**Linked List**

***Way to maintain a list in memory***

**Array**

**Linked List**

**Introduction:**

**A linked list is a sequence of data structure, where each elements/nodes/items are connected together via link.**

**Application of Linked List:**

* **Dynamic memory allocation (Allocating memory at run time).**
* **Implemented in stack and queue.**
* **In undo functionality at software.**
* **Hase table graphs.**
* **With the help of linked list, the polynomials can be represented as well as we can perform operation on polynomial.**
* **Linked list can be used to represent the sparese matrix.**

***Disadvantages of Linked List:***

* **In case linked list, random access is not allowed. We have to access sequentially starting from first node. So we cannot do binary search.**
* **Extra memory space for a pointer is required to point other node.**
* **Linked list is not cache friendly. Since array elements are contiguous locations, there is locality of reference which is not there in case of linked list.**

**Note:**

* **In C, we can represent a node using structure.**

struct node

{

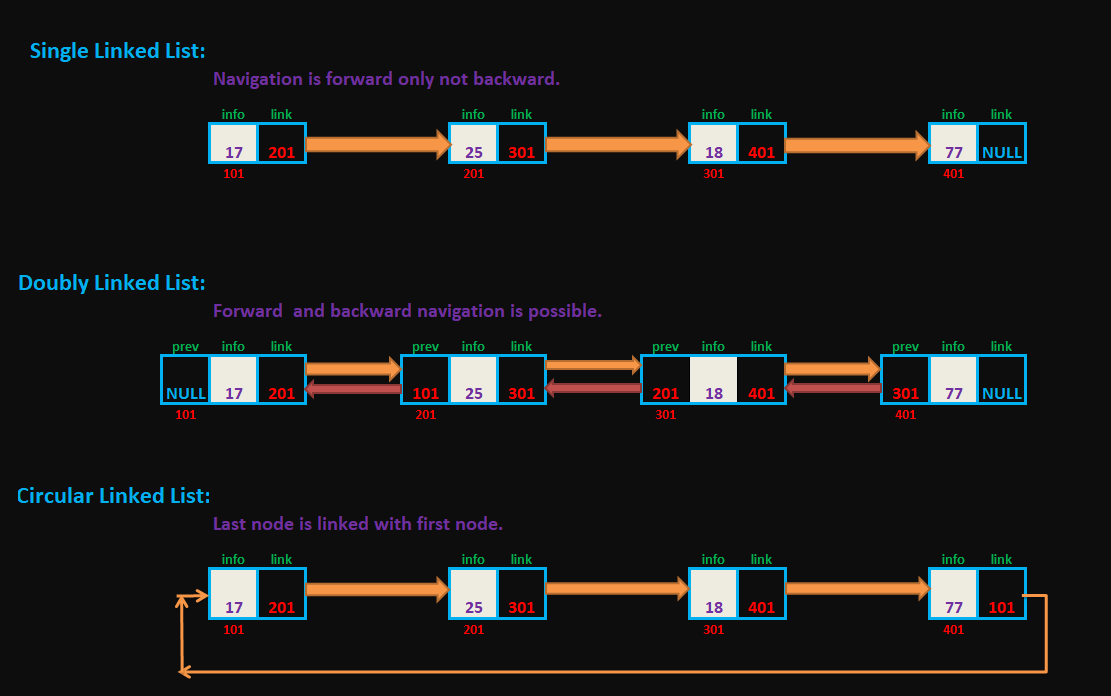
    int info;

    struct node\* link;

};

* **In C++, java, C#, linked list can be represented as a class (node as a separate class).Linked list class contains a reference of node class type.**

**Types of Linked List:**

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