for Lexicographic rank of a string  
C/C++ Program for Print all permutations in sorted (lexicographic) order  
C/C++ Program for Longest Palindromic Substring | Set 1  
C/C++ Program for An in-place algorithm for String Transformation  
C/C++ Program for Longest Palindromic Substring | Set 2  
C/C++ Program for Given a sequence of words, print all anagrams together | Set 1  
C/C++ Program for Given a sequence of words, print all anagrams together | Set 2  
C/C++ Program for Count words in a given string  
C/C++ Program for String matching where one string contains wildcard characters  
C/C++ Program for Write your own atoi()

C/C++ Program for Dynamic Programming | Set 29 (Longest Common Substring)  
C/C++ Program for Remove "b" and "ac" from a given string  
C/C++ Program for Dynamic Programming | Set 33 (Find if a string is interleaved of two other strings)  
C/C++ Program for Find the first non-repeating character from a stream of characters  
C/C++ Program for Recursively remove all adjacent duplicates  
C/C++ Program for Rearrange a string so that all same characters become d distance away  
C program to find second most frequent character

### **Linked List C/C++ Programs:**

C/C++ Program for Introduction to Linked List  
C/C++ Program for Linked List Insertion  
C/C++ Program for Write a function to get Nth node in a Linked List  
C/C++ Program for Given only a pointer to a node to be deleted in a singly linked list, how do you delete it?  
C/C++ Program to print the middle of a given linked list  
C/C++ Program for Nth node from the end of a Linked List  
C/C++ Program to delete a Linked List  
C/C++ Program to counts the number of times a given int occurs in a Linked List  
C/C++ Program for Given only a pointer to a node to be deleted in a singly linked list, how do you delete it?  
C/C++ Program to reverse a linked list  
C/C++ Program to detect loop in a linked list  
C/C++ Program to check if a singly linked list is palindrome  
C/C++ Program The Great Tree-List Recursion Problem.  
C/C++ Program to Copy a linked list with next and arbit pointer  
C/C++ Program for Given a linked list which is sorted, how will you insert in sorted way  
C/C++ Program for Write a function to get the intersection point of two Linked Lists.  
C/C++ Program for Write a recursive function to print reverse of a Linked List  
C/C++ Program for Remove duplicates from a sorted linked list  
C/C++ Program for Remove duplicates from an unsorted linked list  
C/C++ Program for Reverse a Doubly Linked List  
C/C++ Program for Split a Circular Linked List into two halves  
C/C++ Program for Practice questions for Linked List and Recursion  
C/C++ Program for Move last element to front of a given Linked List  
C/C++ Program for Pairwise swap elements of a given linked list  
C/C++ Program for Delete a node in a Doubly Linked List  
C/C++ Program for Intersection of two Sorted Linked Lists  
C/C++ Program for Delete alternate nodes of a Linked List  
C/C++ Program for Alternating split of a given Singly Linked List  
C/C++ Program for Merge two sorted linked lists  
C/C++ Program for Identical Linked Lists  
C/C++ Program for Merge Sort for Linked Lists  
C/C++ Program for Reverse a Linked List in groups of given size  
C/C++ Program for Sorted insert for circular linked list  
C/C++ Program for Reverse alternate K nodes in a Singly Linked List  
C/C++ Program for Delete nodes which have a greater value on right side  
C/C++ Program for Segregate even and odd nodes in a Linked List  
C/C++ Program for Detect and Remove Loop in a Linked List

