

Problems on Linked List

1. What Is a Linked List? Explain Its Types.
2. What Are the Advantages and Disadvantages of Linked Lists?
3. How Does a Linked List Differ from an Array?
4. Write a program in C to create and display a Singly Linked List.

Test Data :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 6

Input data for node 3 : 7

Expected Output :

Data entered in the list :

Data = 5

Data = 6

Data = 7

5. Write a program in C to create a singly linked list of n nodes and display it in reverse order.

Test Data :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 6

Input data for node 3 : 7

Expected Output :

Data entered in the list are :

Data = 5

Data = 6

Data = 7

The list in reverse are :

Data = 7

Data = 6

Data = 5

6. Write a program in C to create a singly linked list of n nodes and count the number of nodes.

Test Data :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 6

Input data for node 3 : 7

Expected Output :

Data entered in the list are :

Data = 5

Data = 6

Data = 7

Total number of nodes = 3

7. Write a program in C to insert a new node at the beginning of a Singly Linked List.

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 6

Input data for node 3 : 7

Data entered in the list are :

Data = 5

Data = 6

Data = 7

Input data to insert at the beginning of the list : 4

Data after inserted in the list are :

Data = 4

Data = 5

Data = 6

Data = 7

8. Write a program in C to insert a new node at the end of a Singly Linked List.

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 6

Input data for node 3 : 7

Data entered in the list are :

Data = 5

Data = 6

Data = 7

Input data to insert at the end of the list : 8

Data, after inserted in the list are :

Data = 5

Data = 6

Data = 7

Data = 8

9. Write a program in C to insert a node in the middle of a Singly Linked List.

Test Data and Expected Output :

Input the number of nodes (3 or more) : 4

Input data for node 1 : 1

Input data for node 2 : 2

Input data for node 3 : 3

Input data for node 4 : 4

Data entered in the list are :

Data = 1

Data = 2

Data = 3

Data = 4

Input data to insert in the middle of the list : 5

Input the position to insert new node : 3

Insertion completed successfully.

The new list are :

Data = 1

Data = 2

Data = 5

Data = 3

Data = 4