

you have to store details of all students / batchmate?

Name, phone number, roll no., GPA.

But data structure to store?

- ① Array →
- ② Map →
- ③ Stack →
- ④ Vector < vector > →
- ⑤ Class / struct → Create a new data type.
→ Encapsulate all related entities

<https://replit.com/join/pctxcviw-rahulgrover1>

string name
string phone
string rollno
float GPA

```
struct StudentInfo {
    string name;
    string phone;
    string rollno;
    float GPA;
}
```

z;

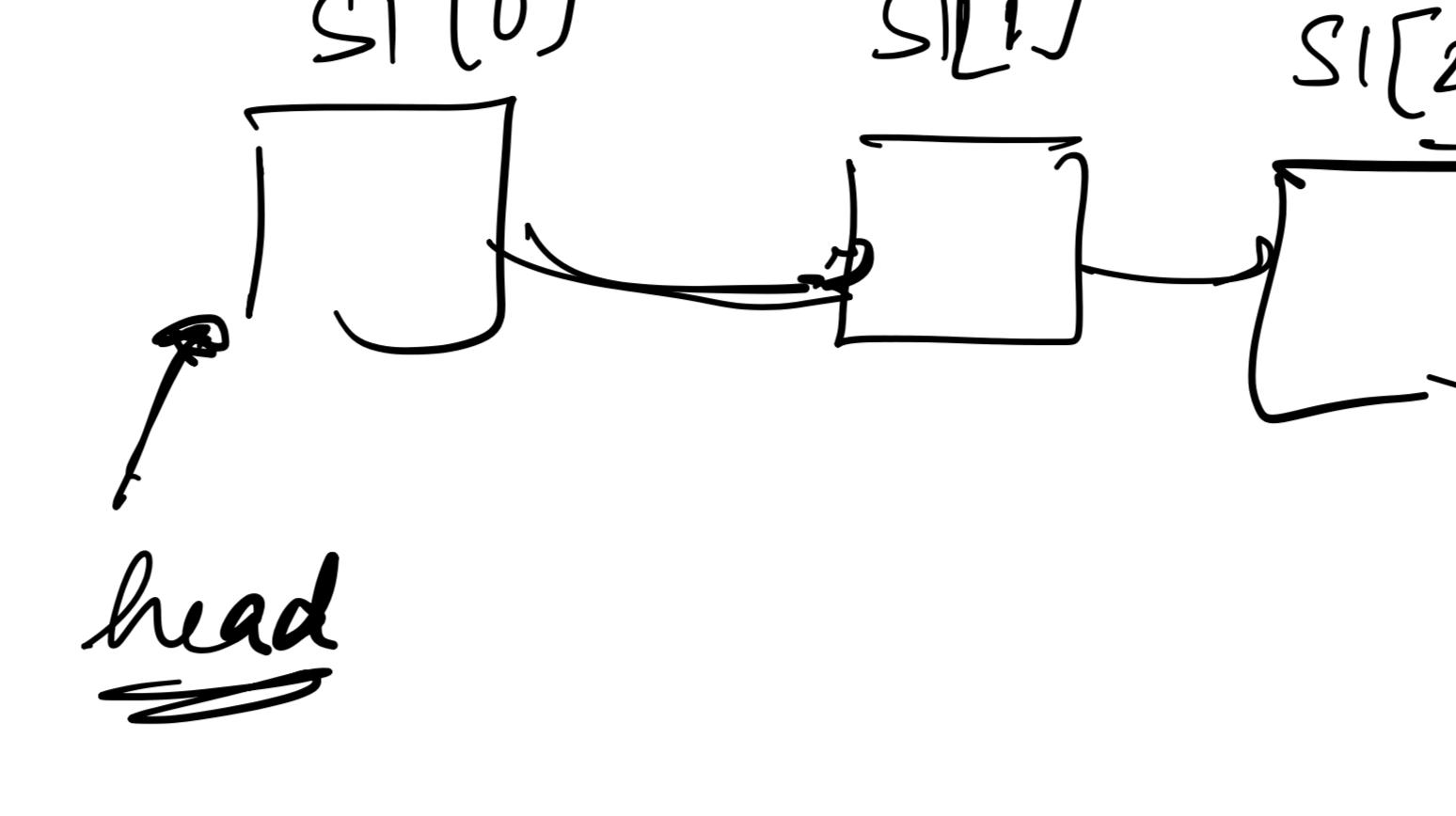
1. Data members
2. Member functions

Struct Name
struct
data type

raw;
object
studentinfo s1;

s1.name = "Abhishek";
s1.phone = "9814300112";
s1.roll = "1701CS36";
s1.GPA = 3.6

dot
membership
operator



- dot operator ✓
- → operator
- basics of pointers
- comparison b/w struct and a class

```
class base {
public:
    int a;
private:
    int c;
protected:
    int b;
}
```

