

① 시간복잡도 / 자료구조

② python vs C/C++

③ 이진리스트 \Rightarrow 복사된 종류 3가지.

① 시간복잡도 / 자료구조

$n \times n \rightarrow n^2 + n$
 $[1, \dots, n] \Rightarrow O(n^2)$

$3n^2 + n + 1 \Rightarrow O(n^2)$
 $n^4 - n + 1 \Rightarrow O(n^4)$
 $n^3 - n \Rightarrow O(n^3)$
 $315 \Rightarrow O(1)$

알고리즘의 성능 평가 수단

시간복잡도
okay
↓
시간복잡도

VS 공간복잡도
메모리
↓
메모리복잡도

time off
memoization
I → 메모리
↓
II → I

$[3, 5, 1, 2, \dots, 10]$ 7이 있는가?

문제 $[3, 5, 1, 2, \dots, 10] \Rightarrow$ 선형탐색
↑ ↑ ↑
 ≈ 7 ?

선택
① 정렬
 $[1, 2, 3, 4, \dots]$
 $O(n^2) \checkmark$
 $O(n \log n)$
이진탐색
② $[\dots]$
 $[\dots]$
 $O(\log n)$
 $O(n \log n) + O(\log n)$

$O(n)$
 $O(\log n)$

\times

[4, 5, 10, 12, 6, 7, 1, 2, 3, 4, 11, 11]

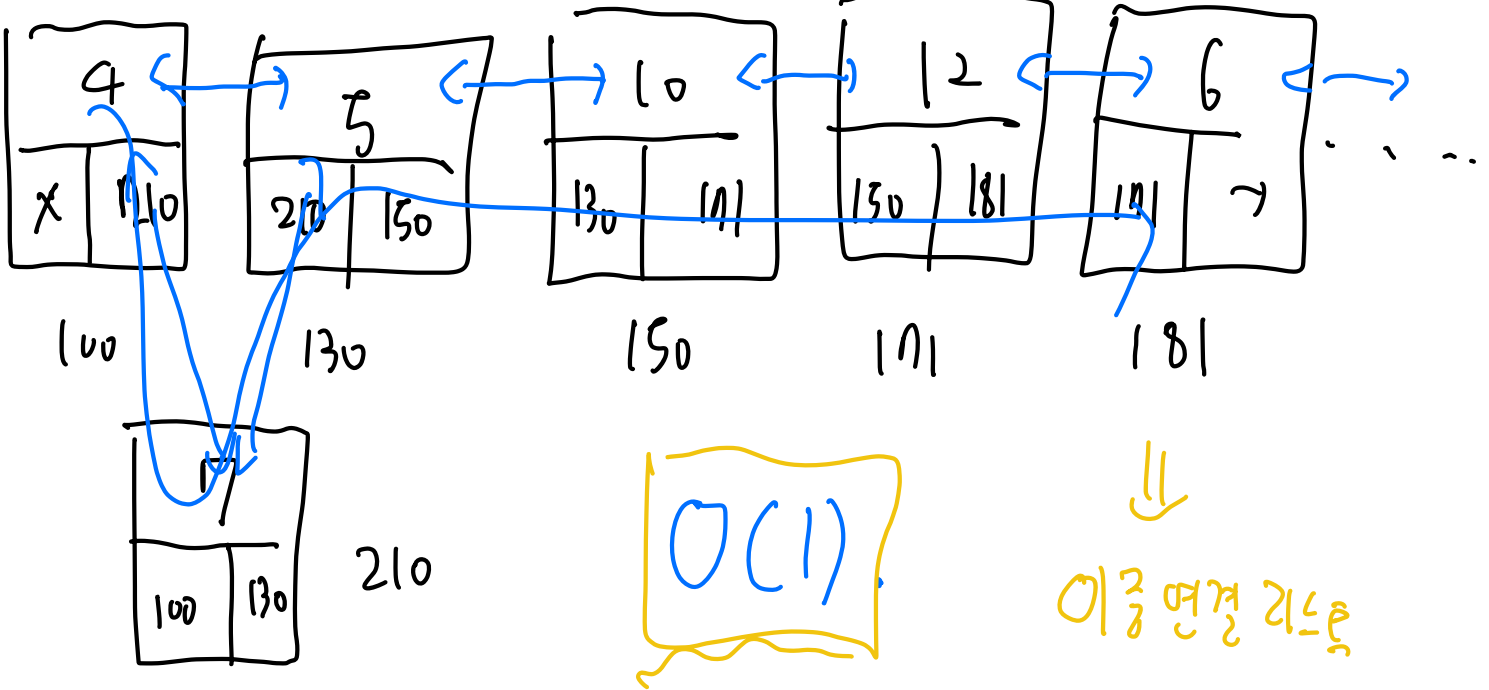
=> Data Skill - Representation
연산을 가한다.

