Linked List

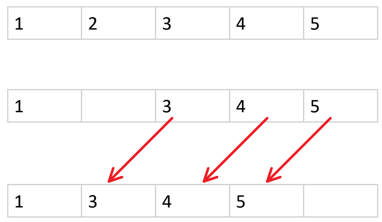
28 May 2020 21:24

H.W:
1. Create your own LL and implement these functions
2. Count number of nodes in a linked List. (Length of a LL)
3. Print using functions only
4. Insert at nth position
5. Push all this to your GitHub repo

Insertion
Deletion
Retrieve(Accessing)
Searching

Disadvantages of array:
1. Fixed Size
2. Costly insertion(when array full)
3. Costly Deletion O(n)

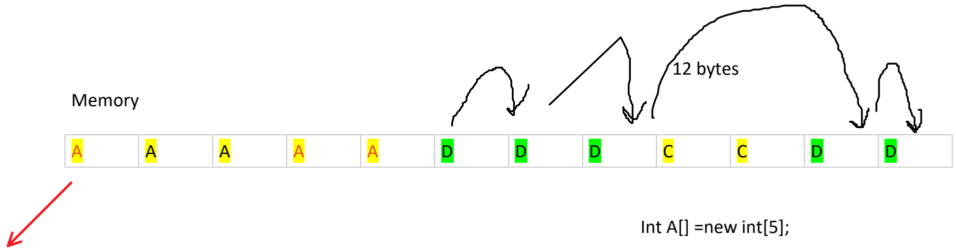
Delete 2



1	2	3	4	5

1		3	4	5

1	3	4	5	



A	A	A	A	A	D	D	D	C	C	D	D

Let us suppose this thing is 4bytes(32 dabbe ikaththe) -int ka size

Int A[] =new int[5];

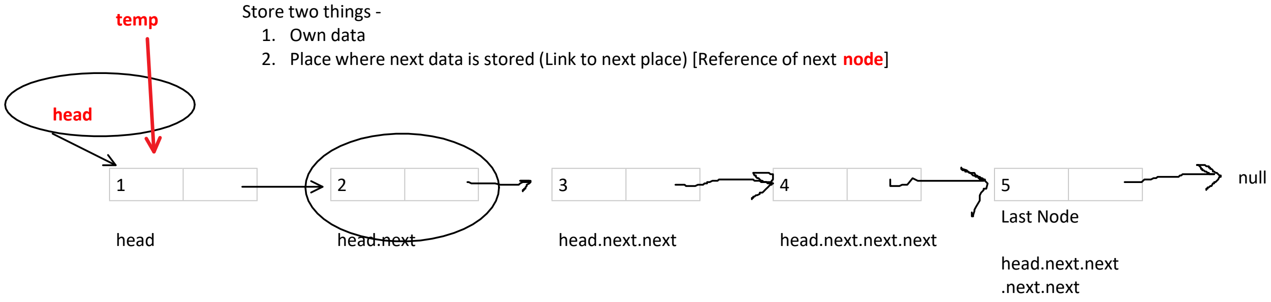
Int c[] = new int[2]

Int d[]=new int[5];

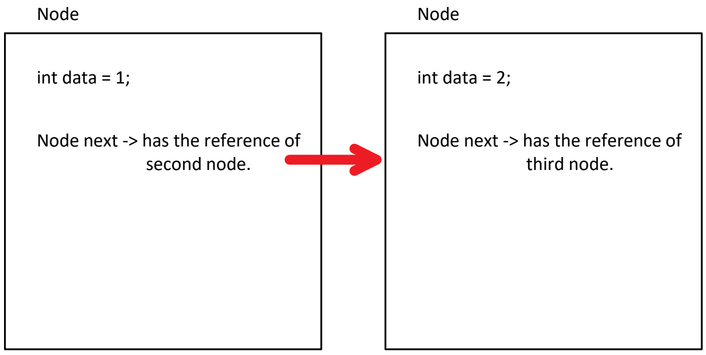
Array requires contiguous memory allocation

We wanted non-contiguous memory allocation to save memory from being wasted

Solution offered:
Store two things -
1. Own data
2. Place where next data is stored (Link to next place) [Reference of next **node**]



Only head is enough to traverse the complete list.



Node

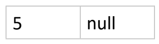
int data = 1;

Node next -> has the reference of second node.

Node

int data = 2;

Node next -> has the reference of third node.

