Singly Linked List Implementation

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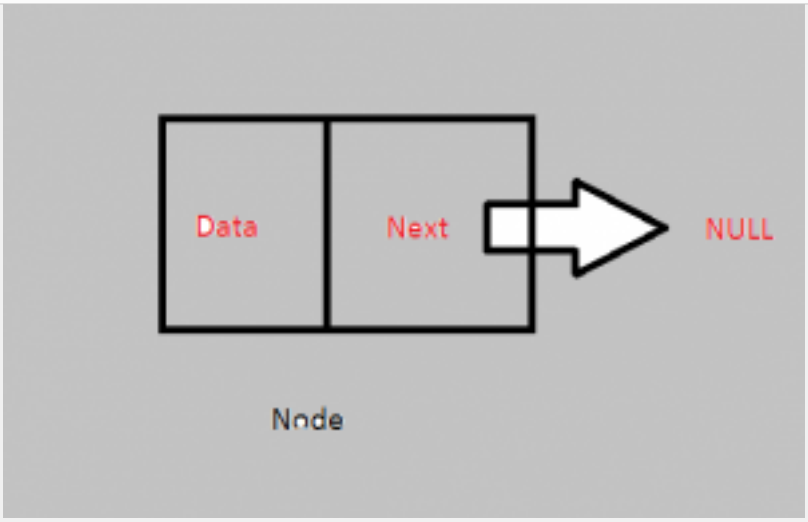
Linked List– As the name suggests it's a list which is linked.

- Linked List consist of Nodes

Nodes are nothing but objects of a class and each node has data and a link to the next node.

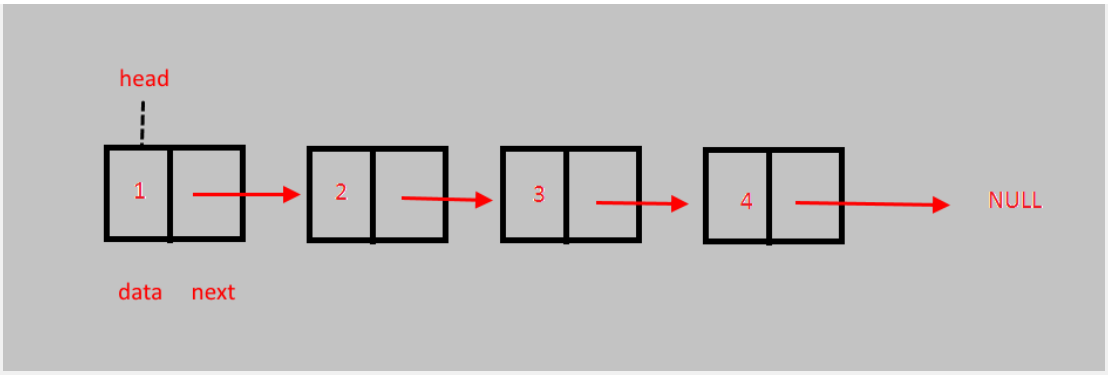
```
class Node {
	public int data;
	public Node next;

	public Node(int data) {
		this.data = data;
		this.next = null;
	}
}
```



Node

- The last node in the list points to NULL , so when you reach there you will know that the list ends here.



Linked List

Operations:

Add at the Start : Add a node the beginning of the linked list. Its O(1).

Add at the End : Add a node at the end of the linked list. its O(n) since to add a node at the end you need to go till the end of the array.

Delete at the Start : Delete a node from beginning of the linked list. Its O(1).

Delete at the End : Delete a node from the end of the linked list. its O(n) since to delete a node at the end you need to go till the end of the array.

Get Size: returns the size of the linked list.

Get Element at Index : Return the element at specific index, if index is greater than the size then return –1. its O(n) in worst case.

Add Element at Specific Index : Add element at specific index. If index is greater than size then print "INVALID POSITION". Worst case its O(n)

Display(): Prints the entire linked list. O(n).