C/C++ Program for XOR Linked List – A Memory Efficient Doubly Linked List | Set 1  
C/C++ Program for Add two numbers represented by linked lists | Set 1  
C/C++ Program for How to write C functions that modify head pointer of a Linked List?  
C/C++ Program for Delete a given node in Linked List under given constraints  
C/C++ Program for Sorted Linked List to Balanced BST  
C/C++ Program for In-place conversion of Sorted DLL to Balanced BST  
C/C++ Program for Union and Intersection of two Linked Lists  
C/C++ Program for XOR Linked List – A Memory Efficient Doubly Linked List | Set 2  
C/C++ Program for Find a triplet from three linked lists with sum equal to a given number  
C/C++ Program for Rotate a Linked List  
C/C++ Program for Implement LRU Cache  
C/C++ Program for Flattening a Linked List  
C/C++ Program for Add two numbers represented by linked lists | Set 2  
C/C++ Program for Sort a linked list of 0s, 1s and 2s  
C/C++ Program for Flatten a multilevel linked list  
C/C++ Program for QuickSort on Doubly Linked List  
C/C++ Program for Swap Kth node from beginning with Kth node from end in a Linked List  
C/C++ Program for Design a stack with operations on middle element  
C/C++ Program for Delete N nodes after M nodes of a linked list  
C/C++ Program for QuickSort on Singly Linked List  
C/C++ Program for Merge a linked list into another linked list at alternate positions  
C/C++ Program for Pairwise swap elements of a given linked list by changing links  
C/C++ Program for Given a linked list, reverse alternate nodes and append at the end  
C Program for Bubble Sort on Linked List

#### **Stack C/C++ Programs:**

C/C++ Program for Introduction to Stack  
C/C++ Program for Infix to Postfix Conversion using Stack

C/C++ Program for Evaluation of Postfix Expression  
C/C++ Program for Reverse a String using Stack  
C/C++ Program for Implement two stacks in an array  
C/C++ Program for Check for balanced parentheses in an expression  
C/C++ Program for Next Greater Element  
C/C++ Program for Reverse a stack using recursion  
C/C++ Program for The Stock Span Problem  
C/C++ Program for Design and Implement Special Stack Data Structure  
C/C++ Program for Implement Stack using Queues  
C/C++ Program for Design a stack with operations on middle element

#### **Queue C/C++ Programs:**

C/C++ Program for Queue Introduction and Array Implementation  
C/C++ Program for Linked List Implementation of Queue  
C/C++ Program for Implement Queue using Stacks  
C/C++ Program for Check whether a given Binary Tree is Complete or not  
C/C++ Program for Find the largest multiple of 3

#### **Tree C/C++ Programs:**

C/C++ Program for Tree Traversals  
C/C++ Program for Write a C program to Calculate Size of a tree  
C/C++ Program for Write C Code to Determine if Two Trees are Identical

C/C++ Program for Write a C Program to Find the Maximum Depth or Height of a Tree  
C/C++ Program for Write a C program to Delete a Tree.  
C/C++ Program for Write an Efficient C Function to Convert a Binary Tree into its Mirror Tree  
C/C++ Program for If you are given two traversal sequences, can you construct the binary tree?  
C/C++ Program for Given a binary tree, print out all of its root-to-leaf paths one per line.  
C/C++ Program for Lowest Common Ancestor in a Binary Search Tree.  
C/C++ Program for The Great Tree-List Recursion Problem.  
C/C++ Program for Find the node with minimum value in a Binary Search Tree  
C/C++ Program for Level Order Tree Traversal  
C/C++ Program for Program to count leaf nodes in a binary tree  
C/C++ Program for A program to check if a binary tree is BST or not  
C/C++ Program for Level order traversal in spiral form  
C/C++ Program for Check for Children Sum Property in a Binary Tree.  
C/C++ Program for Convert an arbitrary Binary Tree to a tree that holds Children Sum Property  
C/C++ Program for Diameter of a Binary Tree  
C/C++ Program for How to determine if a binary tree is height-balanced?  
C/C++ Program for Inorder Tree Traversal without Recursion  
C/C++ Program for Inorder Tree Traversal without recursion and without stack!  
C/C++ Program for Root to leaf path sum equal to a given number  
C/C++ Program for Construct Tree from given Inorder and Preorder traversals  
C/C++ Program for Given a binary tree, print all root-to-leaf paths  
C/C++ Program for Double Tree  
C/C++ Program for Maximum width of a binary tree  
C/C++ Program for Total number of possible Binary Search Trees with n keys  
C/C++ Program for Foldable Binary Trees  
C/C++ Program for Print nodes at k distance from root  
C++ Program for Inorder predecessor and successor of a given key in BST  
C/C++ Program for Sorted order printing of a given array that represents a BST  
C/C++ Program for Applications of tree data structure  
C/C++ Program for Inorder Successor in Binary Search Tree  
C/C++ Program for Find k-th smallest element in BST (Order Statistics in BST)  
C/C++ Program for Get Level of a node in a Binary Tree  
C/C++ Program for Print Ancestors of a given node in Binary Tree  
C/C++ Program for Print BST keys in the given range  
C/C++ Program for Tournament Tree (Winner Tree) and Binary Heap  
C/C++ Program for Check if a given Binary Tree is SumTree  
C/C++ Program for Decision Trees – Fake (Counterfeit) Coin Puzzle (12 Coin Puzzle)  
C/C++ Program for Check if a binary tree is subtree of another binary tree  
C/C++ Program for Trie | (Insert and Search)  
C/C++ Program for Trie | (Delete)  
C/C++ Program for Connect nodes at same level  
C/C++ Program for Connect nodes at same level using constant extra space  
C/C++ Program for Sorted Array to Balanced BST  
C/C++ Program for Populate Inorder Successor for all nodes  
C/C++ Program for Convert a given tree to its Sum Tree  
C/C++ Program for Find the largest BST subtree in a given Binary Tree