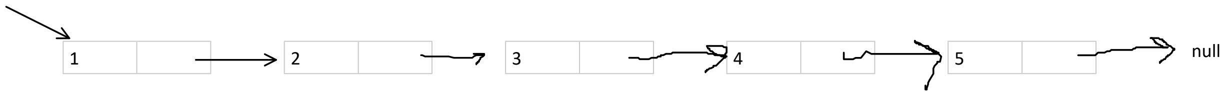


5	null

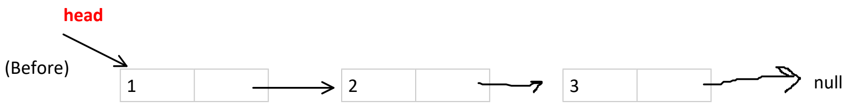
Insertion in a Linked List:

1. Insertion at the beginning(head)
2. Insertion at end
3. Insertion at nth position

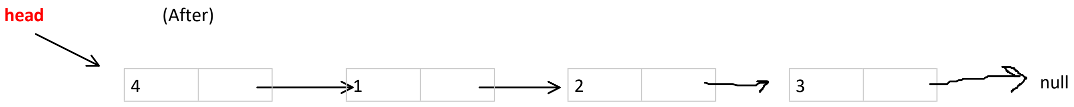
head



1. Insertion at head

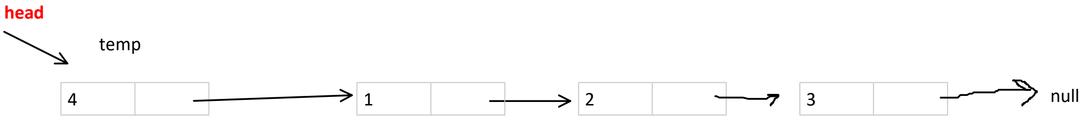


insertAtHead(4)

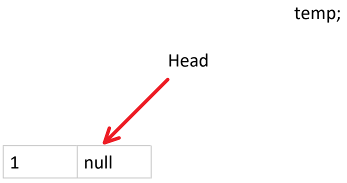


Brahmastra: Draw the intermediate steps and achieve one by one

1st step: Create a new Node
2nd step: Create the required link
3rd step: Refer head to whatever needed



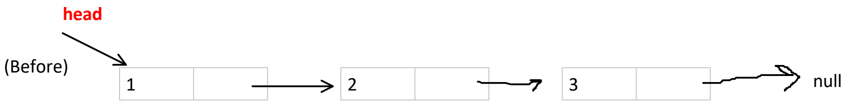
2nd step:
temp.next=head;
Head=temp;



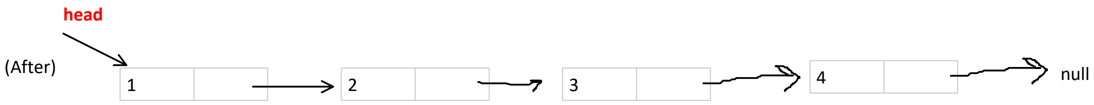
Missed case:

What if the linked list is empty initially???
This case has been automatically handled by our code

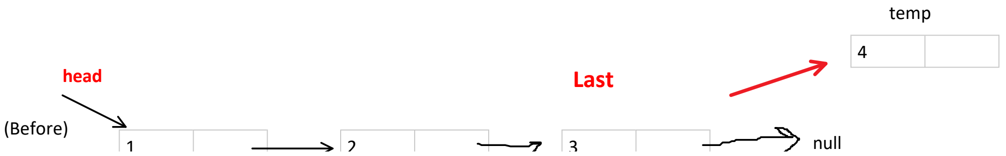
2. Insertion at end

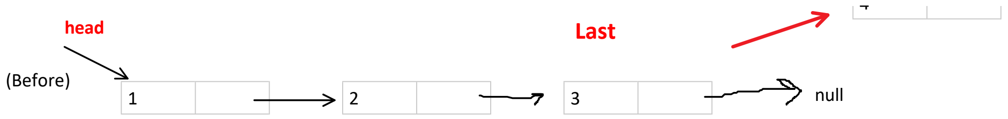


insertAtEnd(4)



Brahmastra



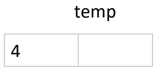


Last node property:
Next of last node is null

1. Node creation
2. Go to Last Node
3. Last.next=temp

Missed case:

What if the linked list is empty initially???
In this scenario, we w
In this scenario, we will have to handle this case.



How will we come to know that linked list is empty????
head==null