

1. Using a sparse matrix to represent a social network, write a program to find and display mutual friends between two specific users.
2. Write C++ program to maintain club member 's infmation using singly linked lists. Ste student PRN, Name and A.Y. Write functions to: Add the members as well as both codinats
3. Using a sparse matrix to represent a social network, write a program to find and display mutual friends between two specific users.
4. Write C++ program to maintain club member 's infmation using singly linked lists. Ste student PRN, Name and A.Y. Write functions to: delete the members as well as both codinats.
5. Write a program to suggest a new friend f a user by checking f common connections in a sparse matrix representation of a social network.
6. Write C++ program to maintain club member 's infmation using singly linked lists. Ste student PRN, Name and A.Y. Write functions to Compute the total number of members of the club
7. Write a program to represent a polynomial using an array, where each element of the array stes the coefficient and its corresponding power. Display the polynomial in standard fm.
8. Write C++ program to maintain club member 's infmation using singly linked lists. Ste student PRN, Name and A.Y. Write functions to: Display members.
9. Implement a program to add two polynomials represented using arrays and display the resultant polynomial.
10. Write C++ program to maintain club member 's infmation using singly linked lists. Write functions to: Display members.
11. Write a program to represent friendships in a social network using a sparse matrix. Display only the non-zero entries (friend connections).
12. Write C++ program f sting binary numbers using doubly linked lists. Write function to compute 1's complement
13. Write a program to evaluate the value of a polynomial at a given value of x using its array representation.
14. Write C++ program f sting binary numbers using Singly linked lists. Write function to Add two binary numbers.
15. Implement a program to add two polynomials represented using arrays and display the resultant polynomial.
16. Write C++ program to maintain club member 's infmation using singly linked lists. Ste student PRN, Name and A.Y. Write functions to: update the infmation f any of the number.
17. Write C++ program f sting binary numbers using doubly linked lists.
18. Write a C++ program to convert an infix expression (e.g.,  $A + B * C$ ) to a postfix expression using a stack. Display the postfix expression as the output.
19. Implement a C++ program that converts an infix expression to a postfix expression and then evaluates the resulting postfix expression. Test with simple expressions like  $3 + 5 * 2$ .
20. Write C++ program f sting binary numbers using doubly linked lists. Write function to compute 2's complement
21. Implement a function to search f a given value in a singly linked list.
22. Implement a queue using a linked list in C/C++ to store your friends names.
23. Write a C/C++ program to simulate job scheduling in an operating system using a queue.
24. Write a program to evaluate a postfix expression using a stack

25. Write a C/C++ program to implement a basic binary tree with functions f inserting nodes, displaying the tree in **inorder**
26. Write a C/C++ program to implement **Kruskal's Algorithm for given graph**  
(A, B, 1), (A, C, 3), (B, D, 4), (C, D, 2) (E, F, 2), (F, G, 3), (E, G, 5)
27. Write a C/C++ program to implement a basic binary tree with functions f inserting nodes, displaying the tree in **Postorder**.
28. Implement a circular queue using an array. and check whether the queue is full empty.
29. Write a C/C++ program to apply **Prim's Algorithm** on the following graph:  
(A, B, 6), (A, C, 1), (B, C, 4), (B, D, 3), (C, D, 5)
30. Write a program to evaluate a postfix expression using a stack
30. Write a C/C++ program to implement a basic binary tree with functions f inserting nodes, displaying the tree in **inorder**
31. Implement a function to search f a given value in a singly linked list
32. Create a program to manage a library system where books are represented as nodes in a linked list. Include operations to add recd.
33. Implement a circular queue using an array. and check whether the queue is full empty.
34. Write a C/C++ program to apply **Prim's Algorithm** on the following graph:  
(A, B, 6), (A, C, 1), (B, C, 4), (B, D, 3), (C, D, 5)
35. Write C++ program f sting binary numbers using doubly linked lists. Write function to compute 2's complement.
36. Convert a decimal number to its binary equivalent using a stack.
37. Implement a function to search f a given value in a singly linked list
38. Create a program to manage a library system where books are represented as nodes in a linked list. Include operations to add recd.
39. Implement a circular queue using an array. and check whether the queue is full empty.
40. Write a C/C++ program to apply **Prim's Algorithm** on the following graph:  
(A, B, 6), (A, C, 1), (B, C, 4), (B, D, 3), (C, D, 5)
41. Implement a circular queue using an array. and check whether the queue is full empty.
42. Implement **Dijkstra's Algorithm** to find the **shortest path** from a starting node to all other nodes in the following weighted graph:  
A -> (B, 4), (C, 2)  
B -> (A, 4), (C, 5), (D, 10)  
C -> (A, 2), (B, 5), (D, 3)  
D -> (B, 10), (C, 3) Find the shortest path from node **A** to all other nodes and print the distances.
43. Implement a function to search f a given value in a singly linked list
44. Create a program to manage a library system where books are represented as nodes in a linked list. Include operations to add recd.
45. Implement a circular queue using an array. and check whether the queue is full empty.
46. Write a C/C++ program to apply **Prim's Algorithm** on the following graph:  
47. (A, B, 6), (A, C, 1), (B, C, 4), (B, D, 3), (C, D, 5)
48. Implement a function to count no of nodes in a singly linked list
49. Implement **Dijkstra's Algorithm** to find the **shortest path** from a starting node to all other nodes in the following weighted graph:  
A -> (B, 4), (C, 2)  
B -> (A, 4), (C, 5), (D, 10)  
C -> (A, 2), (B, 5), (D, 3)  
D -> (B, 10), (C, 3) Find the shortest path from node **A** to all other nodes and print the distances.