C/C++ Program for AVL Tree | Set 1 (Insertion)  
C/C++ Program for Vertical Sum in a given Binary Tree  
C/C++ Program for AVL Tree | Set 2 (Deletion)  
C/C++ Program for Merge Two Balanced Binary Search Trees  
C/C++ Program for Find the maximum sum leaf to root path in a Binary Tree  
C/C++ Program for Merge two BSTs with limited extra space  
C/C++ Program for Binary Tree to Binary Search Tree Conversion  
C/C++ Program for Construct Special Binary Tree from given Inorder traversal  
C/C++ Program for Construct a special tree from given preorder traversal  
C/C++ Program for Check if each internal node of a BST has exactly one child  
C/C++ Program for Check whether a given Binary Tree is Complete or not  
C/C++ Program for Boundary Traversal of binary tree  
C/C++ Program for Two nodes of a BST are swapped, correct the BST  
C/C++ Program for Construct Full Binary Tree from given preorder and postorder traversals  
C/C++ Program for Construct BST from given preorder traversal | Set 1  
C/C++ Program for Construct BST from given preorder traversal | Set 2  
C/C++ Program for Floor and Ceil from a BST  
C/C++ Program for Iterative Preorder Traversal  
C/C++ Program for Convert a BST to a Binary Tree such that sum of all greater keys is added to every key  
C/C++ Program for Morris traversal for Preorder  
C/C++ Program for Linked complete binary tree & its creation  
C/C++ Program for Ternary Search Tree  
C/C++ Program for Segment Tree | Set 1 (Sum of given range)  
C/C++ Program for Segment Tree | Set 2 (Range Minimum Query)  
C/C++ Program for Dynamic Programming | Set 26 (Largest Independent Set Problem)  
C/C++ Program for Iterative Postorder Traversal | Set 1 (Using Two Stacks)  
C/C++ Program for Iterative Postorder Traversal | Set 2 (Using One Stack)  
C/C++ Program for Find if there is a triplet in a Balanced BST that adds to zero  
C/C++ Program for Find a pair with given sum in a Balanced BST  
C/C++ Program for Reverse Level Order Traversal  
C/C++ Program for Construct Complete Binary Tree from its Linked List Representation  
C/C++ Program for Remove BST keys outside the given range  
C/C++ Program for Convert a given Binary Tree to Doubly Linked List | Set 1  
C/C++ Program for B-Tree | Set 1 (Introduction)  
C/C++ Program for B-Tree | Set 2 (Insert)  
C/C++ Program for Longest prefix matching – A Trie based solution in Java  
C/C++ Program for Tree Isomorphism Problem  
C/C++ Program for Find all possible interpretations of an array of digits  
C/C++ Program for Iterative Method to find Height of Binary Tree  
C/C++ Program for Custom Tree Problem  
C/C++ Program for Check for Identical BSTs without building the trees  
C/C++ Program for Convert a given Binary Tree to Doubly Linked List | Set 2  
C/C++ Program for Print ancestors of a given binary tree node without recursion  
C/C++ Program for Difference between sums of odd level and even level nodes of a Binary Tree  
C/C++ Program for Print Postorder traversal from given Inorder and Preorder traversals  
C/C++ Program for Find depth of the deepest odd level leaf node



