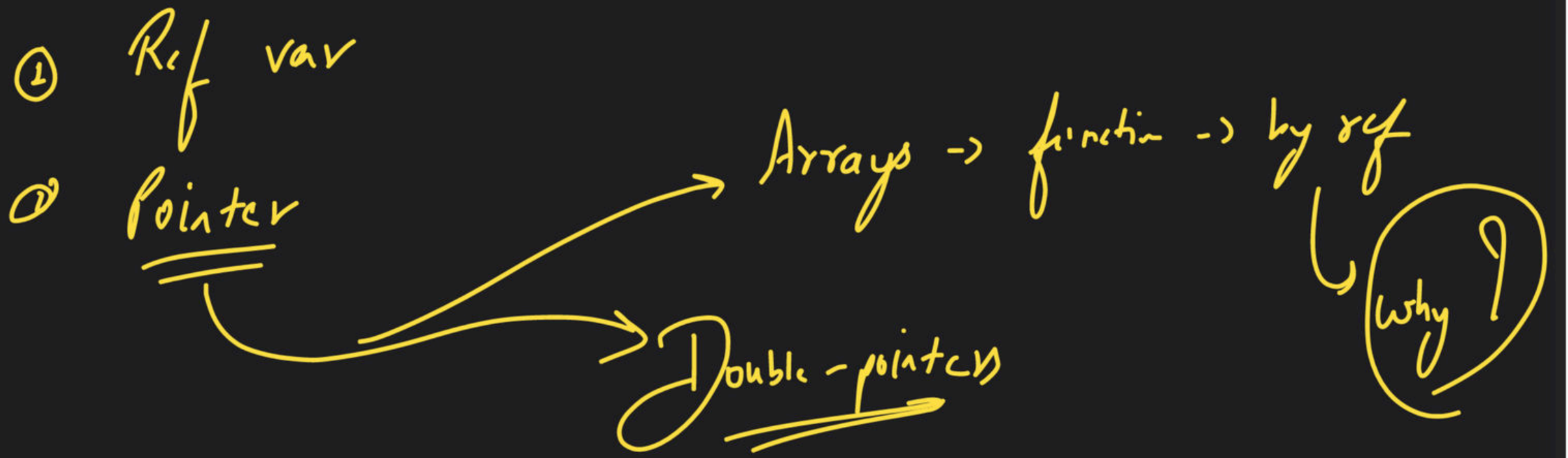
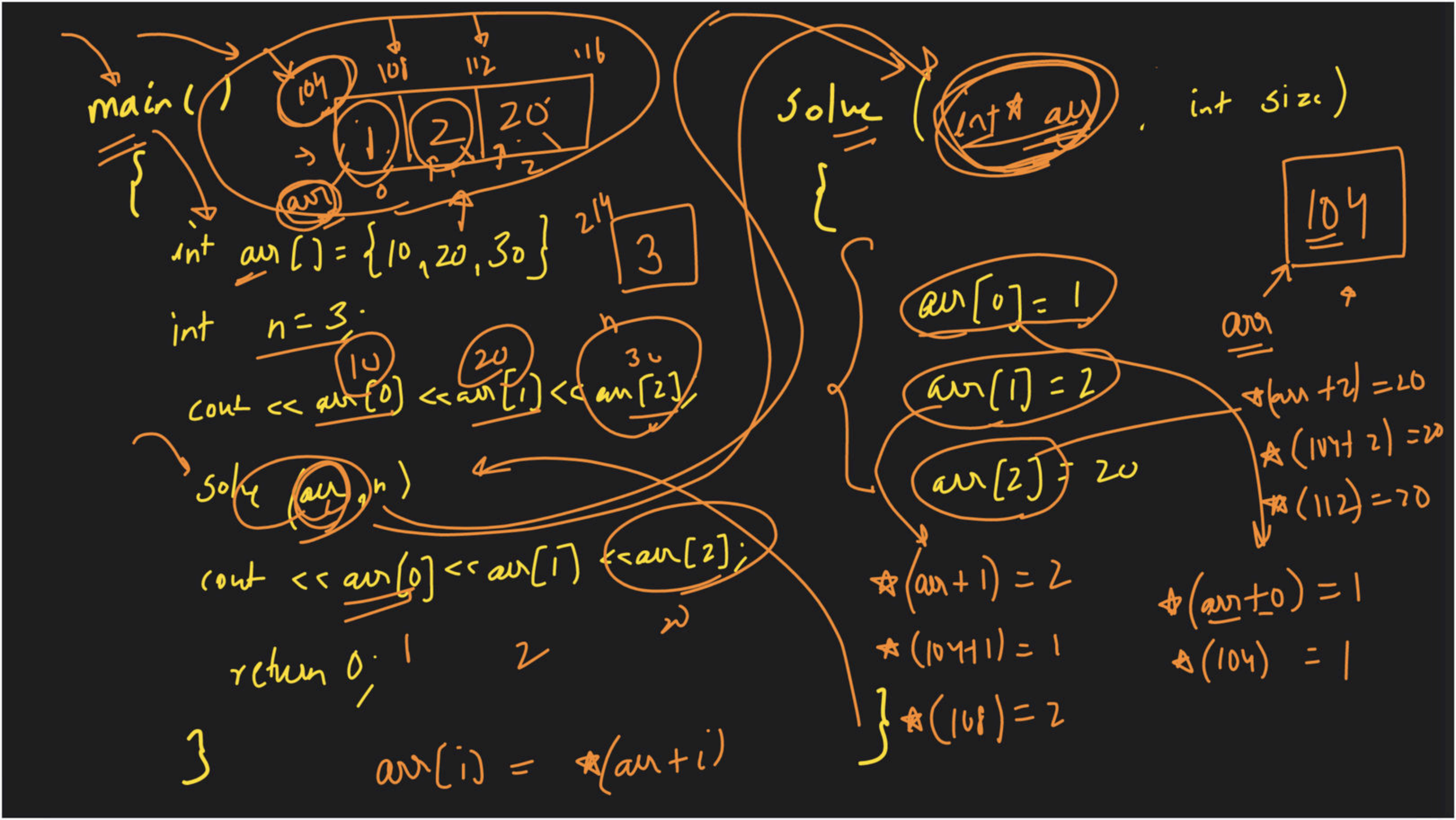
# Pointers - Class 2

Special class

**Love Babbar** • June 17, 2024


1 Ref var
2 Pointer
Arrays -> function -> by ref
why ?
Double - pointers

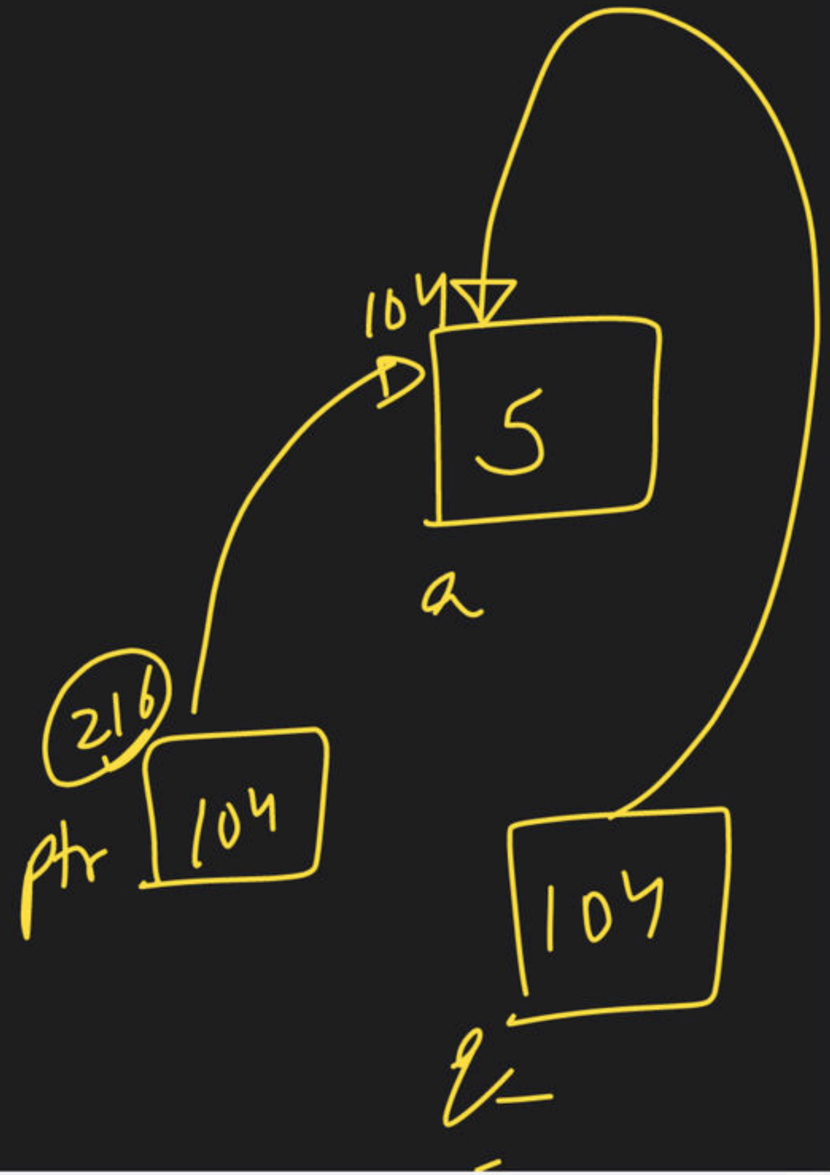

main()
104
108
112
116
1
2
20
arr
0
1
2
int arr[] = {10, 20, 30}
214
3
int n = 3;
10
20
30
cout << arr[0] << arr[1] << arr[2];
Solve (arr, n)
cout << arr[0] << arr[1] << arr[2];
return 0;
1
2
30
}
arr[i] = *(arr+i)
Solve (int* arr, int size)
{
arr[0] = 1
arr[1] = 2
arr[2] = 20
*(arr+1) = 2
*(104+1) = 1
*(108) = 2
}
104
arr
*(arr+2) = 20
*(104+2) = 20
*(112) = 20
*(arr+0) = 1
*(104) = 1