Access Modifiers

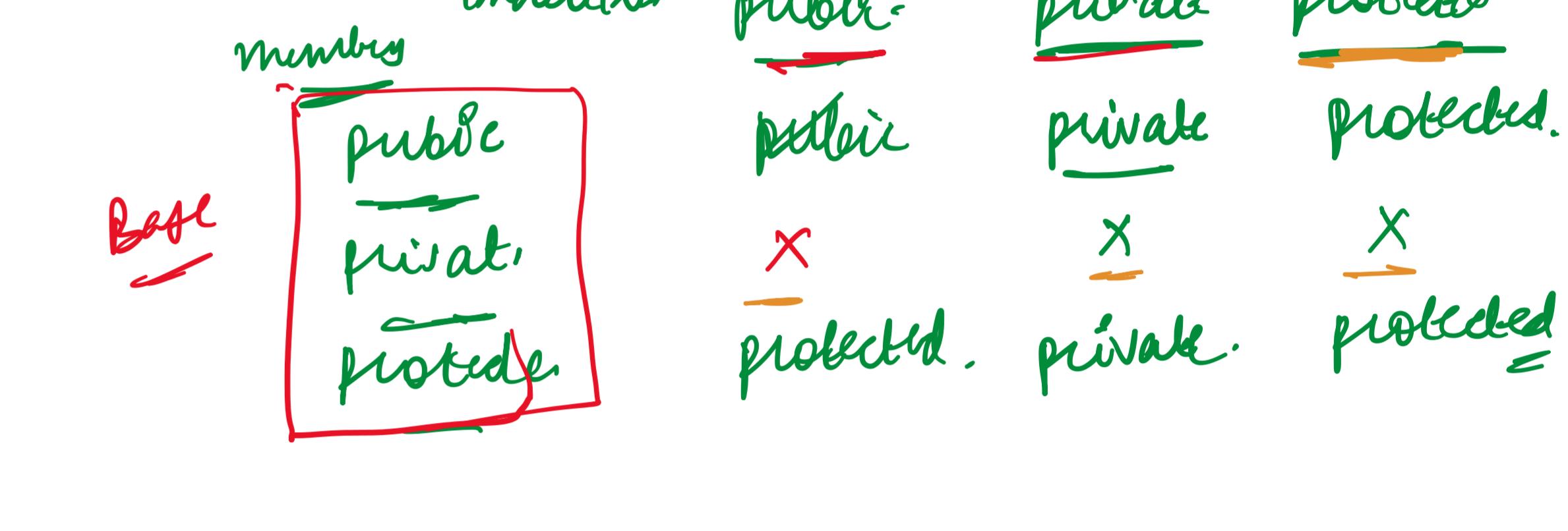
+ public

+ protected

+ private



```
class Derived : private Base {
private:
    int a, b;
}
```



```
print() {
    cout << b;
}
```