C/C++ Program for Check if all leaves are at same level  
C/C++ Program for Print Left View of a Binary Tree  
C/C++ Program for B-Tree | Set 3 (Delete)  
C/C++ Program for Add all greater values to every node in a given BST  
C/C++ Program for Remove all nodes which don't lie in any path with sum  $\geq k$   
C/C++ Program for Extract Leaves of a Binary Tree in a Doubly Linked List  
C/C++ Program for Deepest left leaf node in a binary tree  
C/C++ Program for Find next right node of a given key  
C/C++ Program for Splay Tree | Set 1 (Search)  
C/C++ Program for Splay Tree | Set 2 (Insert)  
C/C++ Program for Sum of all the numbers that are formed from root to leaf paths  
C/C++ Program for Red-Black Tree | Set 1 (Introduction)  
C/C++ Program for Red-Black Tree | Set 2 (Insert)  
C/C++ Program for Convert a given Binary Tree to Doubly Linked List | Set 3  
C/C++ Program for Print all nodes that don't have sibling  
C/C++ Program for Lowest Common Ancestor in a Binary Tree | Set 1  
C/C++ Program for Find distance between two given keys of a Binary Tree  
C/C++ Program for Print all nodes that are at distance k from a leaf node  
C/C++ Program for Check if a given Binary Tree is height balanced like a Red-Black Tree  
C/C++ Program for Interval Tree  
C/C++ Program for Print a Binary Tree in Vertical Order | Set 1  
C/C++ Program for Print all nodes at distance k from a given node  
C/C++ Program to find the maximum path sum between two leaves of a binary tree

#### **Graph C/C++ Programs:**

C/C++ Program for Depth First Traversal for a Graph  
C/C++ Program for Breadth First Traversal for a Graph  
C/C++ Program for Detect Cycle in a Directed Graph  
C/C++ Program for Find if there is a path between two vertices in a directed graph  
C/C++ Program for Hamiltonian Cycle Detection  
C/C++ Program for Dynamic Programming | Set 16 (Floyd Warshall Algorithm)  
C/C++ Program for Find the number of islands  
C/C++ Program for Union-Find Algorithm | Set 1 (Detect Cycle in a an Undirected Graph)  
C/C++ Program for Union-Find Algorithm | Set 2 (Union By Rank and Path Compression)  
C/C++ Program for Greedy Algorithms | Set 2 (Kruskal's Minimum Spanning Tree Algorithm)  
C/C++ Program for Graph and its representations  
C/C++ Program for Greedy Algorithms | Set 5 (Prim's Minimum Spanning Tree (MST))  
C/C++ Program for Greedy Algorithms | Set 6 (Prim's MST for Adjacency List Representation)  
C/C++ Program for Greedy Algorithms | Set 7 (Dijkstra's shortest path algorithm)  
C/C++ Program for Greedy Algorithms | Set 8 (Dijkstra's Algorithm for Adjacency List Representation)  
C/C++ Program for Dynamic Programming | Set 23 (Bellman-Ford Algorithm)  
C/C++ Program for Transitive closure of a graph  
C/C++ Program for Check whether a given graph is Bipartite or not  
C/C++ Program for Topological Sorting  
C/C++ Program for Shortest Path in Directed Acyclic Graph  
C/C++ Program for Strongly Connected Components  
C/C++ Program for Articulation Points (or Cut Vertices) in a Graph

C/C++ Program for Bridges in a graph  
C/C++ Program for Biconnected graph  
C/C++ Program for Connectivity in a directed graph  
C/C++ Program for Eulerian path and circuit  
C/C++ Program for Ford-Fulkerson Algorithm for Maximum Flow Problem  
C/C++ Program for Maximum Bipartite Matching  
C/C++ Program for Find minimum s-t cut in a flow network  
C/C++ Program for Fleury's Algorithm for printing Eulerian Path or Circuit  
C/C++ Program for Longest Path in a Directed Acyclic Graph  
C/C++ Program for Find maximum number of edge disjoint paths between two vertices  
C/C++ Program for Detect cycle in an undirected graph  
C/C++ Program for Travelling Salesman Problem | Set 1 (Naive and Dynamic Programming)  
C/C++ Program for Travelling Salesman Problem | Set 2 (Approximate using MST)  
C/C++ Program for Johnson's algorithm for All-pairs shortest paths  
C/C++ Program for Graph Coloring | Set 1 (Introduction and Applications)  
C/C++ Program for Graph Coloring | Set 2 (Greedy Algorithm)  
C/C++ Program for Some interesting shortest path questions | Set 1  
C/C++ program to Reverse alternate levels of a perfect binary tree  
C/C++ program to transform a BST to greater sum tree

