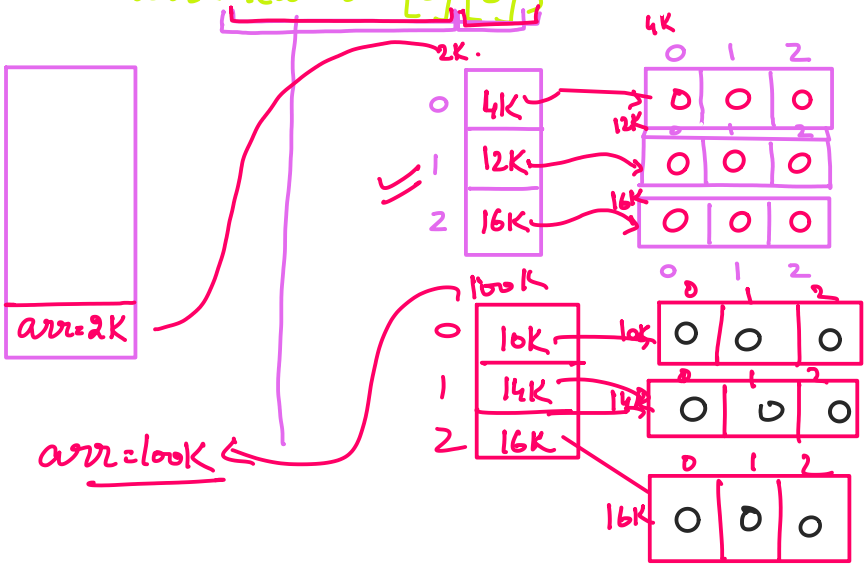
Lec 5

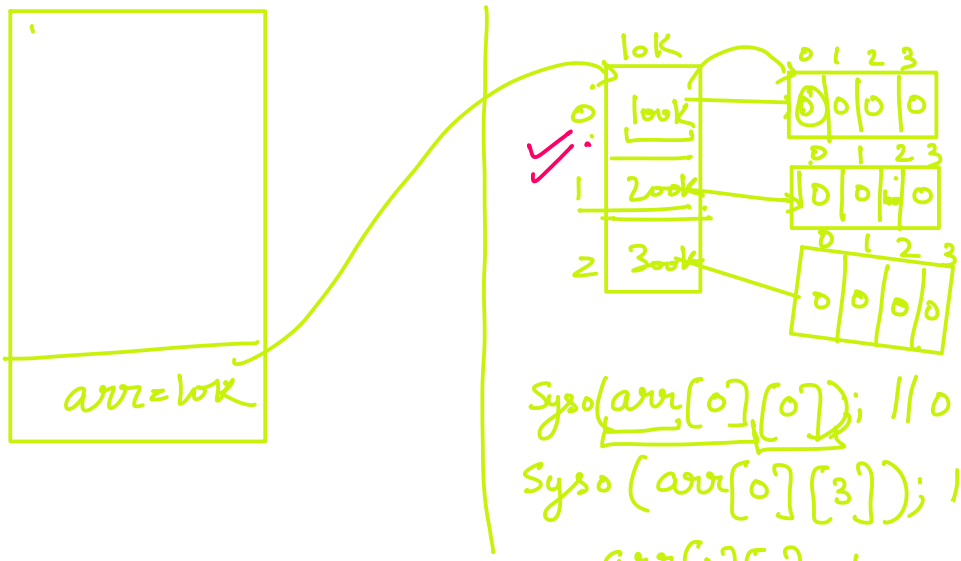
Sunday, 12 January 2020 2:23 PM

2D arrays → Array of arrays.

```
int[][] arr;
Syso(arr);  x → size
arr = new int[3][3];
```