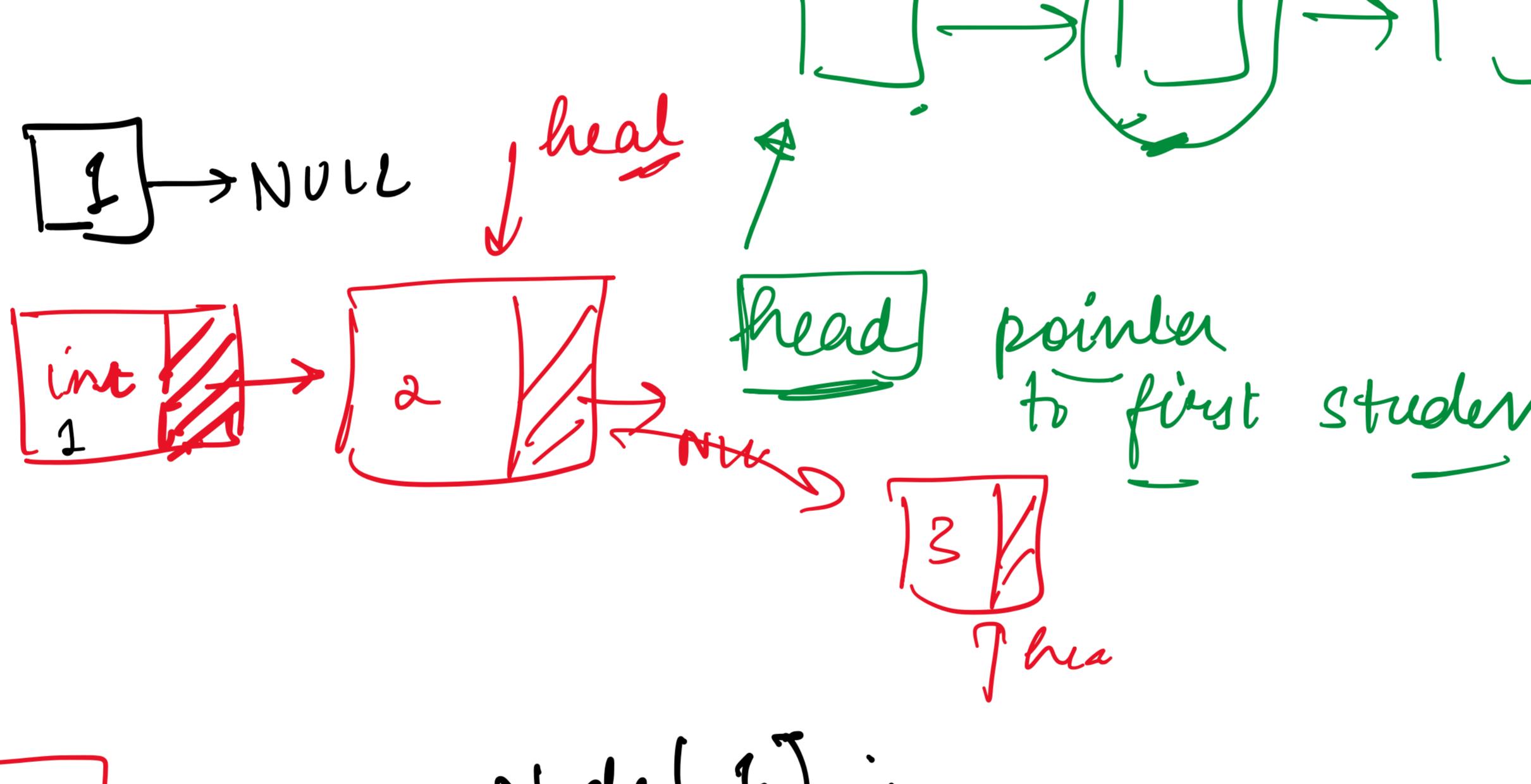
```
Derived d;
d.a // X
d.c // X
d.b // X
```

- ⑩ All data members are accessible by member functions

stu

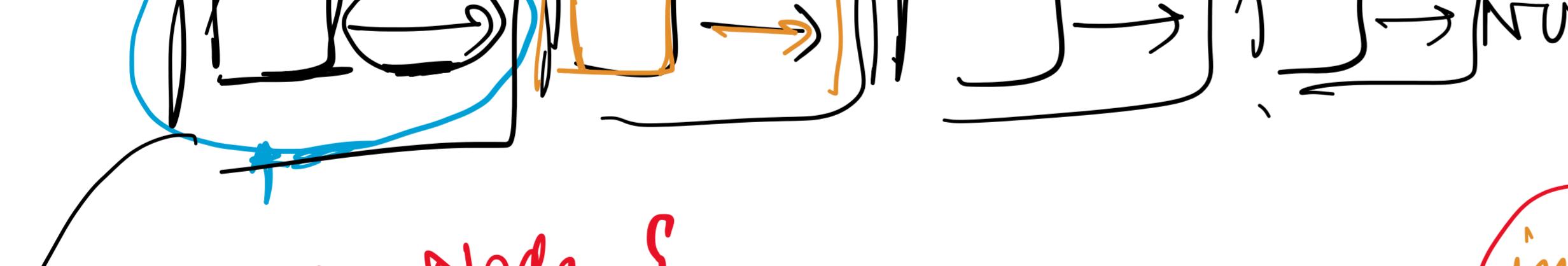
* Structs + Pointers

```
struct Node {
    int data;
    Node* next;
    Node(int a) {
        data = a;
        next = NULL;
    }
}
```



int * val

```
Node* head = new Node(1);
head->next = new Node(2);
head = head->next;
```