50. Write a program to evaluate a postfix expression using a stack
51. Create a program to manage a library system where books are represented as nodes in a linked list. Include operations to add recd.
52. Write a program that uses a stack to check whether parentheses in a given expression are balanced. The expression can include parentheses (), curly braces {}, and square brackets [].
53. Write a C/C++ program to apply **Prim's Algorithm** on the following graph:  
(A, B, 6), (A, C, 1), (B, C, 4), (B, D, 3), (C, D, 5)
54. Implement a to-do list application using a singly linked list. Include options to add tasks
55. Implement **Dijkstra's Algorithm** to find the **shortest path** from a starting node to all other nodes in the following weighted graph:  
A -> (B, 4), (C, 2)  
B -> (A, 4), (C, 5), (D, 10)  
C -> (A, 2), (B, 5), (D, 3)  
D -> (B, 10), (C, 3) Find the shortest path from node **A** to all other nodes and print the distances.
56. Write a program to check if parentheses in a given expression are balanced using a stack.
57. Create a program to manage a library system where books are represented as nodes in a linked list. Include operations to add recd.
58. Develop a program to sort product names alphabetically using Bubble Sort
59. Write a C/C++ program to apply **Prim's Algorithm** on the following graph:  
(A, B, 6), (A, C, 1), (B, C, 4), (B, D, 3), (C, D, 5)
60. Simulate a bank queue where customers are served in the der they arrive. Implement enqueue and dequeue operations.
61. Implement **Dijkstra's Algorithm** to find the **shortest path** from a starting node to all other nodes in the following weighted graph:  
A -> (B, 4), (C, 2)  
B -> (A, 4), (C, 5), (D, 10)  
C -> (A, 2), (B, 5), (D, 3)  
D -> (B, 10), (C, 3) Find the shortest path from node **A** to all other nodes and print the distances.
62. Write a C/C++ program to perform **Binary Search** recursively on a Sorted array of integers. The program should return the index of the element if found print "Element not found".
63. Create a program to manage a library system where books are represented as nodes in a linked list. Include operations to add recd.
64. Given the following set of numbers, insert them one by one into a **Binary Search Tree (BST)**: 50, 30, 20, 40, 70, 60, 80
65. Write a C/C++ program to apply **Prim's Algorithm** on the following graph:  
(A, B, 6), (A, C, 1), (B, C, 4), (B, D, 3), (C, D, 5)
66. Write a C/C++ program to implement **Linear Search**. Given an array of integers, search a specific value entered by the user and print the index of the element if found, otherwise print "Element not found"
67. Implement **Dijkstra's Algorithm** to find the **shortest path** from a starting node to all other nodes in the following weighted graph:  
A -> (B, 4), (C, 2)  
B -> (A, 4), (C, 5), (D, 10)  
C -> (A, 2), (B, 5), (D, 3)

D -> (B, 10), (C, 3) Find the shortest path from node **A** to all other nodes and print the distances.

68. Write a C/C++ program to perform **Binary Search** recursively on sorted array of integers. The program should return the index of the element if found print "Element not found".
69. Create a program to manage a library system where books are represented as nodes in a linked list. Include operations to add recd.