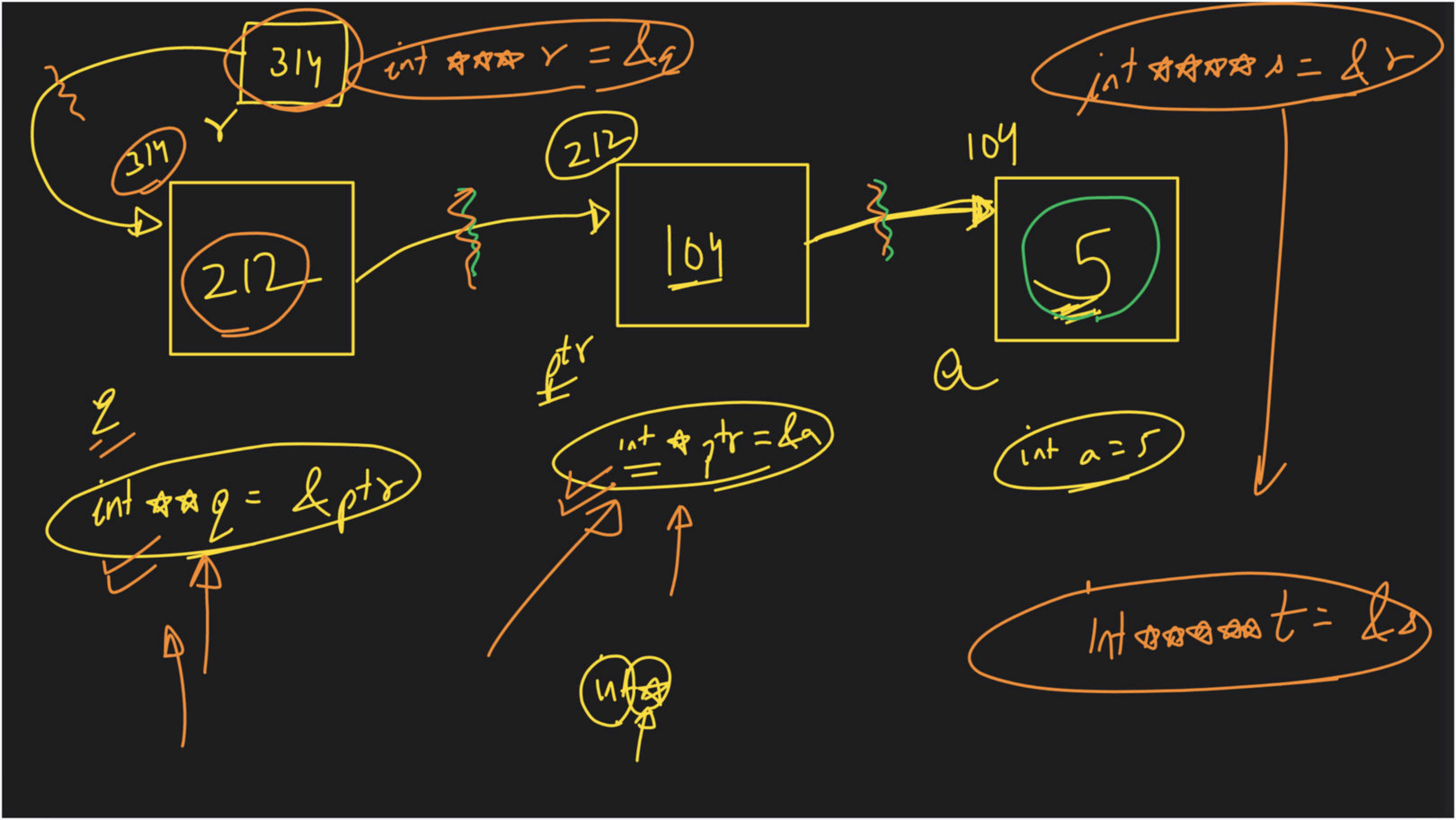
# → Double pointers :-

```
int a = 5;
int* ptr = &a
int** q = ptr
```

or

```
int** q = &ptr
```




314
int *** r = &q
r
314
212
212
104
104
5
a
ptr
q
int ** q = &ptr
int * ptr = &a
int a = 5
int ***** s = &r
int ****** t = &s

int a = 10;

int* p = &a

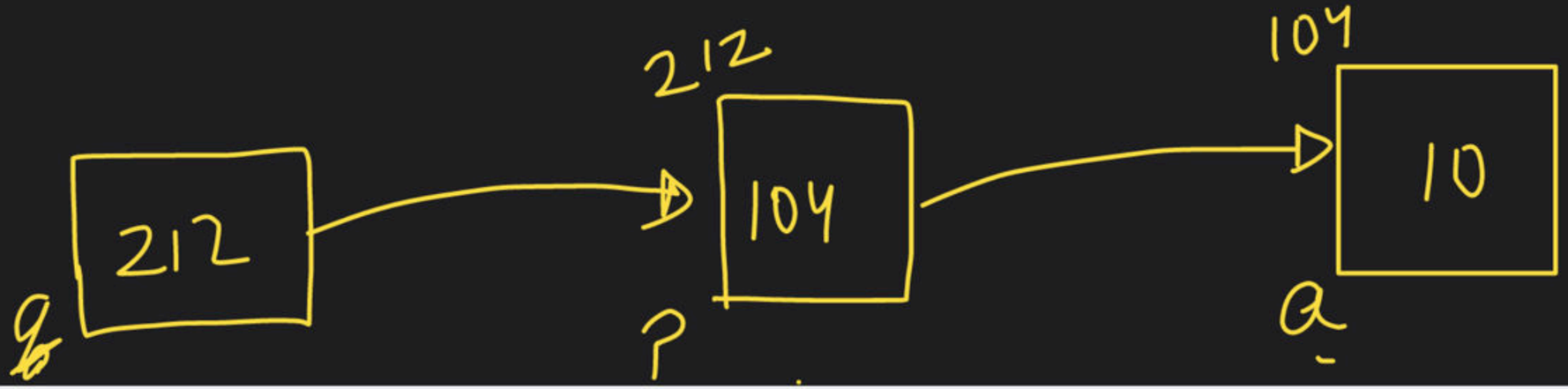
int** q = &p;

