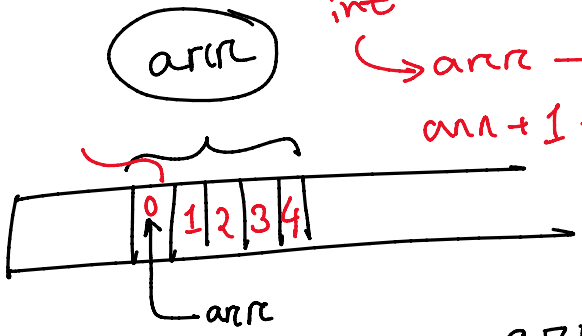
Class 2

Monday, December 20, 2021 8:54 PM

Array

int arr[5];



int

arr → 14

arr + 1 → 14 + 4 → 18

arr[i] → arr + i

arr[0] → arr + 0

arr[1] → arr + 1

arr[2] → arr + 2

⋮

arr[i] → arr + i

n = 10

1 2 3 4 ⋮ 10 → 1 2 3 4 ⋮ 10

$\sum_{i=1}^{5} i^2$

1, 2, 3, 4, 5

$1^2 + 2^2 + 3^2 + 4^2 + 5^2$

$5\sum_{i=1}^{5}(2i-1)^2$

$\sum_{i=1}^{5} 5(2i-1)^2 \leftarrow 5\cdot 1^2 + 5\cdot 3^2 + 5\cdot 5^2 + \cdots + K$

$(2\cdot 1-1)^2 = (2-1)^2 = 1^2$

$(2\cdot 2-1)^2 = (4-1)^2 = 3^2$

$(2\cdot 3-1)^2 = (6-1)^2 = 5^2$

$\sum_{i=1}^{5}\sum_{i=1}^{5} i^2$

$(2\cdot2-1)^2=(4-1)=3$

$(2\cdot3-1)^2=(6-1)^2=5^2$

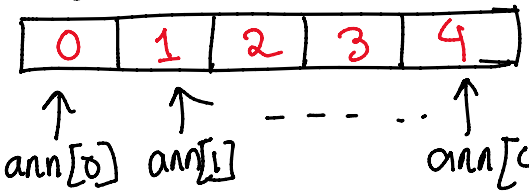
$i=1$ $i=1$

r=4

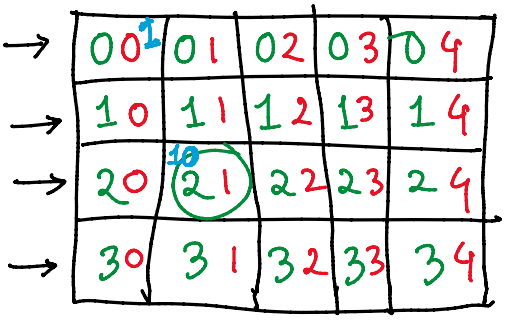
c=5

int arr[5];

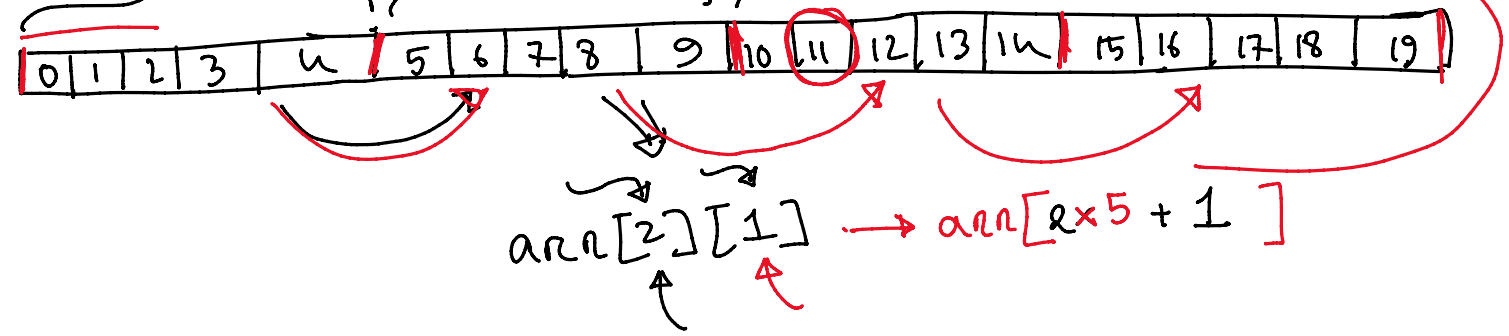
r=1
c=5



2D array



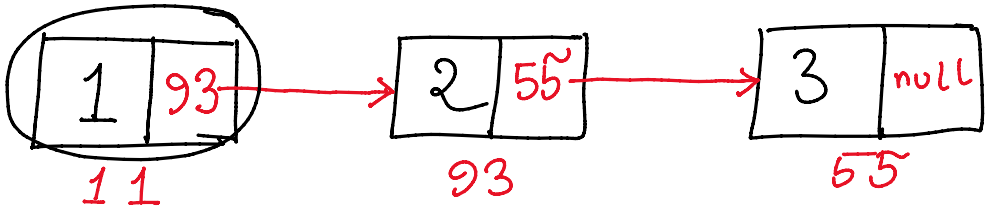
1s → 10^8 took ~ 10 কোটি



arr[x][y] → arr[x×C + y]

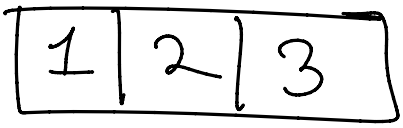
```
struct node
{
  int value;
  int *next;  //pointer
}
```

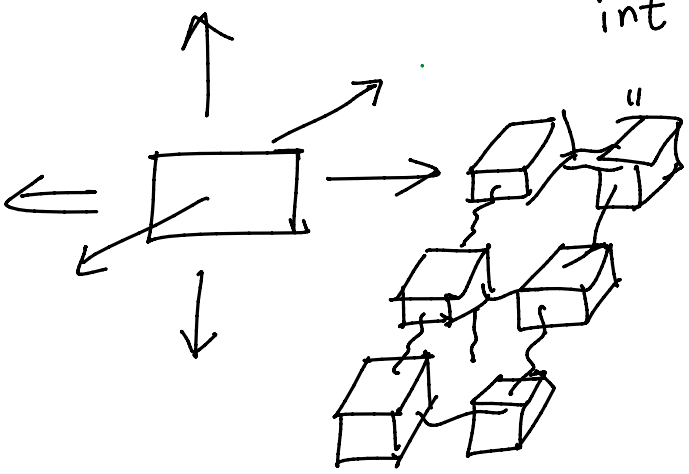
node head;



head.value

head.next





int *back

int *loc[6]

*front

up

down

left

night

Splay Tree

Treap

↙

Tree + Heap