

-  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
- 31.** Write a C/C++ program to implement a basic binary tree with functions f inserting nodes, displaying the tree in **inorder**
- 32.** Implement a function to search f a given value in a singly linked list
- 33.** Create a program to manage a library system where books are represented as nodes in a linked list. Include operations to add recd.
- 34.** Implement a circular queue using an array. and check whether the queue is full empty.
- 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.