**Bit-Magic C/C++ Program:**

C/C++ Program for Next Power of 2  
C/C++ Program for Write an Efficient Method to Check if a Number is Multiple of 3  
C/C++ Program for Write a C program to find the parity of an unsigned integer  
C/C++ Program for Efficient way to multiply with 7  
C/C++ Program for Write one line C function to find whether a no is power of two  
C/C++ Program for Position of rightmost set bit  
C/C++ Program for Find the Number Occurring Odd Number of Times  
C/C++ Program for Check for Integer Overflow  
C/C++ Program for Little and Big Endian Mystery  
C/C++ Program for Write an Efficient C Program to Reverse Bits of a Number  
C/C++ Program for Count set bits in an integer  
C/C++ Program for Count number of bits to be flipped to convert A to B  
C/C++ Program for Find the two non-repeating elements in an array of repeating elements  
C/C++ Program for Rotate bits of a number  
C/C++ Program for Compute the minimum or maximum of two integers without branching  
C/C++ Program for Compute modulus division by a power-of-2-number  
C/C++ Program for Compute the integer absolute value (abs) without branching  
C/C++ Program for Find whether a given number is a power of 4 or not  
C/C++ Program for Turn off the rightmost set bit  
C/C++ Program for Multiply a given Integer with 3.5  
C/C++ Program for Add 1 to a given number  
C/C++ Program for Optimization Techniques | Set 1 (Modulus)  
C/C++ Program for Next higher number with same number of set bits  
C/C++ Program for Program to count number of set bits in an (big) array  
C/C++ Program for A Boolean Array Puzzle  
C/C++ Program for Smallest of three integers without comparison operators

C/C++ Program for Add two numbers without using arithmetic operators  
C/C++ Program for Swap bits in a given number  
C/C++ Program for Count total set bits in all numbers from 1 to n  
C/C++ Program for Detect if two integers have opposite signs  
C/C++ Program for Find the element that appears once  
C/C++ Program for Binary representation of a given number  
C/C++ Program for Write your own strcmp that ignores cases  
C/C++ Program for Add two bit strings  
C/C++ Program for Swap all odd and even bits  
C/C++ Program for Find position of the only set bit  
C/C++ Program for Divide and Conquer | Set 4 (Karatsuba algorithm for fast multiplication)  
C/C++ Program for How to swap two numbers without using a temporary variable?  
C/C++ Program for Check if a number is multiple of 9 using bitwise operators

### **C/C++ Mathematical Programs**

C/C++ Program for Write an Efficient Method to Check if a Number is Multiple of 3  
C Program to print first n Fibonacci Numbers  
C program to find area of a circle  
C program to find area of a triangle  
C program to calculate the value of nPr  
C Program to find sum of series  $1 + 1/2 + 1/3 + 1/4 + .. + 1/n$   
C/C++ Program for Efficient way to multiply with 7  
C/C++ Program for Write a C program to print all permutations of a given string  
C/C++ Program for Lucky Numbers  
C/C++ Program for Write a program to add two numbers in base 14  
C/C++ Program for Babylonian method for square root  
C/C++ Program for Multiply two integers without using multiplication, division and bitwise operators, and no loops  
C/C++ Program for Print all combinations of points that can compose a given number  
C/C++ Program for Write you own Power without using multiplication(\*) and division(/) operators  
C/C++ Program for Fibonacci numbers  
C/C++ Program for Average of a stream of numbers  
C/C++ Program for Check whether a given point lies inside a triangle or not  
C/C++ Program for Count numbers that don't contain 3  
C/C++ Program for Magic Square  
C/C++ Program for Sieve of Eratosthenes  
C/C++ Program for Find day of the week for a given date  
C/C++ Program for DFA based division  
C/C++ Program for Generate integer from 1 to 7 with equal probability  
C/C++ Program for Given a number, find the next smallest palindrome  
C/C++ Program for Make a fair coin from a biased coin  
C/C++ Program for Check divisibility by 7  
C/C++ Program for Find the largest multiple of 3  
C/C++ Program for Lexicographic rank of a string  
C/C++ Program for Print all permutations in sorted (lexicographic) order  
C/C++ Program for Shuffle a given array  
C/C++ Program for Space and time efficient Binomial Coefficient  
C/C++ Program for Reservoir Sampling