int* → pointer to an integer

int** → pointer to a int*

pointer to

pointer to an integer



```
int a = 5;
int *p = &a;
int **q = p;
```

a → 5

&a → 104

*a → Error

p → 104

&p → 212

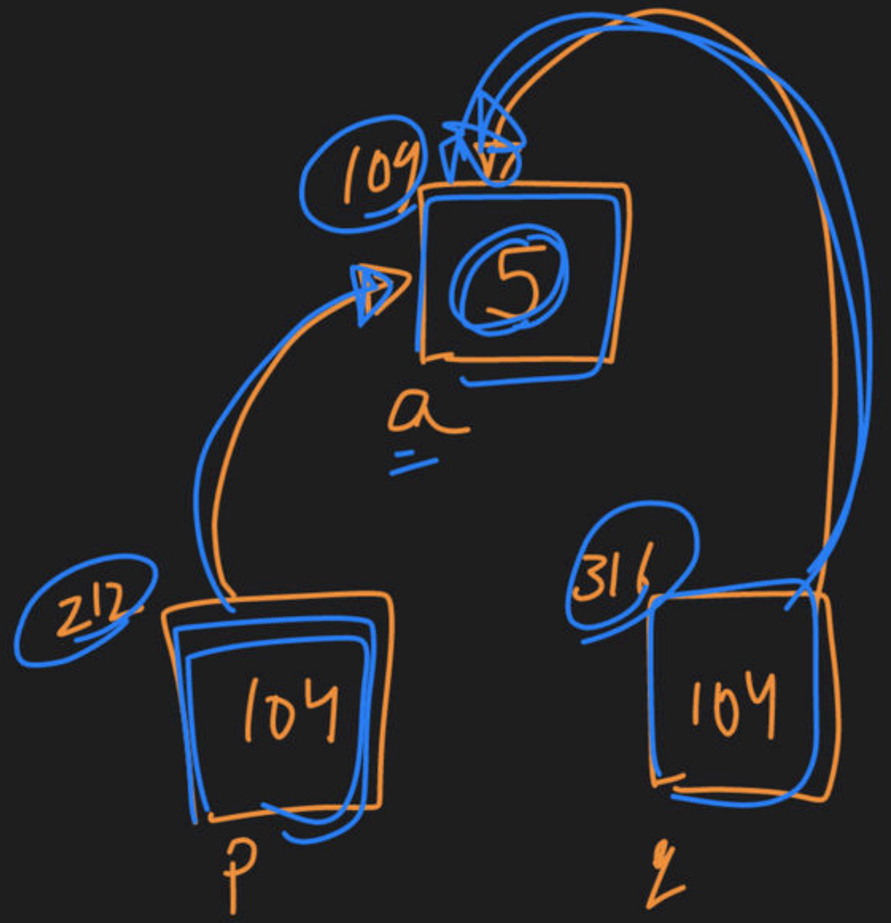
*p → 5

q → 104

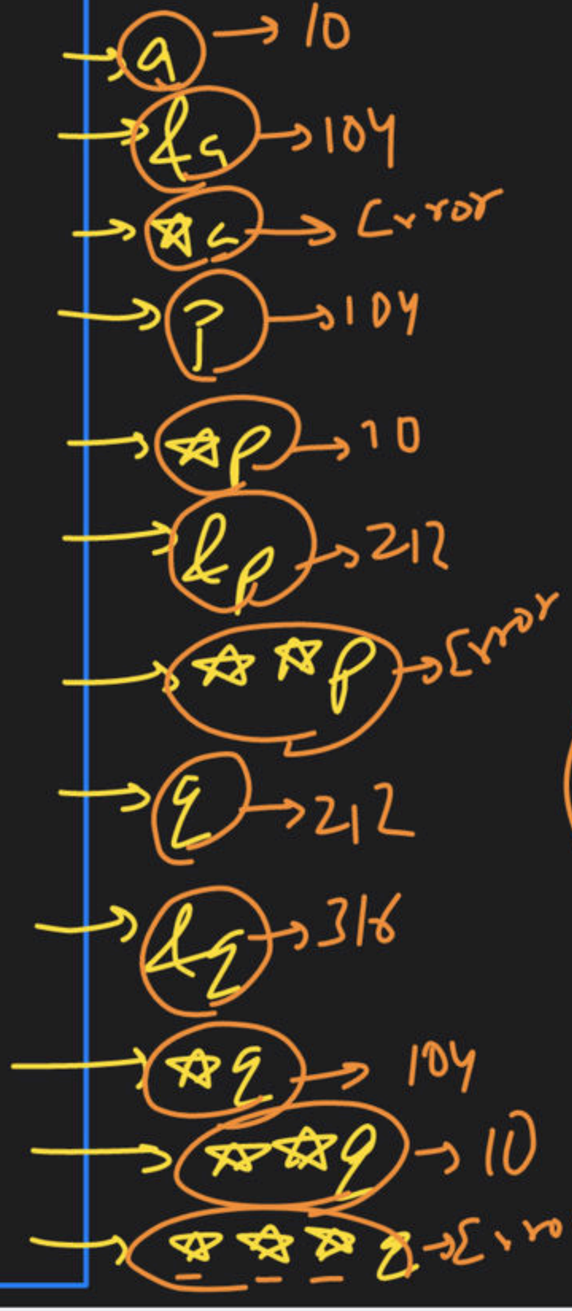
&q → 316

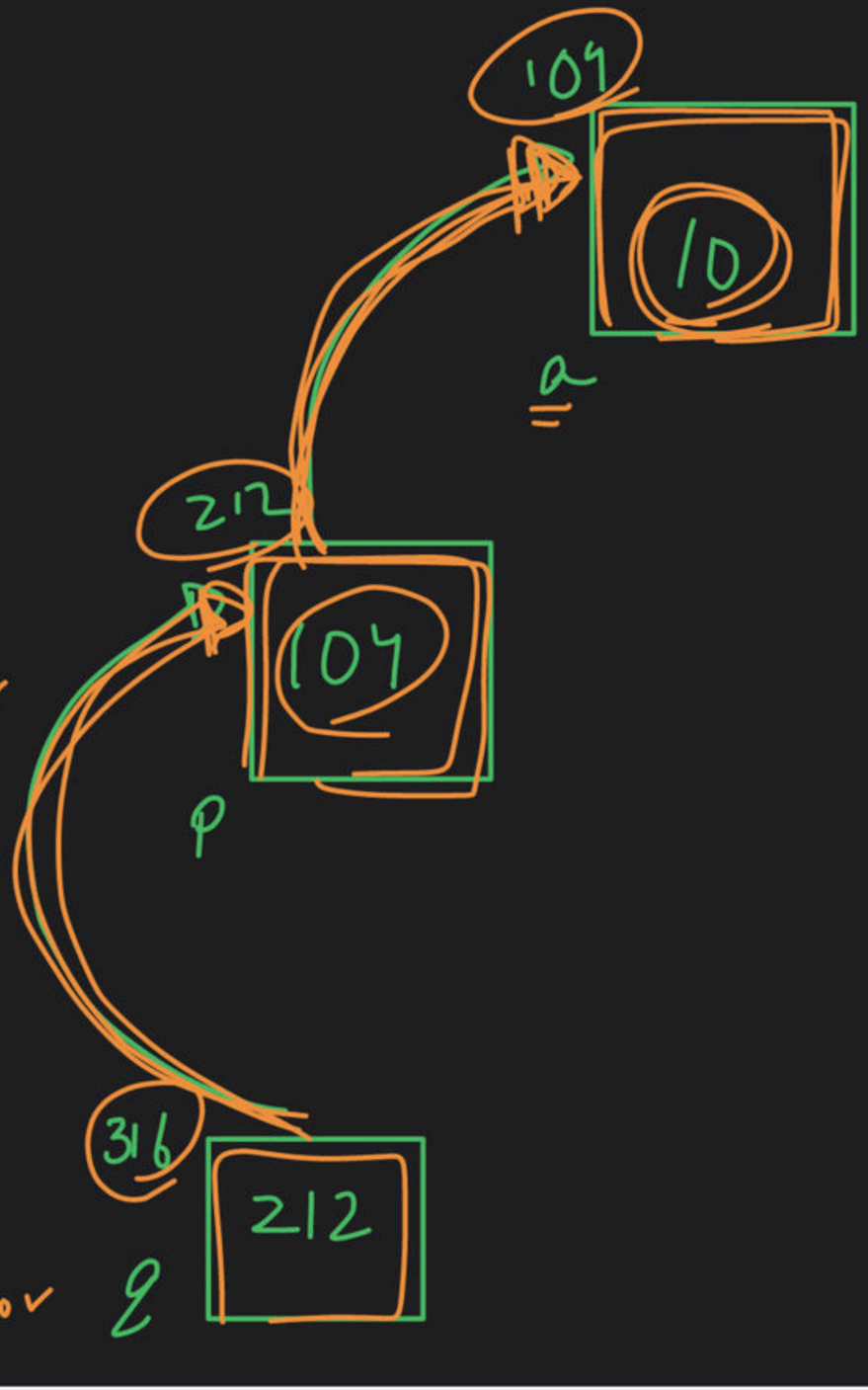
*q → 5

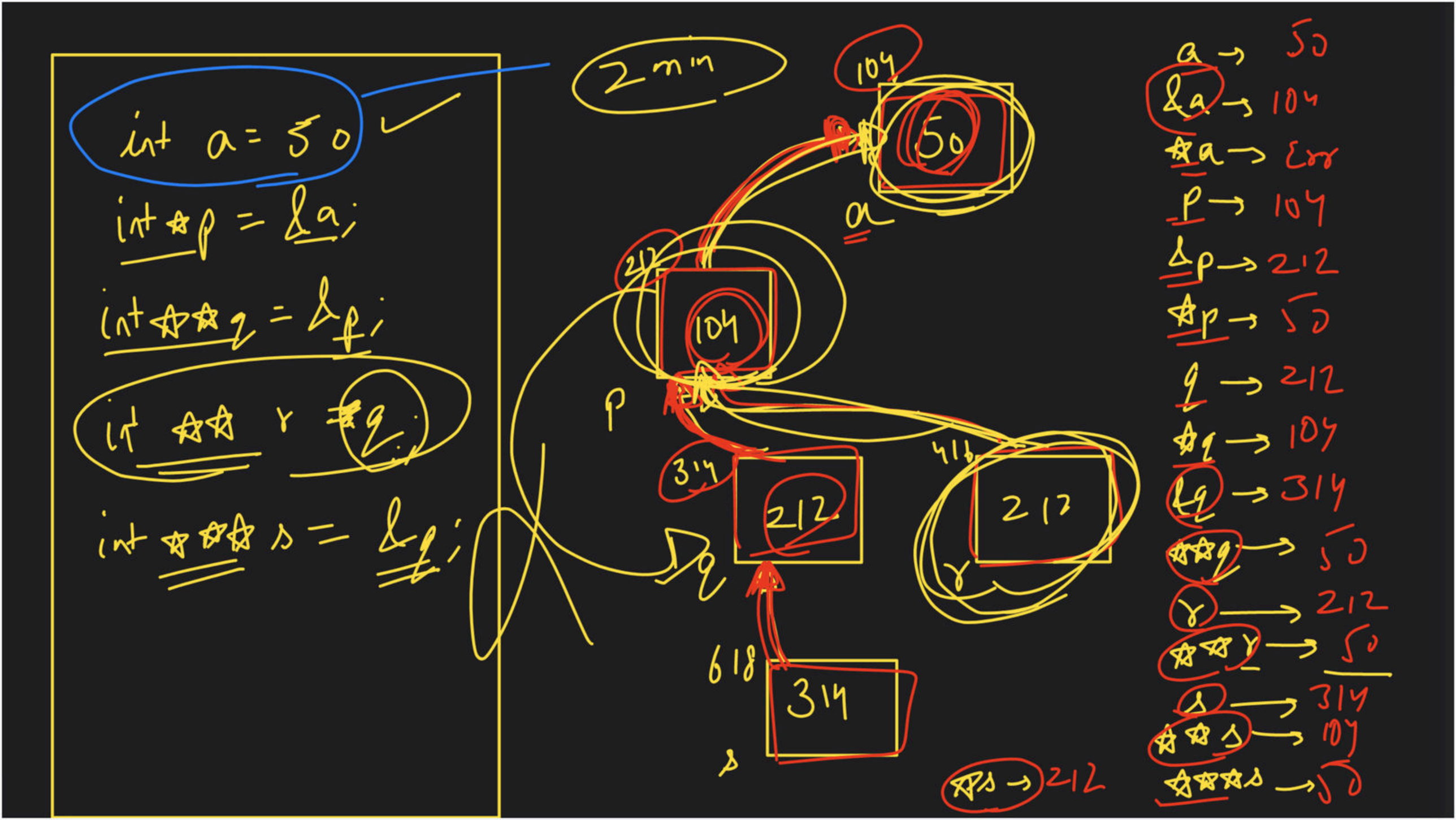
**q → Error

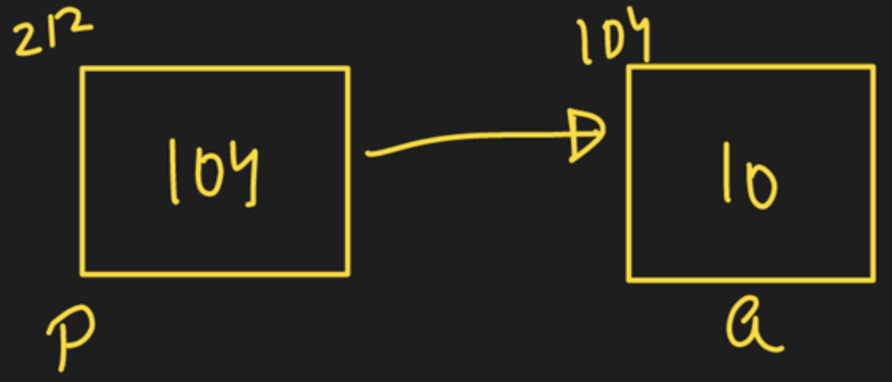


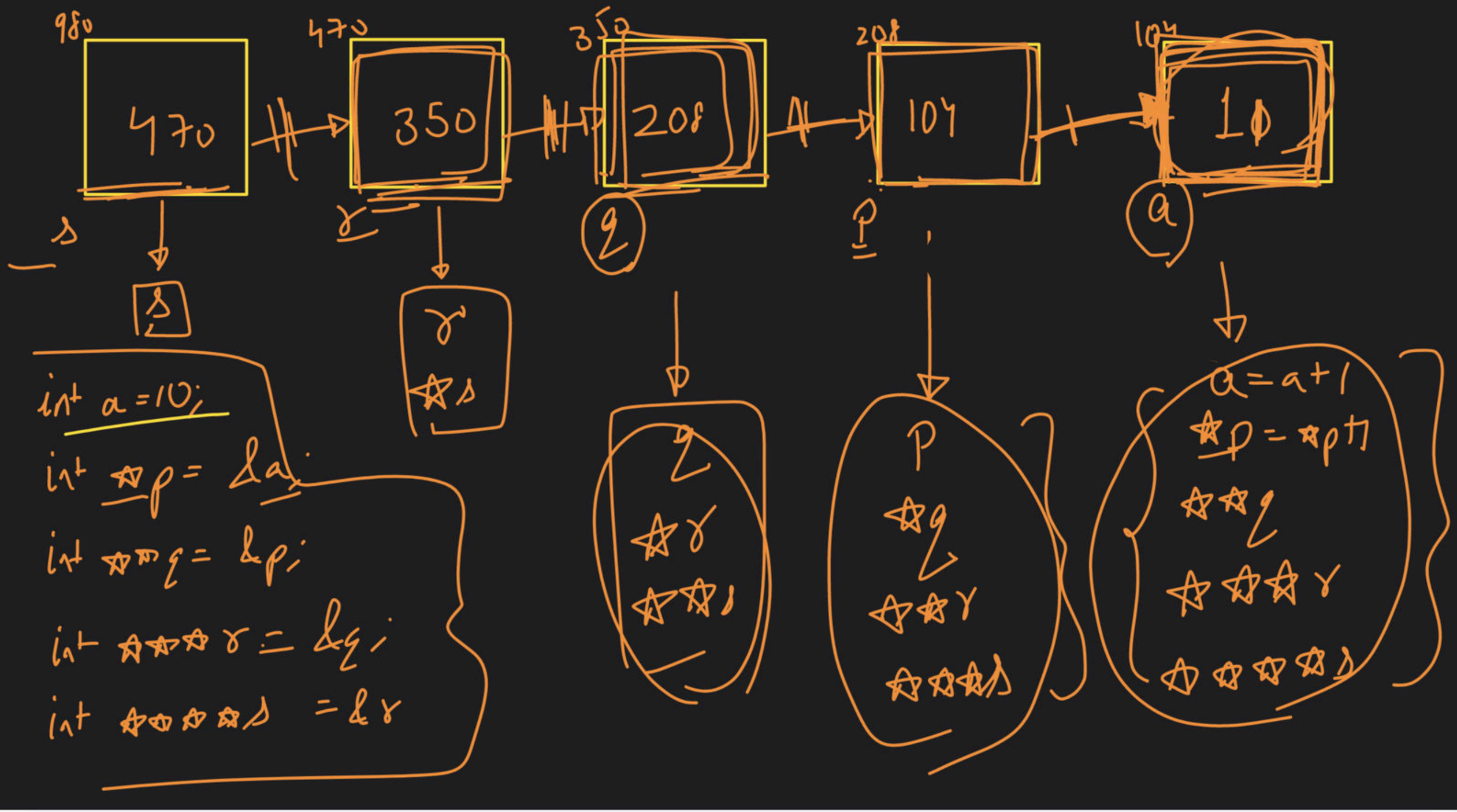
```
int a = 10;
int * p = &a;
int ** q = &p;
```

