C, C++, DSA in depth

Singly linked list

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Agenda

1. what is a list?
2. what is a node
3. Singly linked list
4. SLL ADT
5. Array vs Dynamic Array vs SLL

What is a list?

List is a linear collection of data items also known as **List Item**

Example 1

Marks of tests / List of marks

20, 25, 31, 28, 40, 35, 50, 42. . . . .

List Item → int

Example 2

List of guests

"Gupta", "Dubey", "Ahuja", "Raikwar", "Khan"...

List Item → char array or string

Example 3

List of Students

List Item → Student

101	102	103	104	
"Rahul"	"Deepti"	"Ravi"	"Suraj"	...
16	17	16	18	

What is a node?

int *P1, *P2

~~int item;~~

P1 = new int;

node
int *start

P1   P2

| 20 | 25 | 31 | 28 |
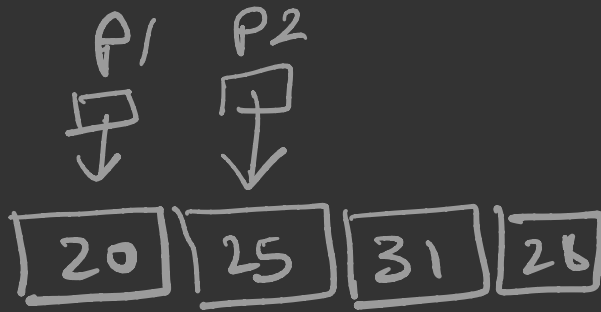
struct node
{
    int item;
    node *next;
};

| start | | item next | | item next | | item next |

20   X
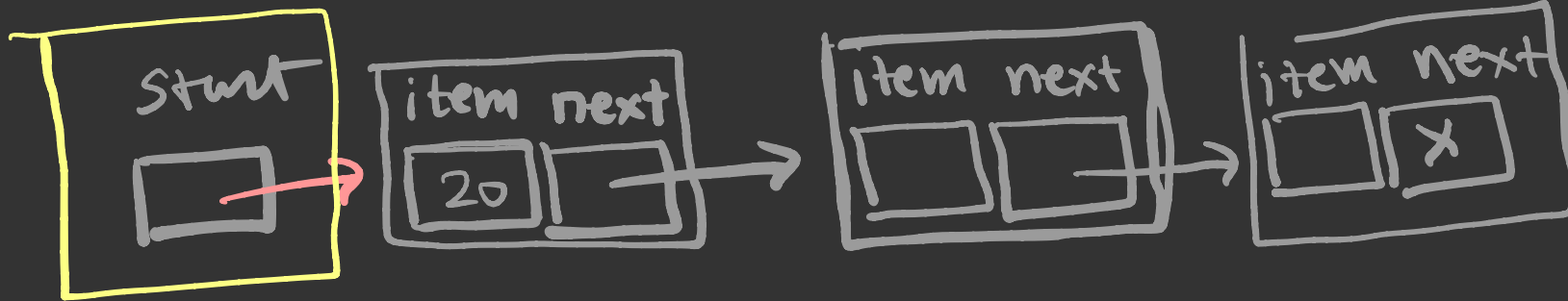
Singly Linked List

Singly Linked List

class SLL
{

  node * start;

};

Insertion
① at the beginning of list
② as a last node
③ after a node

Deletion
① first node
② second node
③ particular node

SLL ADT

```
class SLL
{


};
```

Constructer
Copy constructer
Copy assignment operator
insert At Start()
insert At Last()
insert After()
delete first()
delete Last()
delete Node()
edit()
search()
count()
destructer

Array vs Dynamic Array vs SLL

H.W