Divide n conquer

2019.05.07

15 이현준

Divide n conquer

- Divide n conquer이란
- Merge sort!
- Binary search!

ARGOS

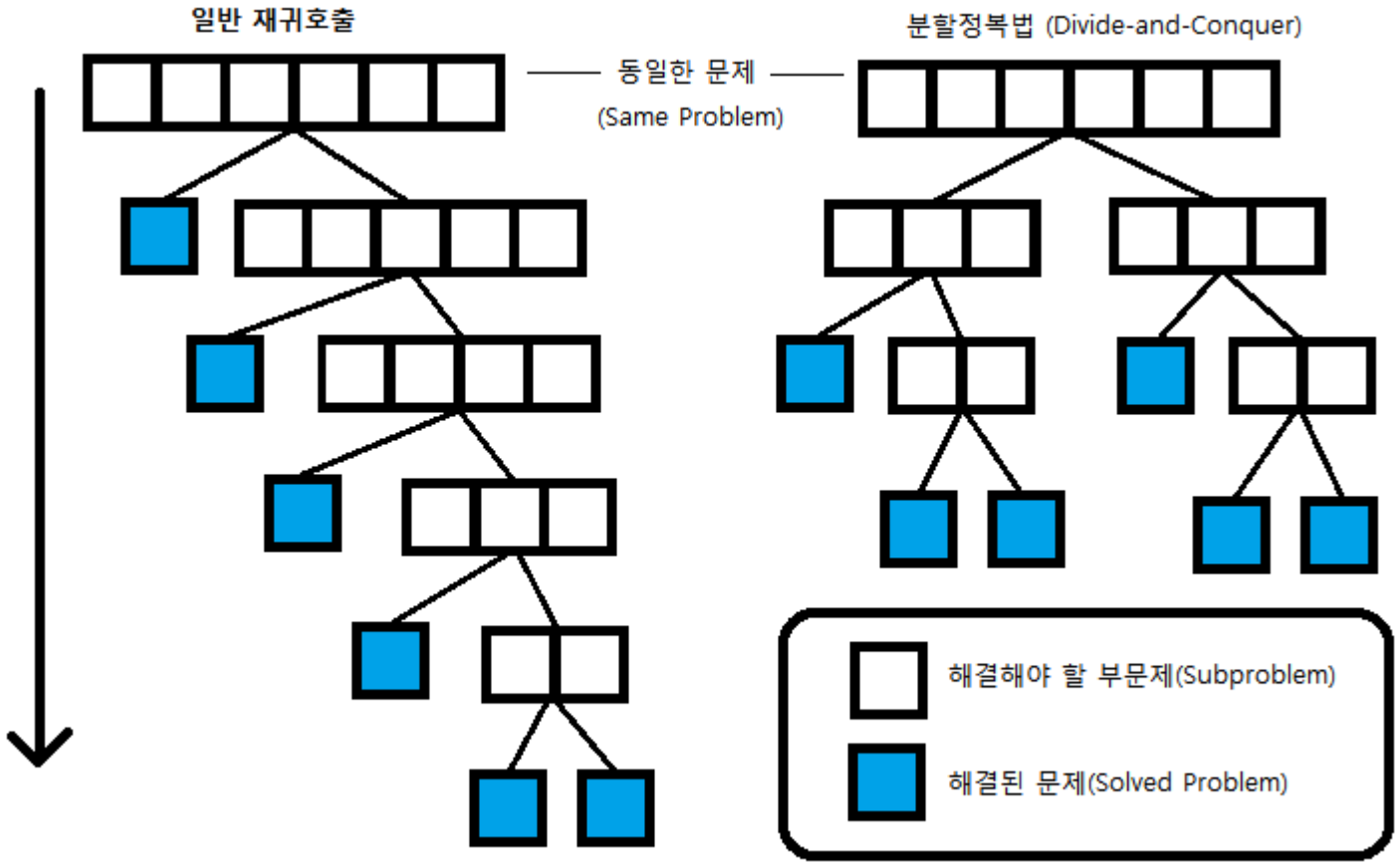
Divide n conquer란?