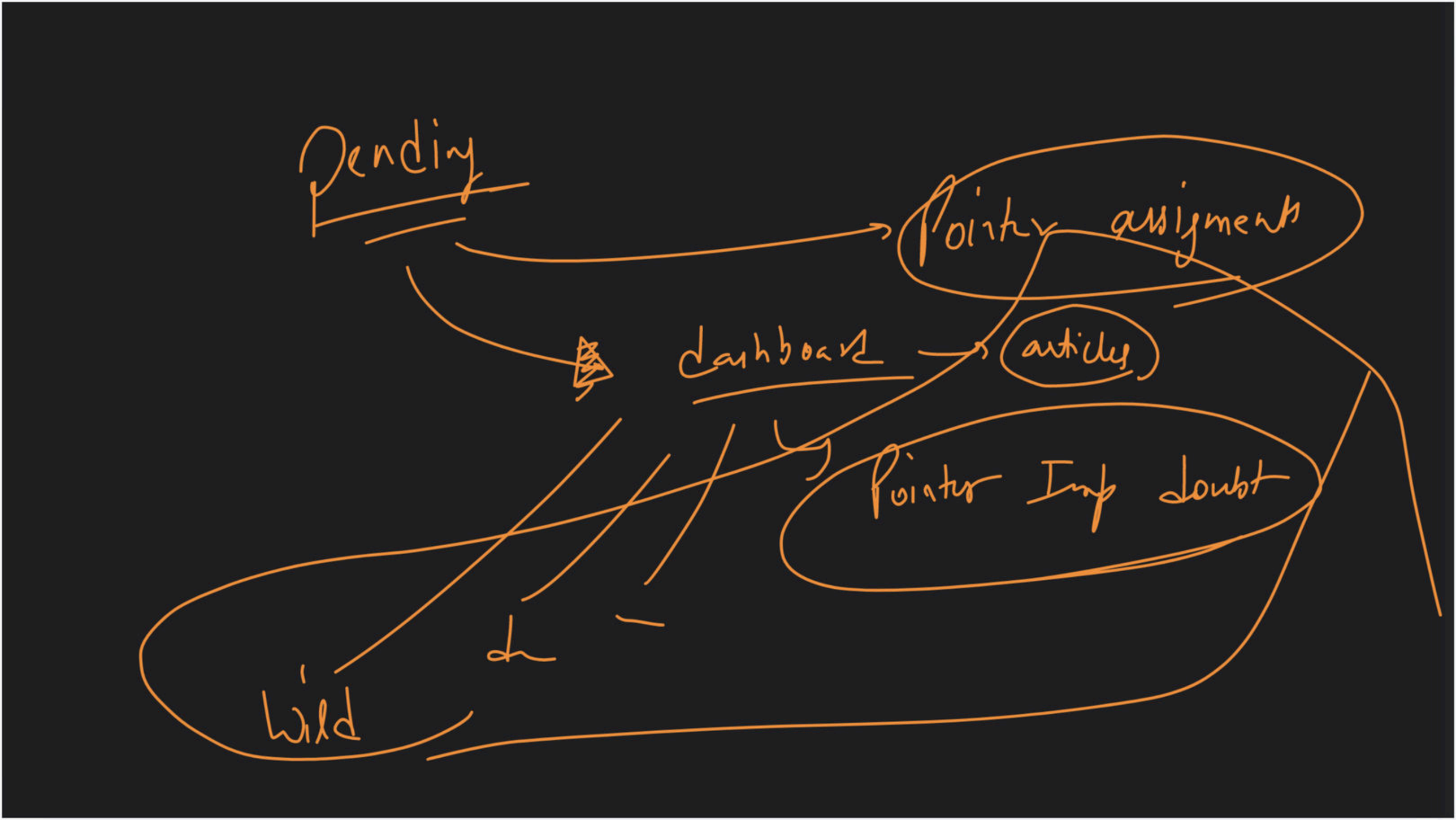


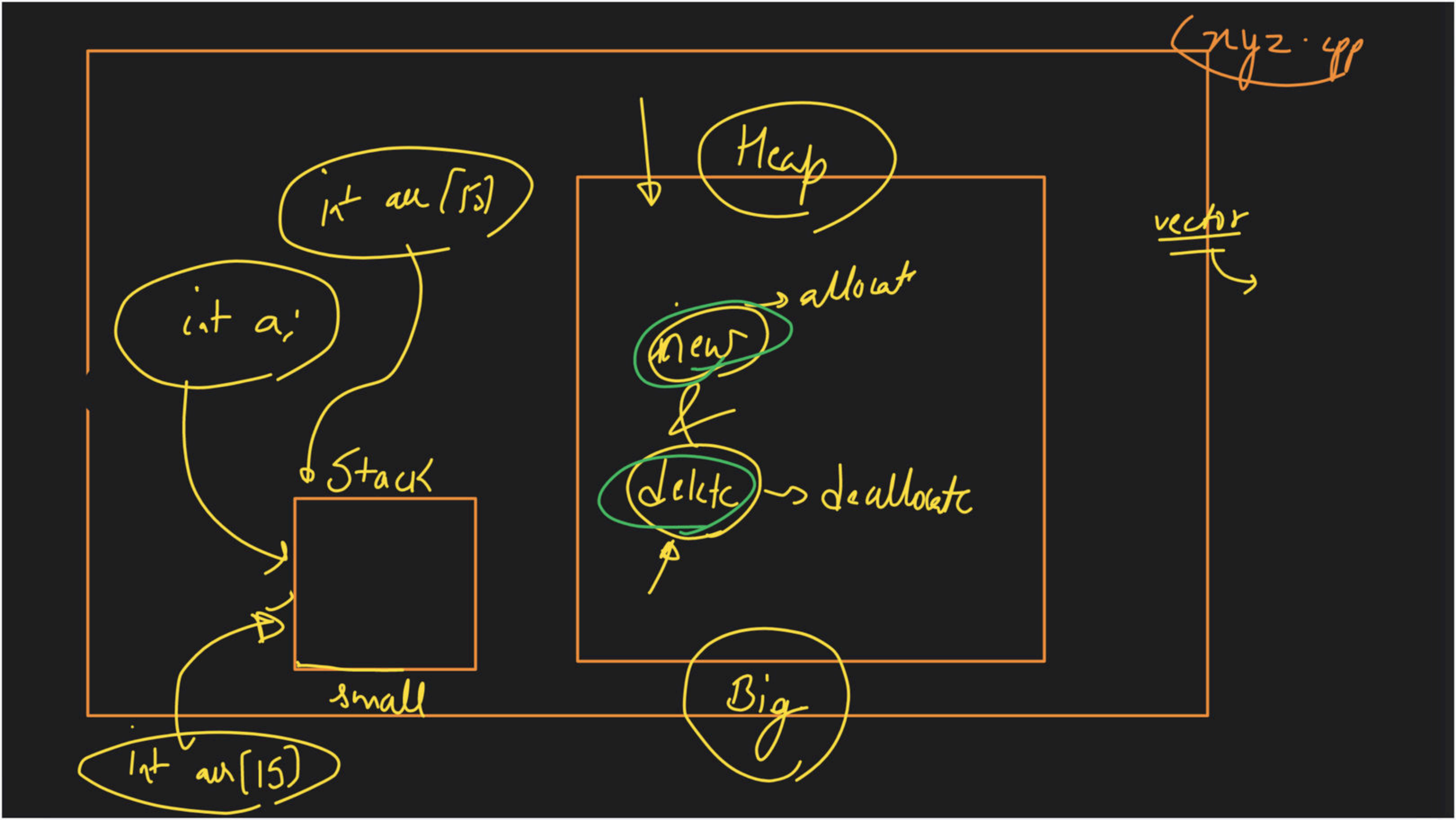



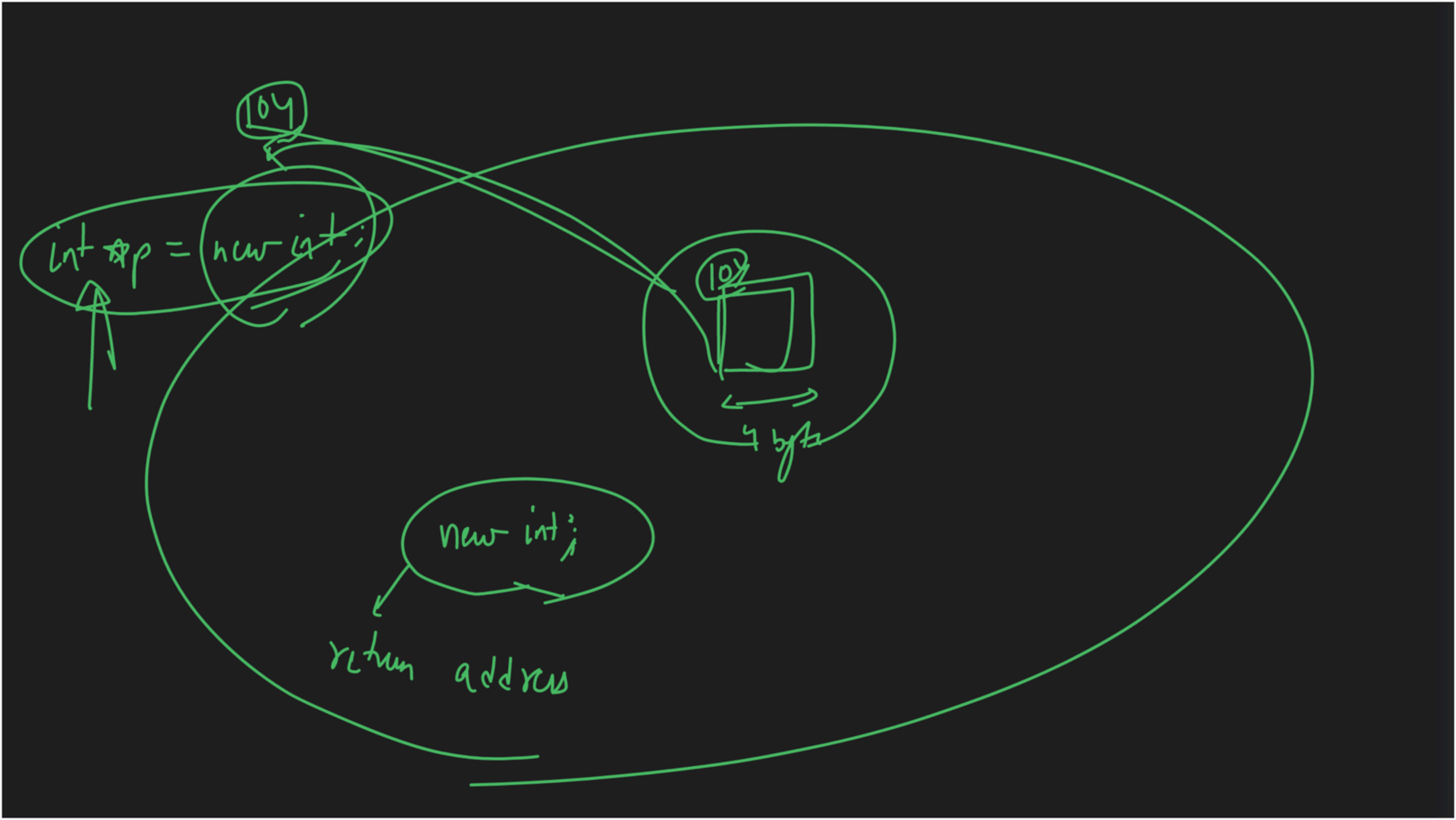

int a = 50
int *p = &a;
int **q = &p;
int ** r = q;
int ***s = &q;
2 min
104
50
a
212
104
p
314
212
q
418
212
r
618
314
s
a → 50
&a → 104
*a → Err
p → 104
&p → 212
*p → 50
q → 212
*q → 104
&q → 314
**q → 50
r → 212