C/C++ Program for Pascal's Triangle  
C/C++ Program for Select a random number from stream, with  $O(1)$  space  
C/C++ Program for Find the largest multiple of 2, 3 and 5  
C/C++ Program for Efficient program to calculate  $e^x$   
C/C++ Program for Measure one litre using two vessels and infinite water supply  
C/C++ Program for Efficient program to print all prime factors of a given number  
C/C++ Program for Print all possible combinations of  $r$  elements in a given array of size  $n$   
C/C++ Program for Random number generator in arbitrary probability distribution fashion  
C/C++ Program for How to check if two given line segments intersect?  
C/C++ Program for How to check if a given point lies inside or outside a polygon?  
C/C++ Program for Convex Hull | Set 1 (Jarvis's Algorithm or Wrapping)  
C/C++ Program for Convex Hull | Set 2 (Graham Scan)  
C/C++ Program for How to check if a given number is Fibonacci number?  
C/C++ Program for Russian Peasant Multiplication  
C Program to Draw a circle without floating point arithmetic  
C++ Program to print all palindromes in a given range  
**C/C++ Dynamic Programming Programs**  
C/C++ Program for Largest Sum Contiguous Subarray  
C/C++ Program for Ugly Numbers  
C/C++ Program for Maximum size square sub-matrix with all 1s  
C/C++ Program for Program for Fibonacci numbers  
C/C++ Program for Overlapping Subproblems Property  
C/C++ Program for Optimal Substructure Property  
C/C++ Program for Longest Increasing Subsequence  
C/C++ Program for Longest Common Subsequence)  
C/C++ Program for Edit Distance  
C/C++ Program for Min Cost Path  
C/C++ Program for Length of the longest substring without repeating characters  
C/C++ Program for Minimum number of jumps to reach end  
C/C++ Program for Coin Change)  
C/C++ Program for Matrix Chain Multiplication  
C/C++ Program for Binomial Coefficient  
C/C++ Program for 0-1 Knapsack Problem  
C/C++ Program for Egg Dropping Puzzle  
C/C++ Program for Longest Palindromic Subsequence  
C/C++ Program for Cutting a Rod  
C/C++ Program for Maximum Sum Increasing Subsequence  
C/C++ Program for Longest Bitonic Subsequence  
C/C++ Program for Floyd Warshall Algorithm  
C/C++ Program for Palindrome Partitioning  
C/C++ Program for Partition problem  
C/C++ Program for Word Wrap Problem  
C/C++ Program for Maximum Length Chain of Pairs  
C/C++ Program for Box Stacking Problem  
C/C++ Program for Longest Palindromic Substring  
C/C++ Program for Bellman-Ford Algorithm  
C/C++ Program for Optimal Binary Search Tree  
C/C++ Program for Subset Sum Problem

C/C++ Program for Largest Independent Set Problem  
C/C++ Program for Maximum sum rectangle in a 2D matrix  
C/C++ Program for Minimum insertions to form a palindrome  
C/C++ Program for Longest Common Substring  
C/C++ Program for Dice Throw  
C/C++ Program for Optimal Strategy for a Game  
C/C++ Program for Word Break Problem  
C/C++ Program for Find if a string is interleaved of two other strings  
C/C++ Program for Assembly Line Scheduling  
C/C++ Program for Longest Arithmetic Progression  
C/C++ Program for Maximum Product Cutting  
C/C++ Program for Count all possible paths from top left to bottom right of a mXn matrix