Divide : 나누다.

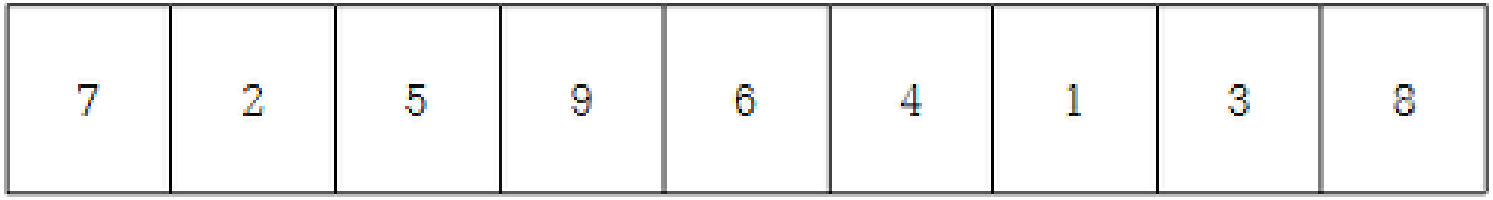
Conquer : 정복하다.

=> 나누어서 정복한다.

Divide n conquer란?



Divide n conquer란?



Sort를 해야된다!! 무슨 방법을 쓰지?

Divide n conquer란?

ARGOS

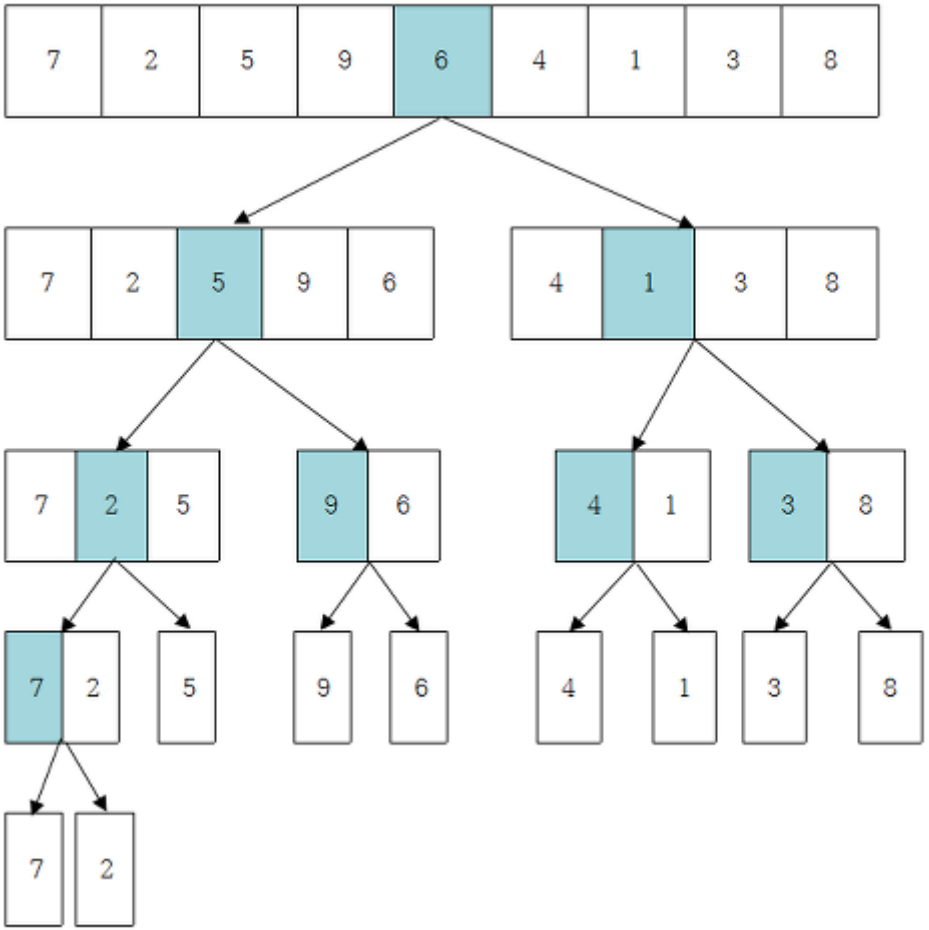
선택정렬 : O(n^2)