Insert:

7

$O(n)$

가장



$O(1)$

이중 연결 리스트

② Python vs C/C++.

$a = 3$

$a = \text{"my"}$



vs

int $a = 3$

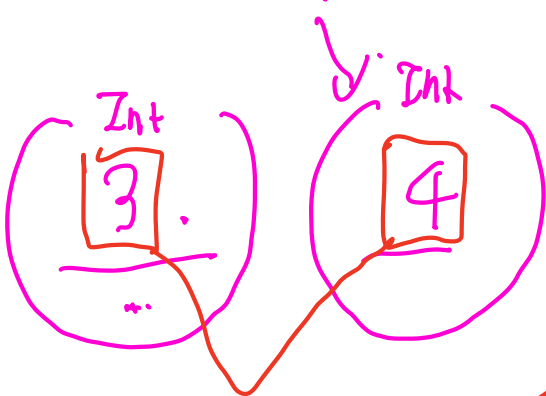
↳ 4 bytes.



int* ptr = &a.

$a = 3$

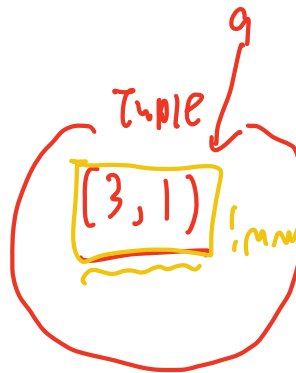
$a = 4$



변경 불가능! ✓

immutable

$a = (3, 1)$