**r → 50
&s → 314
*s → 104
***s → 50
**s → 212

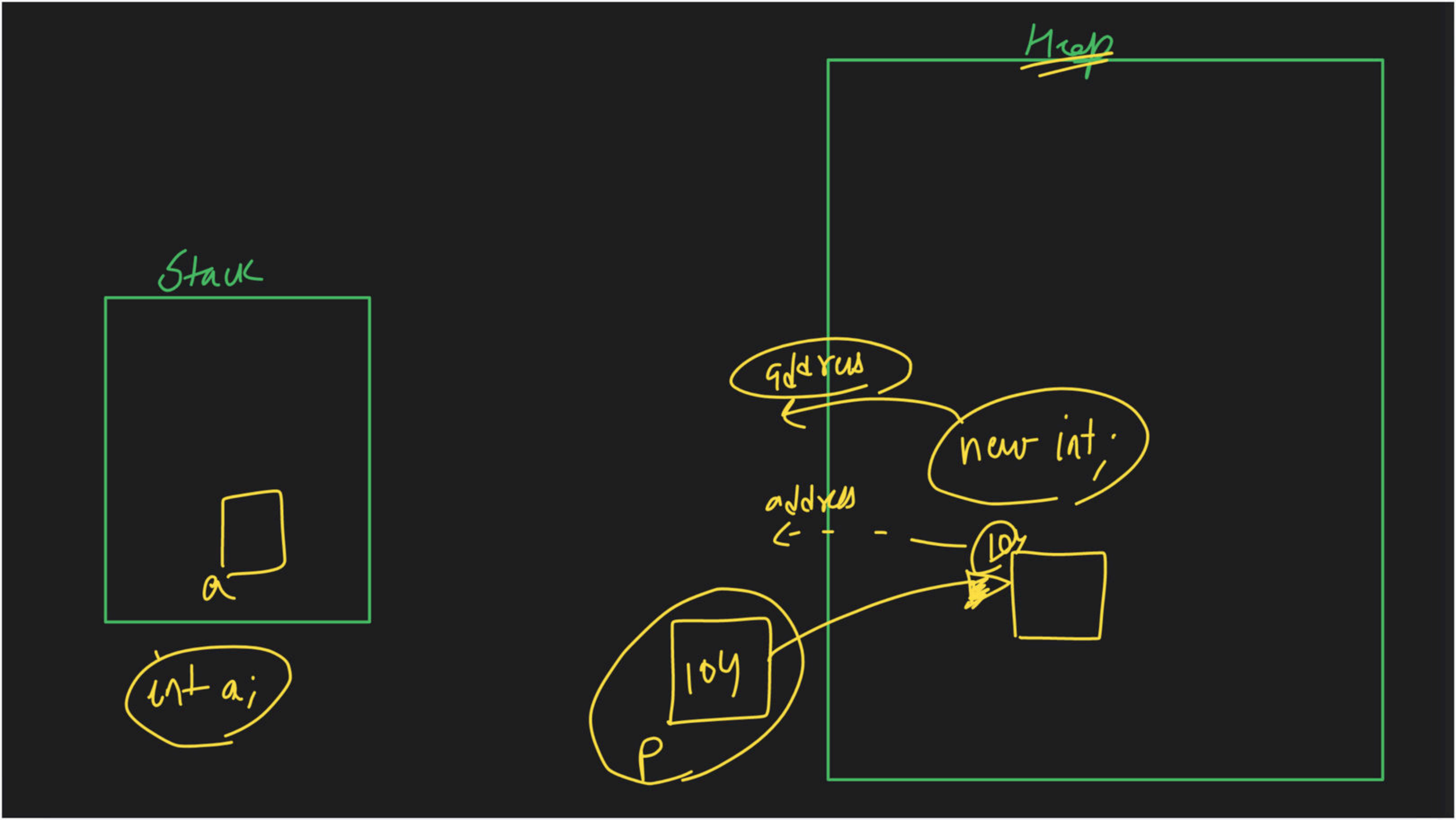

212
104
104
10
p
a

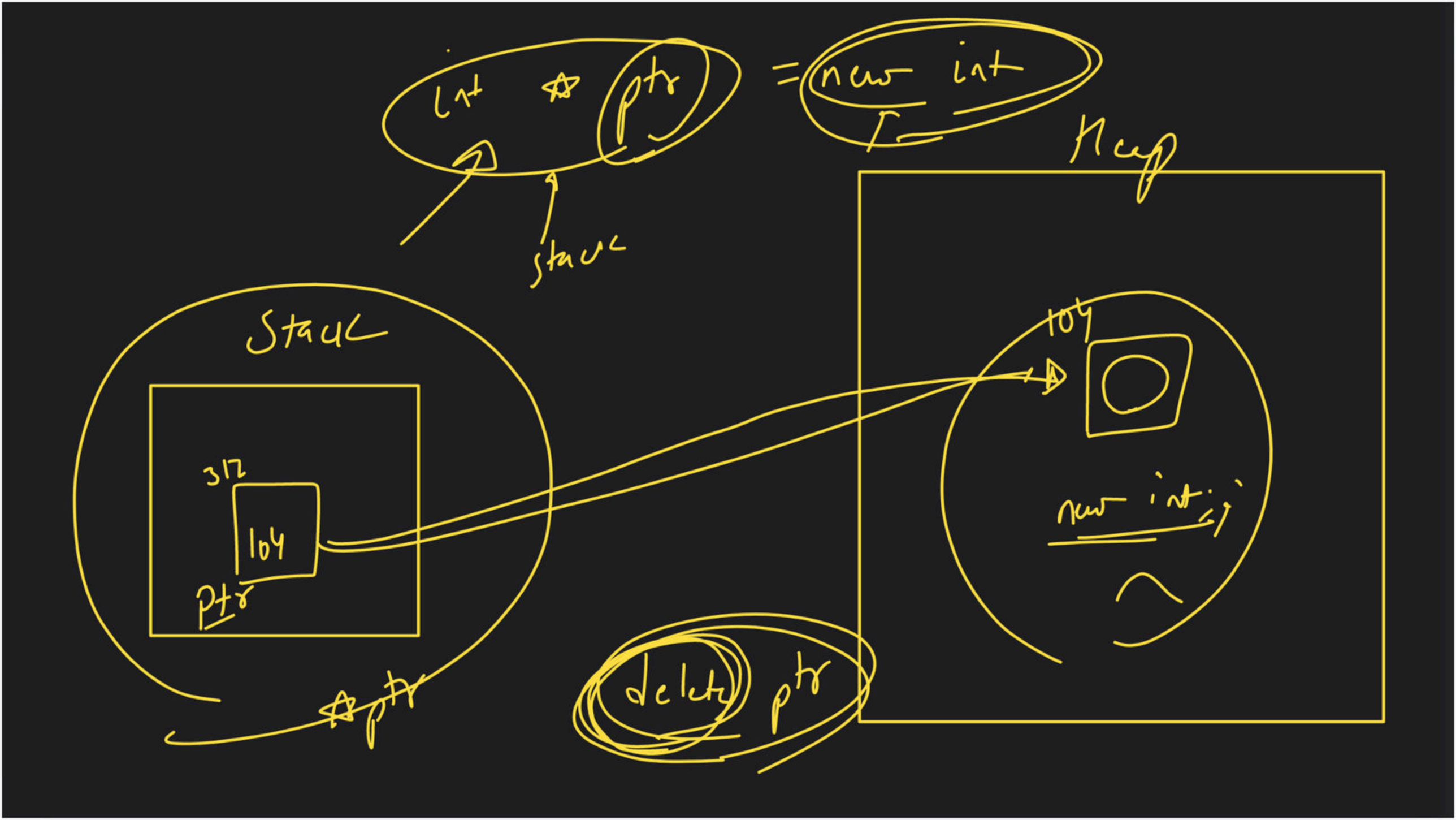

980
470
350
208
104
470
350
208
104
10
s
r
q
p
a
s
r
q
p
a
int a = 10;
int *p = &a;
int **q = &p;
int ***r = &q;
int ****s = &r
q
*r
**s
p
*q
**r
***s
a = a + 1
*p = *p + 1
**q
***r
****s