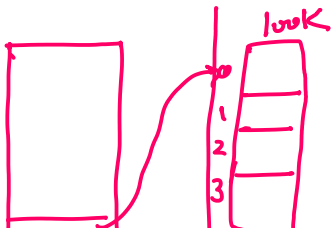



```
arr = new int[3][4];
```



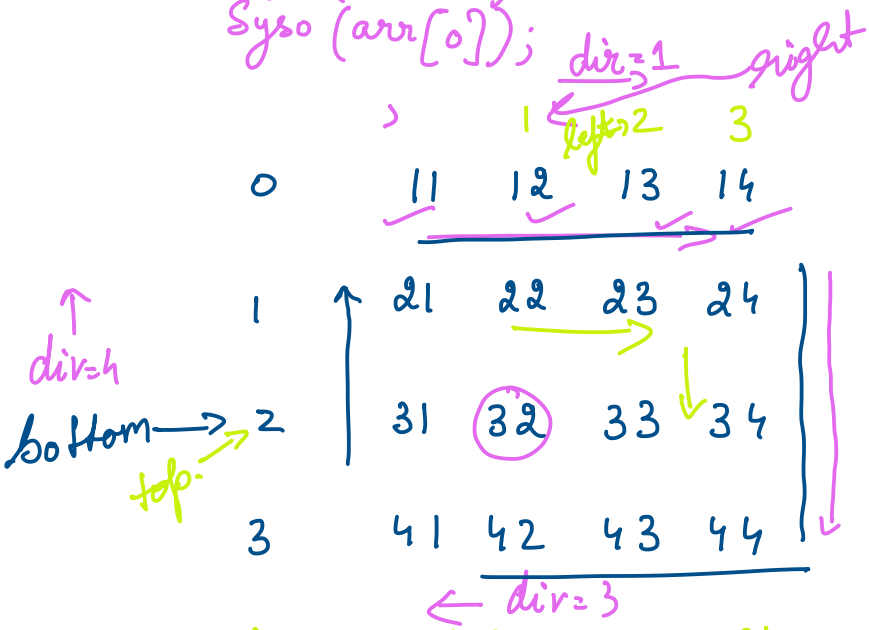

```
Syso(arr[0][0]); //0
Syso(arr[0][3]); //0
arr[1][2] = 100;
```

```
arr = new int[][4]; x
arr = new int[4][]; ✓
```



Syso(arr); //100K
Syso(arr[1]);
Syso(arr[0]);

arr=look




```
int top=0, left=0, right=arr[top].length-1;
    bottom=arr.length-1
    dir=1
int count=(bottom+1)*(right+1); // 16

while(left<=ri - && top<=bottom){

    if(count>0){
        if(dir==1){
            for(int i=left; i<=right; i++){
                Syso(arr[top][i]);
                count--;
            }
            dir=2;
            top++;
        }
    }

    if(count>0){
        if(dir==2){
            for(int i=top; i<=bottom; i++)
                Syso(arr[i][right]);
                count--;
            }
            dir=3
            right--;
        }
    }

    if(count>0){
```

(4)

(2)

```
if(dir==-3){ ✓
    for(int i=right-1; i>=left; i--){
        Syso(arr[bottom][i]);
        Count--;
    }
}
```

① → dir=4, bottom--;

```
if(Count>0){
    if(dir==4){
        for(int i=bottom-1; i>=top; i--){
            Syso(arr[i][left]);
            Count--;
        }
    }
}
```

⓪ → Count=8

→ dir=1, left++;

left → 0 1 2 3 ← right

0 11, 12, 13, 14 ④

bottom → 1

top

11, 12, 13, 14

arr = { 3, 1, 5, 1, 5, 4, 6, 3, 4 }

array.

↳ print → loop once. ↳ ⑥

→ without extra space with one loop.

approach 1.

```
for(int i=0; i<arr.le__; i++){
    for(int j=0; ____ ; j++){
        if(arr[i][j] == data){
            return true
        }
    }
}
return false
```

=> n x n

25

10

arr = [3, 1, 4, 5, 5, 7, 3, 1, 4] => [3, 1,

ans = 0; => 0 ^ 3 ^ 1 ^ 4 ^ 5 ^ 5 ^ 7 ^ 3 ^ 1 ^ 4

```
for(int i=0; i<arr.length; i++){
    ans = ans ^ arr[i];
}
return ans; //7
```

2 -> 010

3 -> 011

4 -> 100

2^2 -> 010
       010
       000

2^2 -> 0

$n \wedge n = 0$

$n \wedge 0 = n$

→ properties

$a \wedge a = 0$

$a \wedge 0 \Rightarrow$

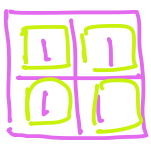
0 1 0
0 0 0
0 1 0 ⇒ 2

ans = 0 ⇒

3 1 3 2 1

0 0 0
0 1 1
ans ⇒ 0 1 1
0 0 1
0 1 0 ⇒ 2
0 1 1
0 0 1 ⇒ 1
0 1 0

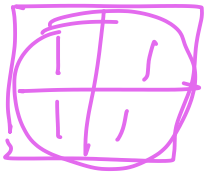
approach 1



⇒ Sum of all Submatrice

1 length ⇒ 4

2 length => 4 x 2 = 8



=> 4 length -> 4

16.