삽입정렬 : O(n^2)

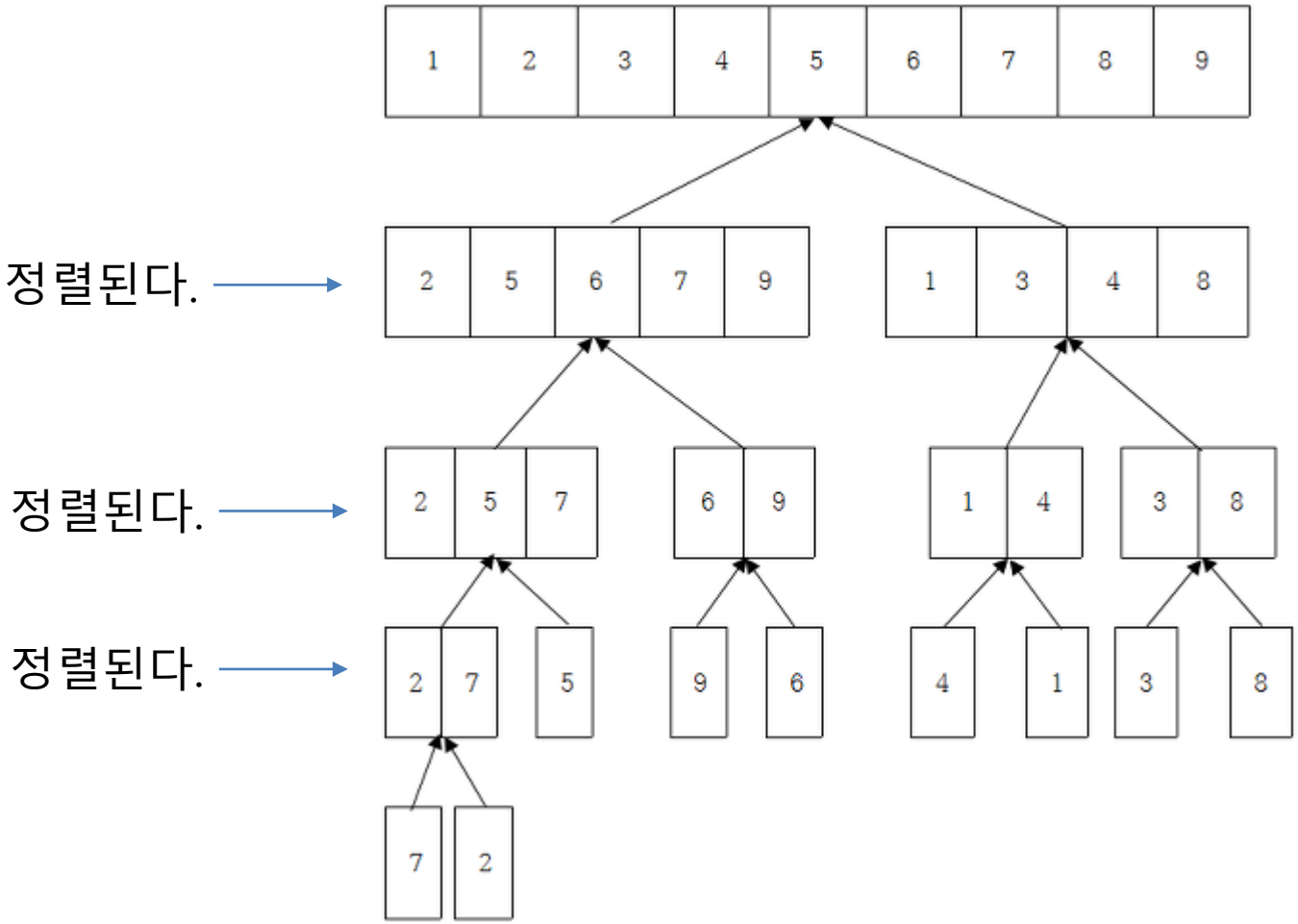
버블 정렬 : O(n^2)