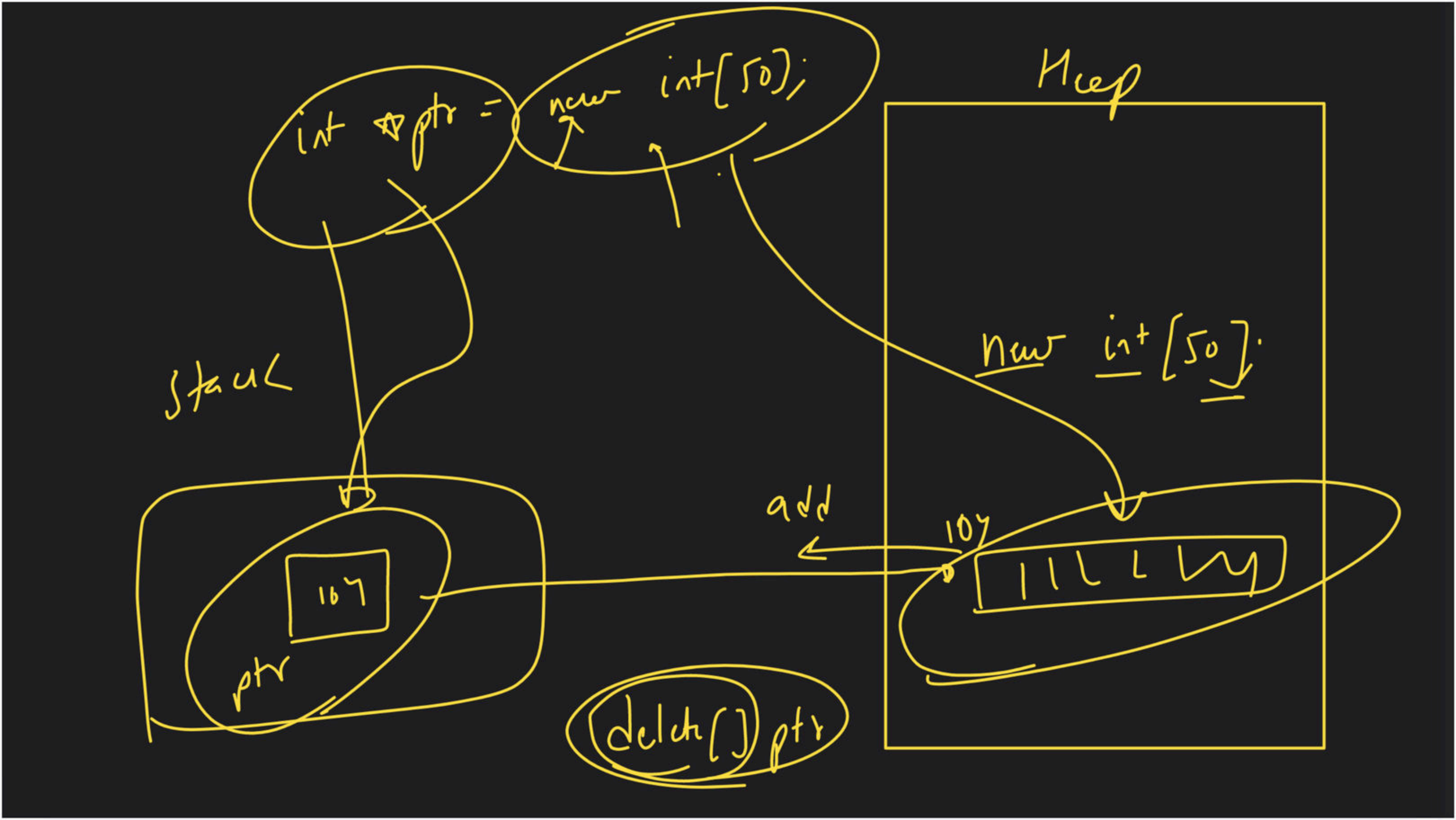

Pending
Pointer assignments
dashboard
articles
Pointer Imp doubt
Wild


xyz.cpp
int arr[5]
int a;
Stack
small
int arr[15]
Heap
allocat
new
delete
deallocate
Big
vector