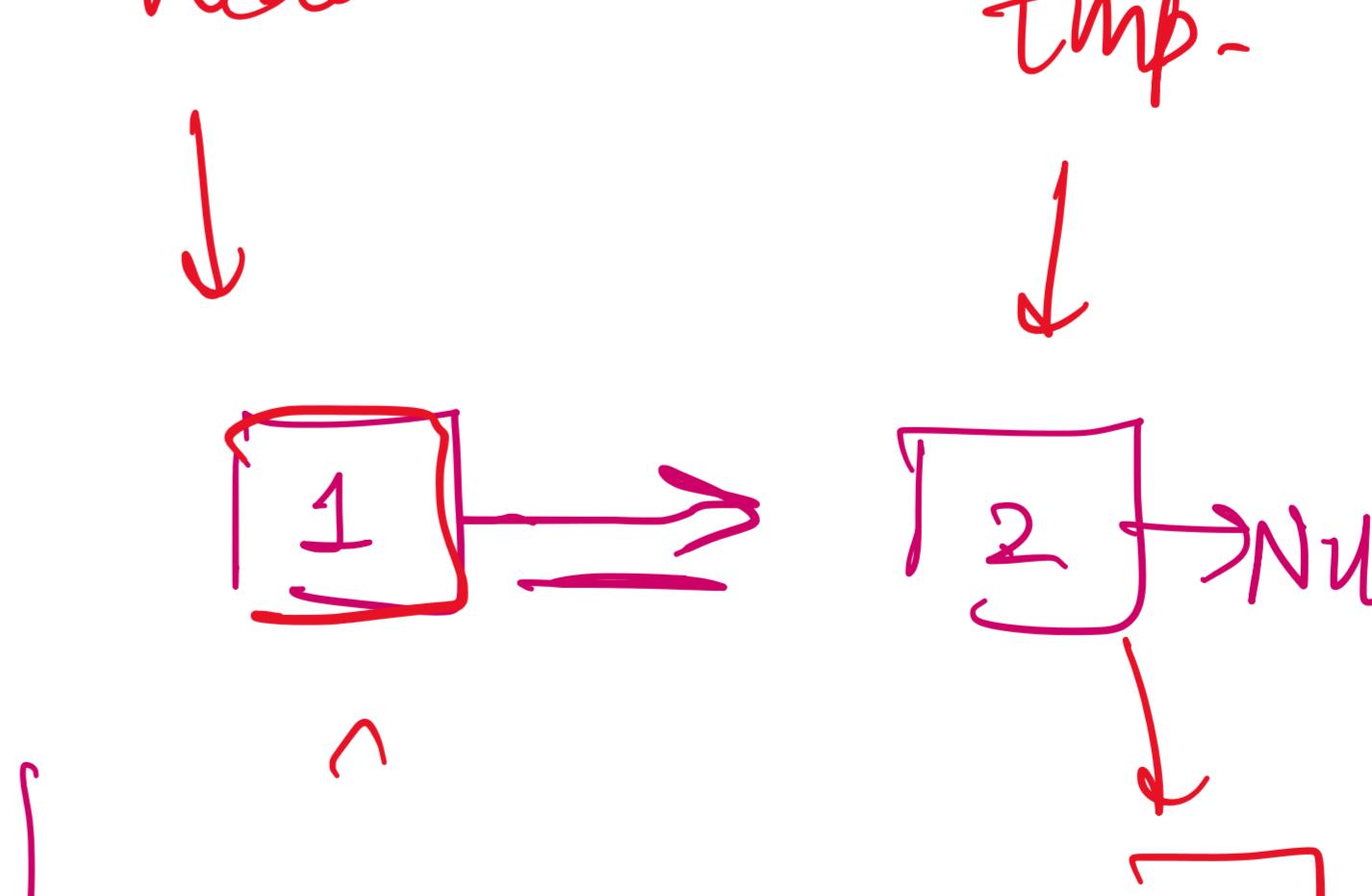


```
int * head;
head = new Node(1);
```

int *

```
Node* head = new Node(1);
Node* tmp = head;
tmp->next = new Node(2);
```

```
tmp = tmp->next;
```



```
1 -> 2 -> 3 -> 4 -> NULL
```

```
1 -> 2 -> 3 -> 4 -> NULL
```

```
1 -> 2 -> 3 -> 4 -> NULL
```

```
1 -> 2 -> 3 -> 4 -> NULL
```

```
1 -> 2 -> 3 -> 4 -> NULL
```

bool isPresent (Node* head, int val) {

 while(head != NULL) {

 if(head->data == val) return true;

 head = head->next;

 return false;