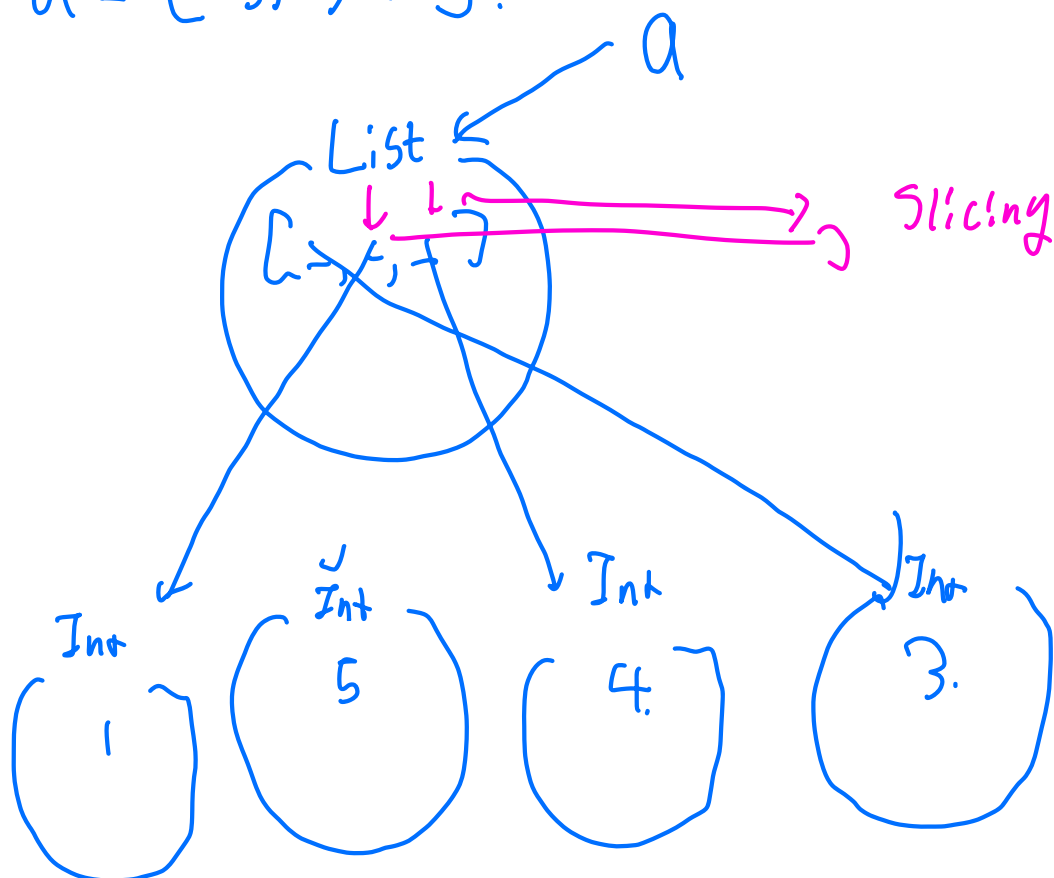


$a[0] = 2.$

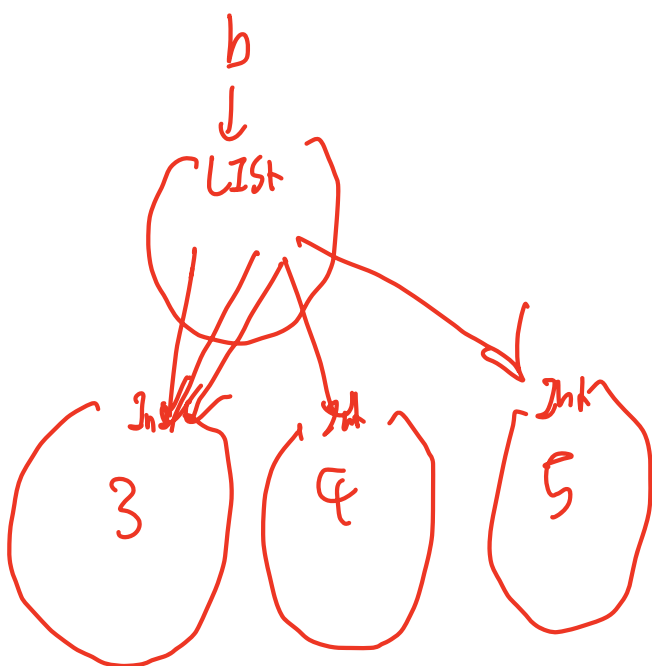
tuple. Class is not support item assignment ✓

$a = [5, 1, 4]$

$a[a] = 3$

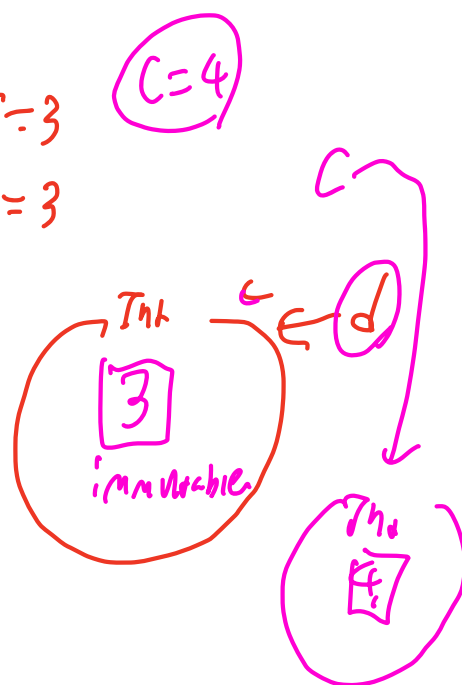


$b = [3, 3, 3, 4, 5]$



$c = 3$

$d = 3$



③ 이종근은.