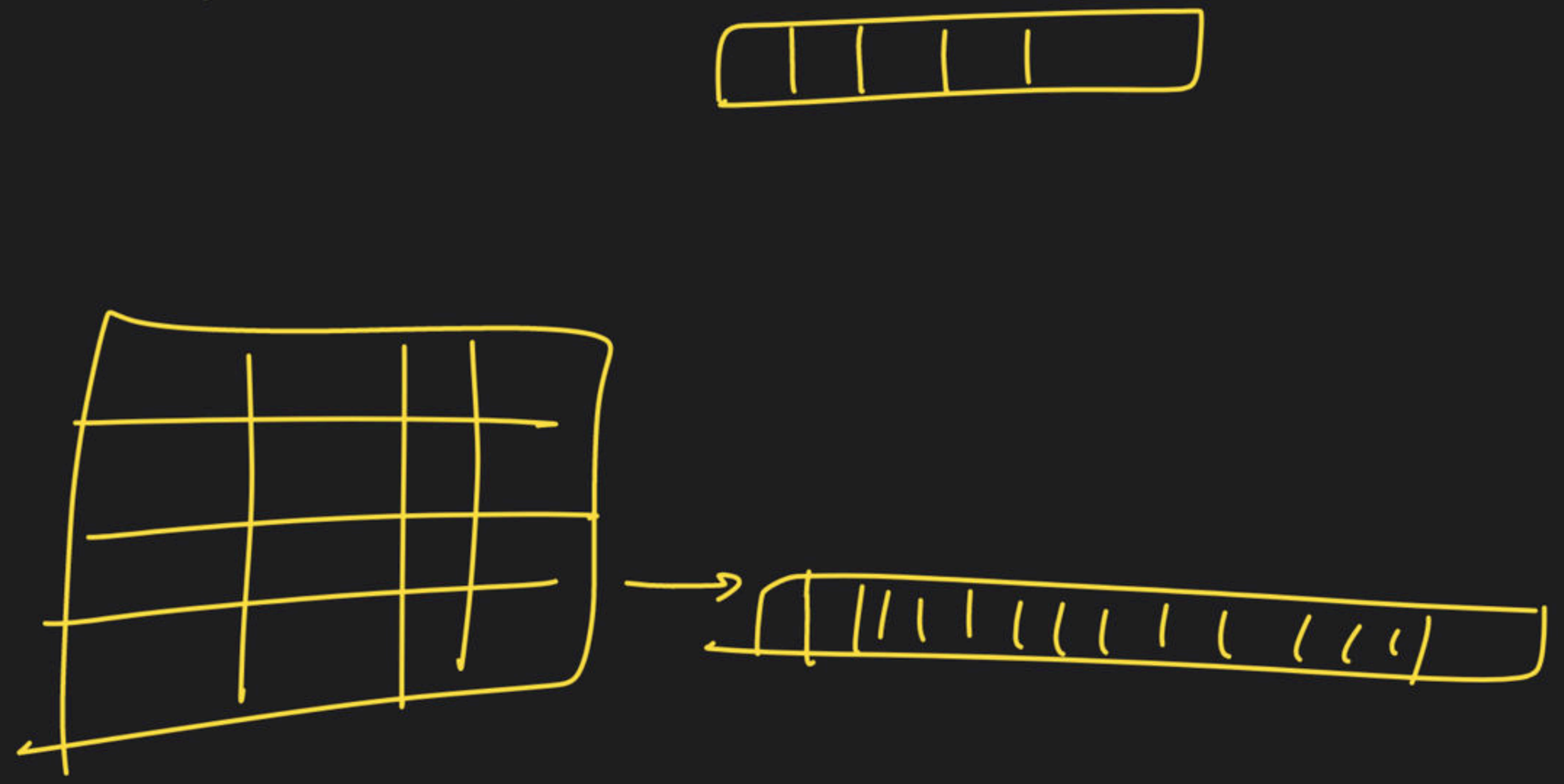

104
int *p = new int;
104
4 byte
new int;
return address

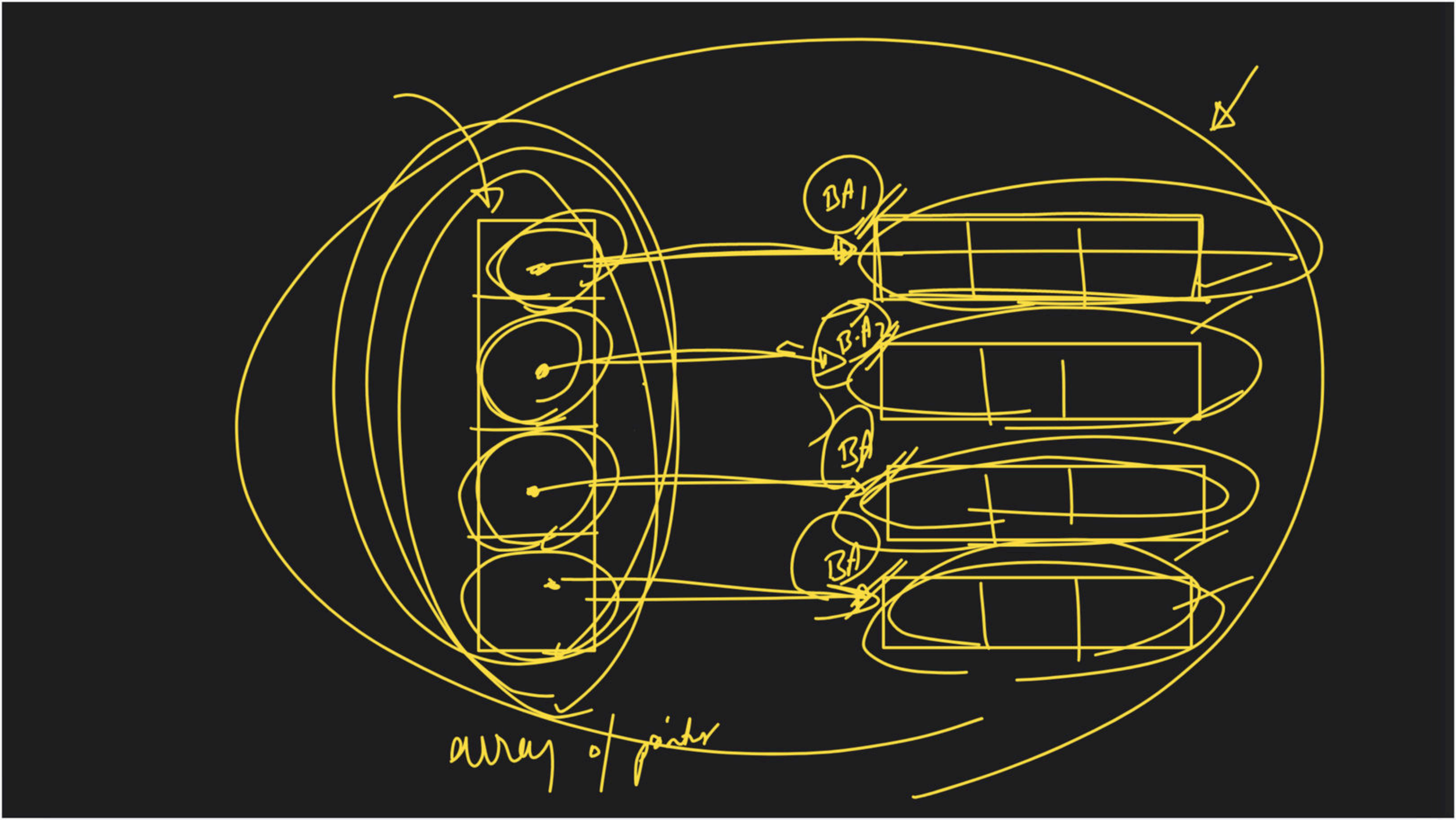

Heap
Stack
address
new int;
10y
10y
int a;
a
p


int * ptr = new int
stack
Heap
Stack
317
104
Ptr
104
new int;
delete ptr
* ptr

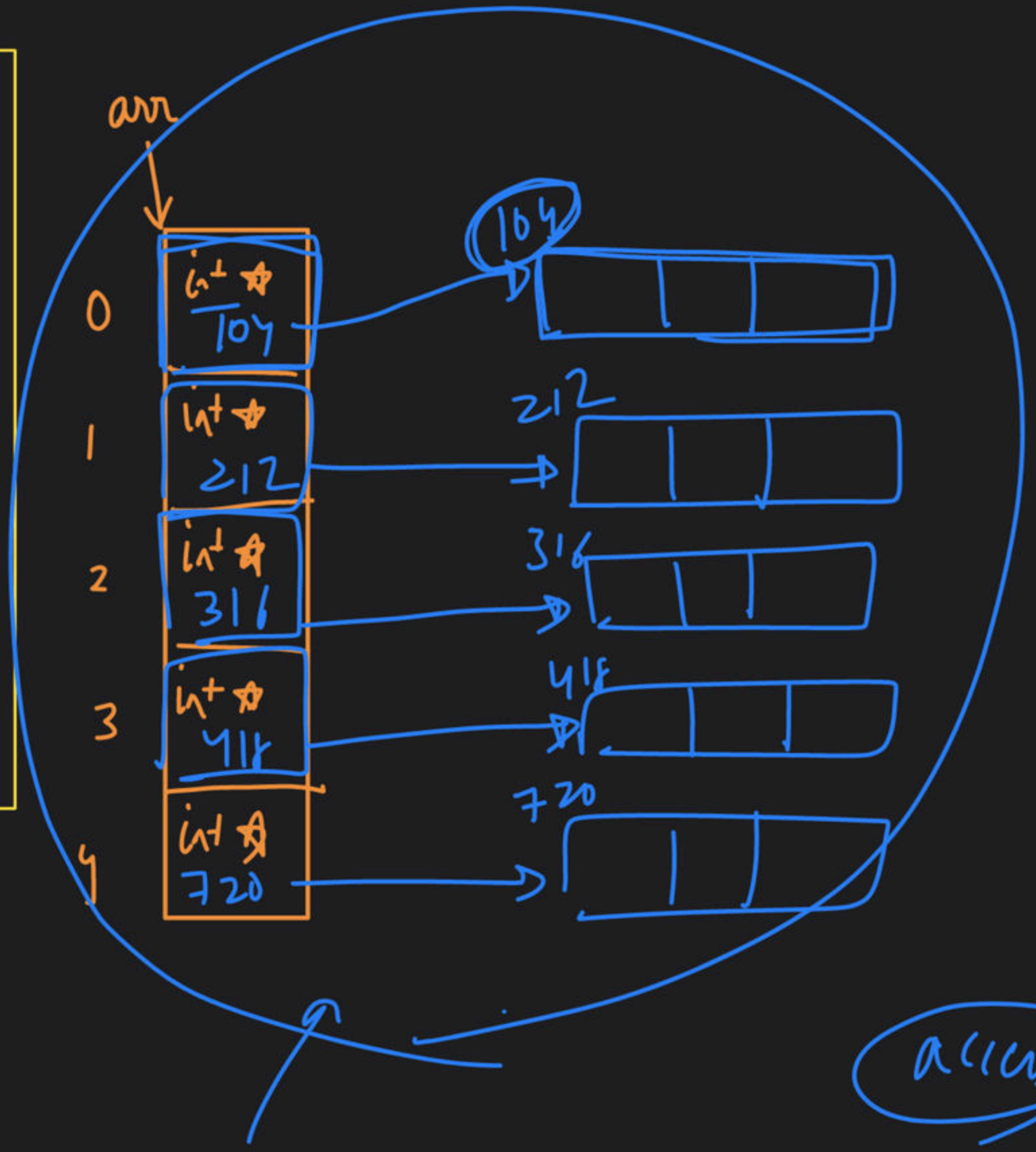

int *ptr =
new int[50];
Heap
Stack
new int[50];
add
107
ptr
delete[] ptr

2D array ⟶ Heap memory




BA 1
B·A
BA
BA
array of pointers

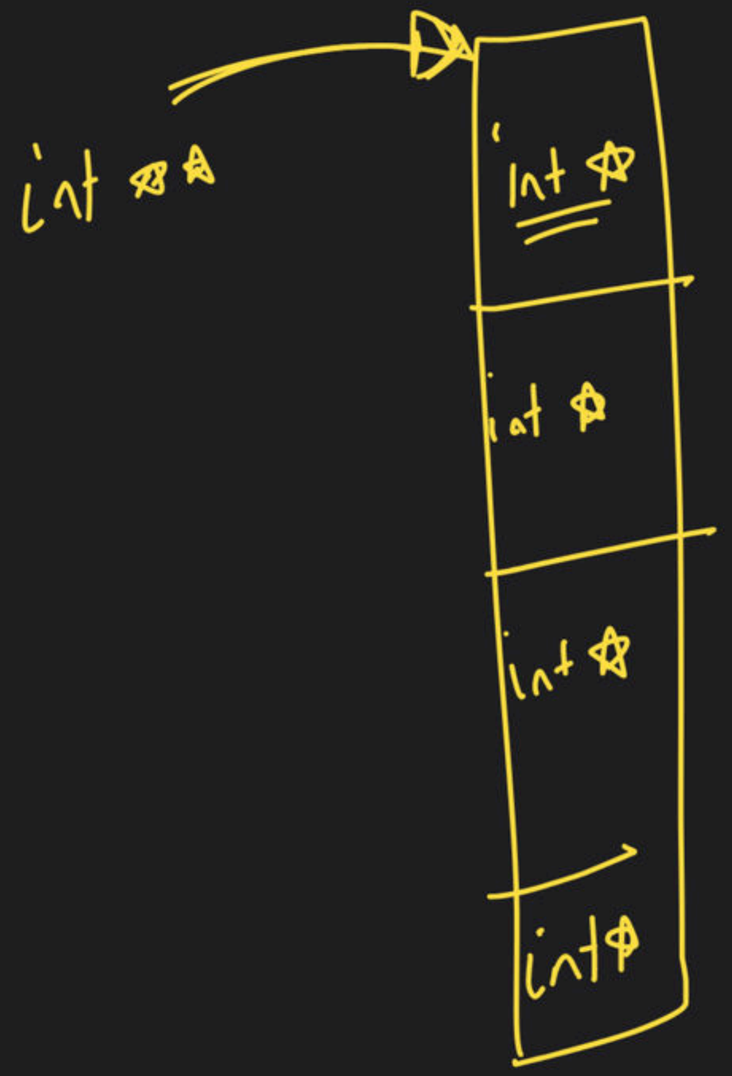
```
int ** arr = new int*[5];
for (int i=0; i<5; i++)
{
    arr[i] = new int[3];
}
```




i=0

arr[0] arr[1] arr[2]

arr[3] arr[4]




new int;