### **C/C++ Greedy Algorithm Programs**

C/C++ Program Activity Selection Problem  
C/C++ Program Kruskal's Minimum Spanning Tree Algorithm  
C/C++ Program for Huffman Coding  
C/C++ Program for Efficient Huffman Coding for Sorted Input  
C/C++ Program for Prim's Minimum Spanning Tree (MST)  
C/C++ Program for Prim's MST for Adjacency List Representation  
C/C++ Program for Dijkstra's shortest path algorithm  
C/C++ Program for Dijkstra's Algorithm for Adjacency List Representation  
C/C++ Program for Graph Coloring  
C/C++ Program for Rearrange a string so that all same characters become d distance away

### **C/C++ Backtracking Programs**

C/C++ Program to print all permutations of a given string  
C/C++ Program The Knight's tour problem  
C/C++ Program for Rat in a Maze  
C/C++ Program for N Queen Problem  
C/C++ Program for Subset Sum  
C/C++ Program for m Coloring Problem  
C/C++ Program for Hamiltonian Cycle  
C/C++ Program for Sudoku  
C/C++ Program for Tug of War  
C/C++ Program for (Solving Cryptarithmic Puzzles

### **C/C++ Divide and Conquer Programs:**

C/C++ Program for Write a C program to calculate pow(x,n)  
C/C++ Program for Median of two sorted arrays  
C/C++ Program for Count Inversions in an array  
C/C++ Program for Check for Majority Element in a sorted array  
C/C++ Program for Maximum and minimum of an array using minimum number of comparisons  
C/C++ Program for Program to count number of set bits in an (big) array  
C/C++ Program for Count the number of occurrences in a sorted array  
C/C++ Program for Find a Fixed Point in a given array  
C/C++ Program for Find the maximum element in an array which is first increasing and then decreasing  
C/C++ Program for Median of two sorted arrays of different sizes  
C/C++ Program for Closest Pair of Points

C/C++ Program for Maximum Subarray Sum  
C/C++ Program for Largest Rectangular Area in a Histogram  
C/C++ Program for Karatsuba algorithm for fast multiplication)  
C/C++ Program for Find a peak element  
C/C++ Program for Find the point where a monotonically increasing function becomes positive first time  
C/C++ Program for Find the minimum element in a sorted and rotated array  
C/C++ Program for Closest Pair of Points |  $O(n \log n)$  Implementation

#### **C/C++ String Searching Programs:**

C/C++ Program for Naive Pattern Searching  
C/C++ Program for KMP Algorithm  
C/C++ Program for Rabin-Karp Algorithm  
C/C++ Program for A Naive Pattern Searching Question  
C/C++ Program for Finite Automata  
C/C++ Program for Efficient Construction of Finite Automata  
C/C++ Program for Boyer Moore Algorithm – Bad Character Heuristic  
C/C++ Program for String matching where one string contains wildcard characters  
C/C++ Program for Suffix Array

#### **C/C++ Geometric Algorithm Programs:**

C/C++ Program for How to check if two given line segments intersect?  
C/C++ Program for How to check if a given point lies inside or outside a polygon?  
C/C++ Program for Convex Hull | (Jarvis's Algorithm or Wrapping)  
C/C++ Program for Convex Hull | (Graham Scan)  
C/C++ Program for Given n line segments, find if any two segments intersect  
C/C++ Program for Closest Pair of Points |  $O(n \log n)$  Implementation  
C/C++ Program for Find if two rectangles overlap

#### **C/C++ Misc Programs:**

C Program to print environment variable  
C Program for Tower of Hanoi  
C Program to print Floyd's triangle  
C Program to Swap two Numbers  
C program swap two numbers without using a temporary variable  
C Program to check if a given year is leap year  
C Program to sum the digits of a given number in single statement?  
C program to print numbers from 1 to 100 without using loop?  
C Program to print contents of file  
C program to copy contents of one file to another file  
C Program to list all files and sub-directories in a directory  
C program to delete a file  
C Program to merge contents of two files into a third file  
C Program to count number of lines in a file  
C/C++ Program for Check if a number is Palindrome  
C/C++ Program for Print all possible combinations of r elements in a given array of size n  
C/C++ Program for Print all possible strings of length k that can be formed from a set of n characters  
C/C++ Program to Find Excel column name from a given column number  
C/C++ Program to Find next greater number with same set of digits  
C/C++ Program to Count Possible Decodings of a given Digit Sequence  
C/C++ Program to calculate the angle between hour hand and minute hand

