

Chapter 2. Linked Lists

1. Mention what Linked lists?

A linked list is a data structure that can store a collection of items. In other words, linked lists can be utilized to store several objects of the same type. Each unit or element of the list is referred to as a node. Each node has its own data and the address of the next node. It is like a chain. Linked Lists are used to create graphs and trees.

2. What type of memory allocation is referred to for Linked lists?

Dynamic memory allocation is referred for Linked lists.

3. Mention what is traversal in linked lists?

Term Traversal is used to refer to the operation of processing each element in the list.

4. Describe what is Node in the link list? And name the types of Linked Lists?

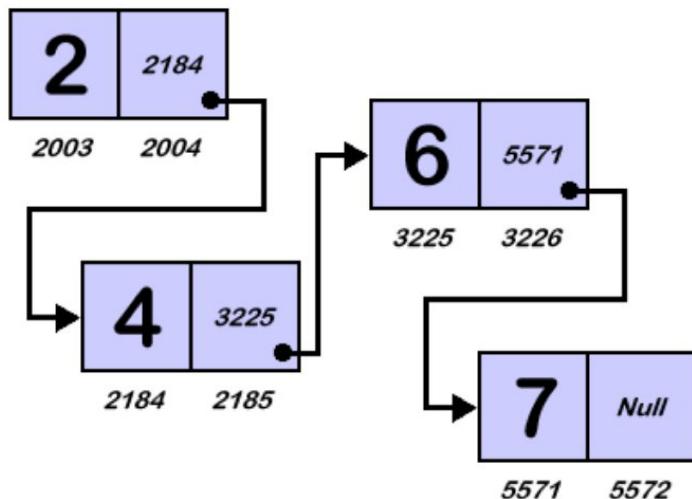
Together (data + link) is referred to as the Node.

Types of Linked Lists are,

- Singly Linked List
- Doubly Linked List
- Multiply Linked List
- Circular Linked List

5. What is a Singly Linked list?

Singly Linked lists are a type of [data structure](#). In a singly linked list, each node in the list stores the contents of the node and a reference or pointer to the next node in the list. It does not store any reference or pointer to the previous node.



6. What is the difference between Linear [Array](#) and Linked List?

Arrays

Linked List

Deletion and Insertions are difficult.	Deletion and Insertions can be done easily.
For insertion and deletion, it needs movements	or insertion and deletion, it does not require movement of nodes
In it space is wasted	In it space is not wasted
It is expensive	It is not expensive

It cannot be reduced or extended according to requirements	It can be reduced or extended according to requirements
To avail each element the same amount of time is required.	To avail each element a different amount of time is required.
In consecutive memory locations elements are stored.	Elements may or may not be stored in consecutive memory locations
We can reach there directly if we have to go to a particular element	To reach a particular node, you need to go through all those nodes that come before that node.

7. Mention what are the applications of Linked Lists?

Applications of Linked Lists are,

- Linked lists are used to implement queues, stacks, graphs, etc.
- In Linked Lists you don't need to know the size in advance.
- Linked lists let you insert elements at the beginning and end of the list.

8. Mention what is the difference between singly and doubly linked lists?

A doubly linked list nodes contain three fields:

- An integer value and
- Two links to other nodes
- one to point to the previous node and
- other to point to the next node.

Whereas a singly linked list contains points only to the next node.

9. Mention what are the applications that use Linked lists?

Both queues and stacks are often implemented using linked lists. Other applications are list, binary tree, skip, unrolled linked list, hash table, etc.

10. Mention what is the biggest advantage of linked lists?

The biggest benefit of linked lists is that you do not specify a fixed size for your list. The more elements you add to the chain, the bigger the chain gets.