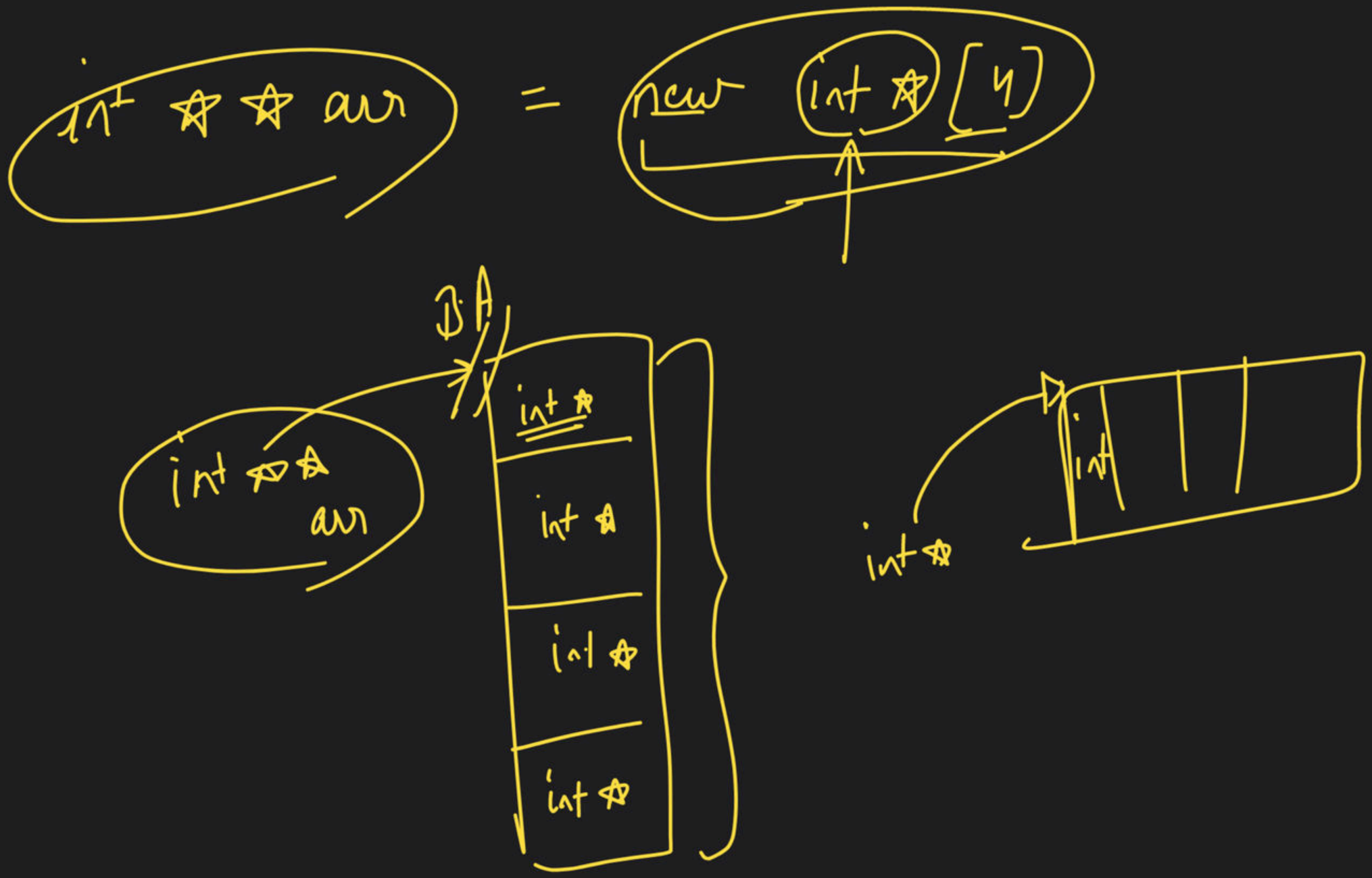
~~int~~ new int[10]

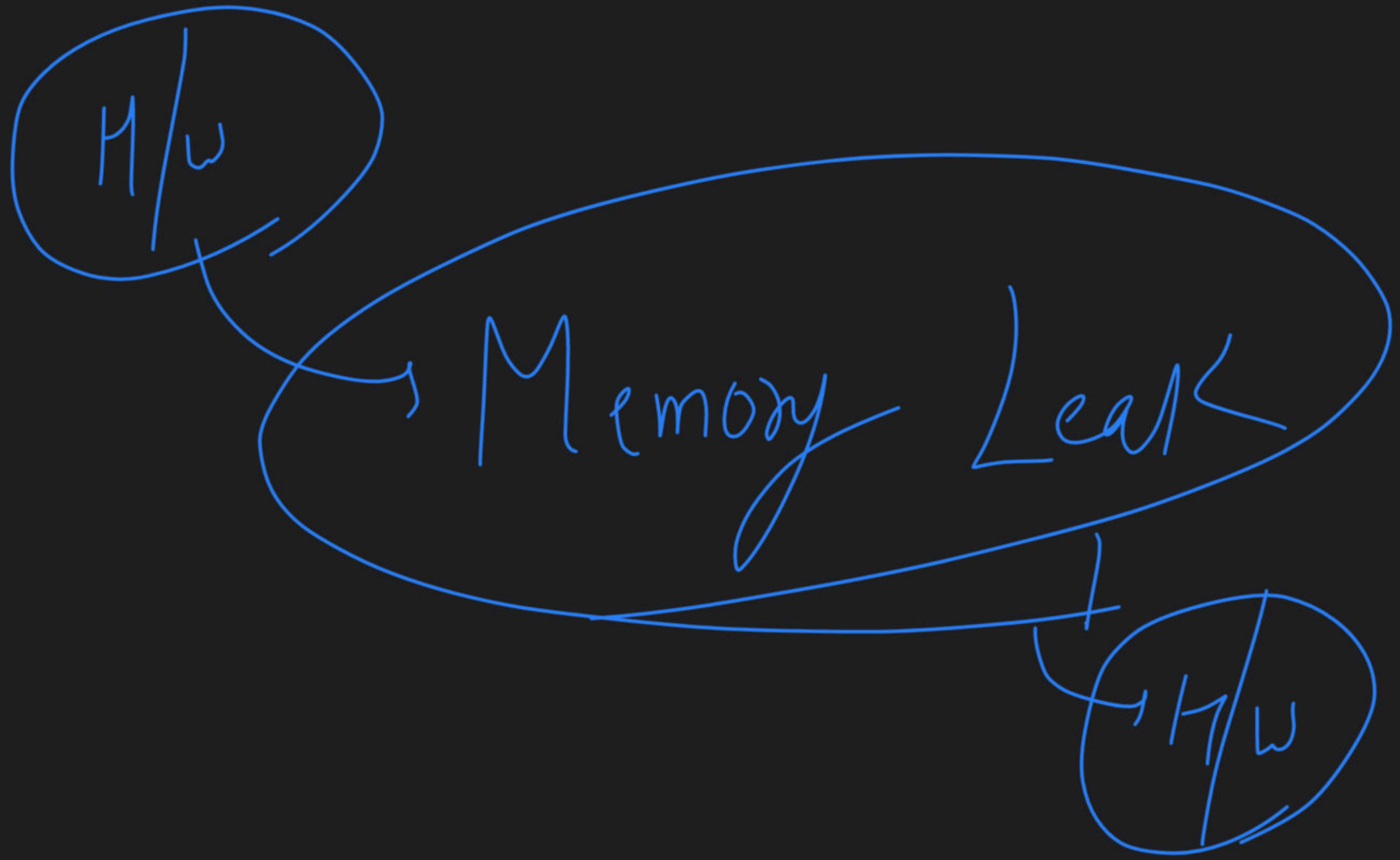
array of integer of size 10

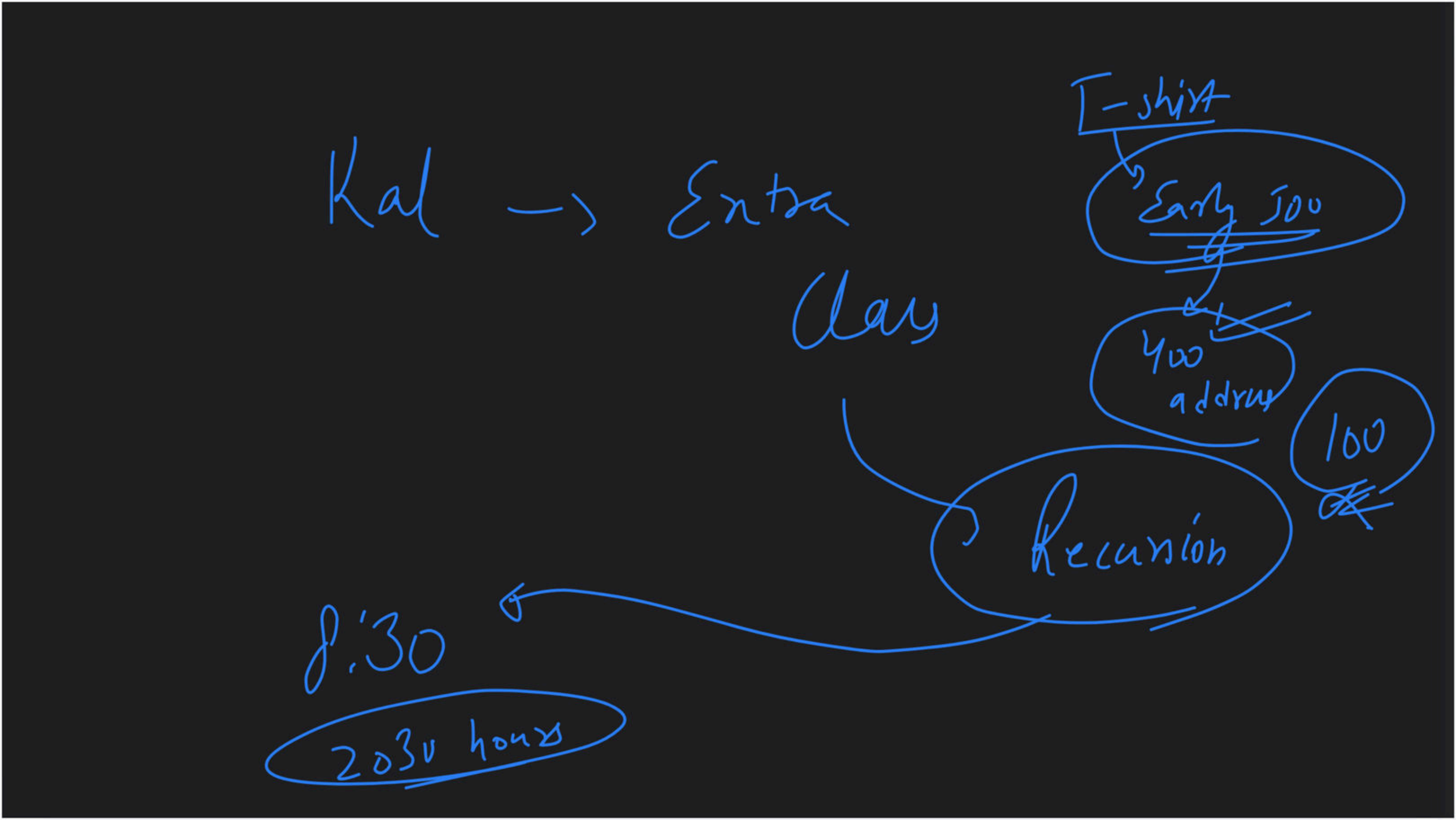
new int*[10]

array of int* of size 10

array of ~~pointer to integer~~ of size 10


int ** arr
=
new int [4]
DA
int **
arr
int *
int *
int *
int *
int *
int
int *


H/w
Memory Leak
H/w


Kal → Extra
Class
T-shirt
Early 500
400
address
100
Recursion
8:30
2030 hours