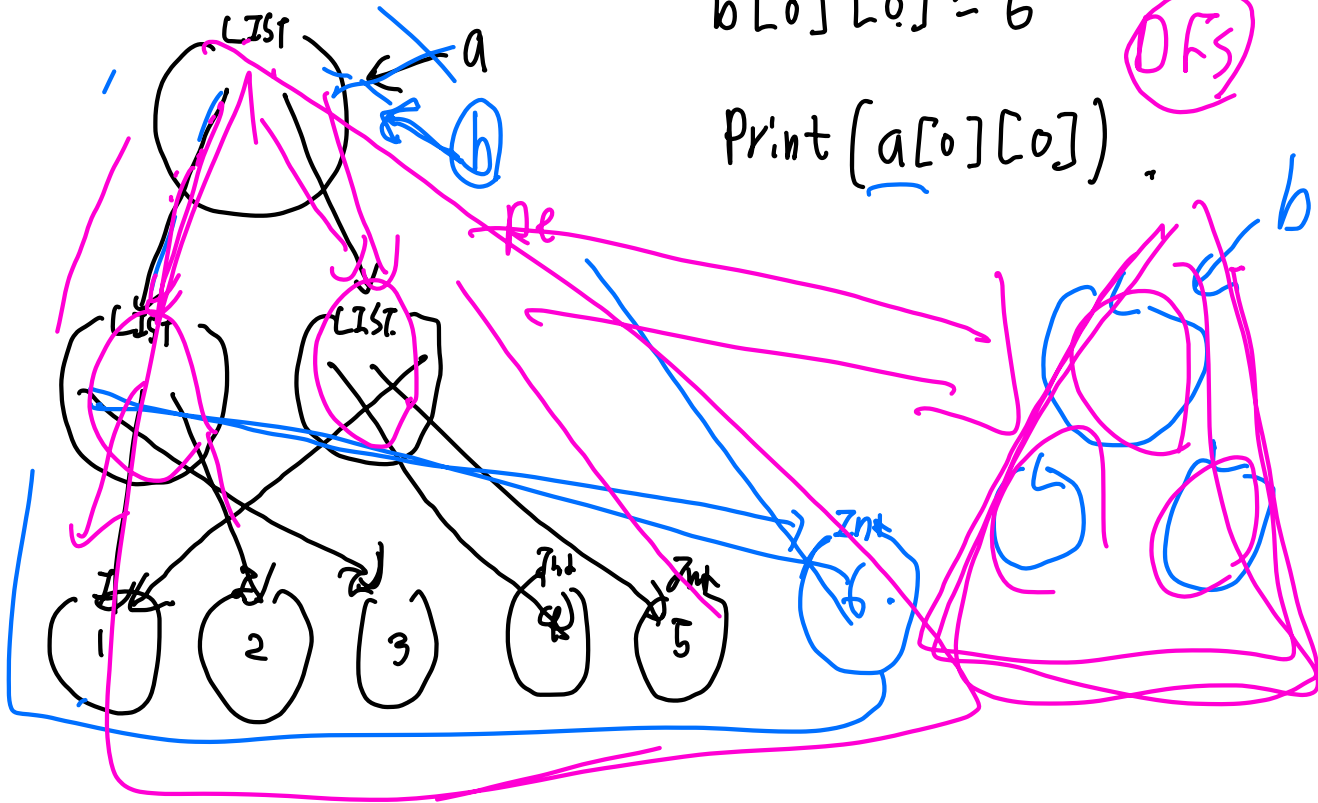
$$a = [[3, 1, 2], [4, 5, 1]]$$
$$b = a$$

b = copy.deepcopy(a)

$$b[0][0] = 6$$

Print (a[0][0])

DFS



Subscriptable.

a[0]

"Int" object is not subscriptable

Terrible

for 'item' in