퀵 정렬 : O(n log n)

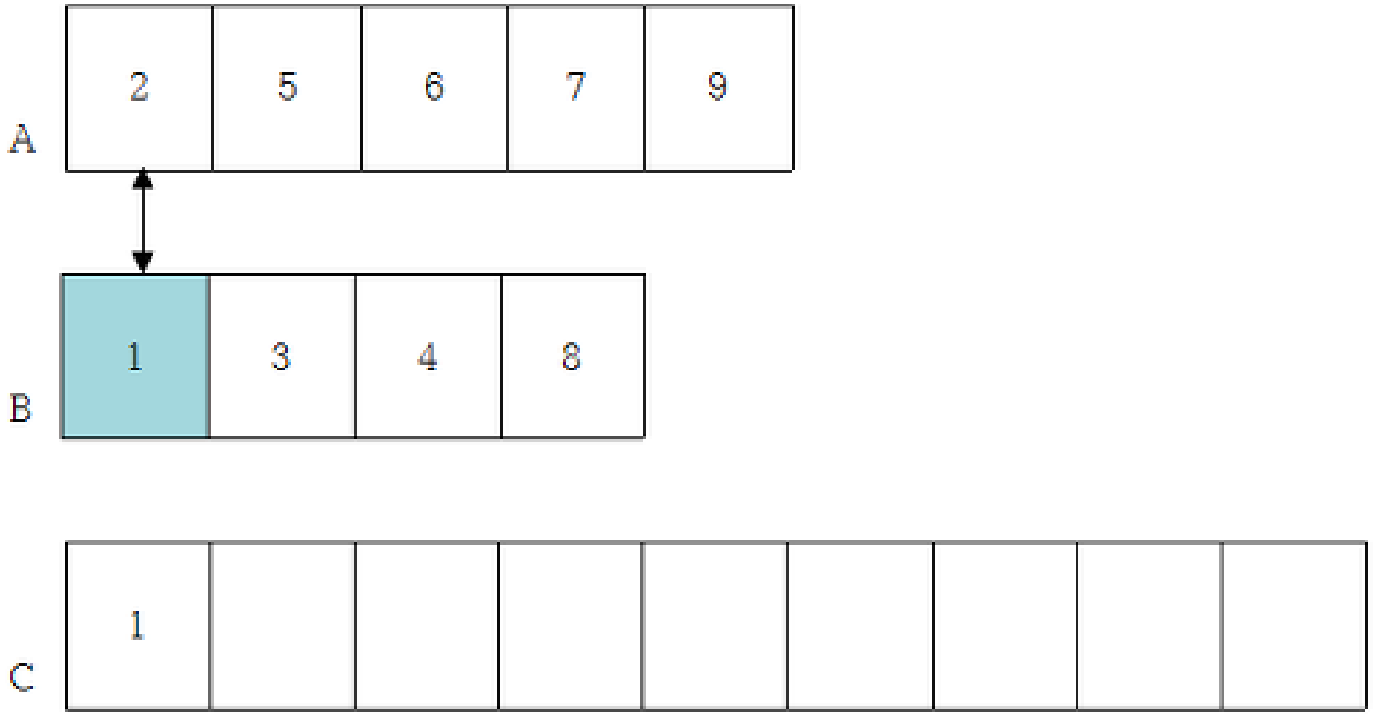
Merge sort



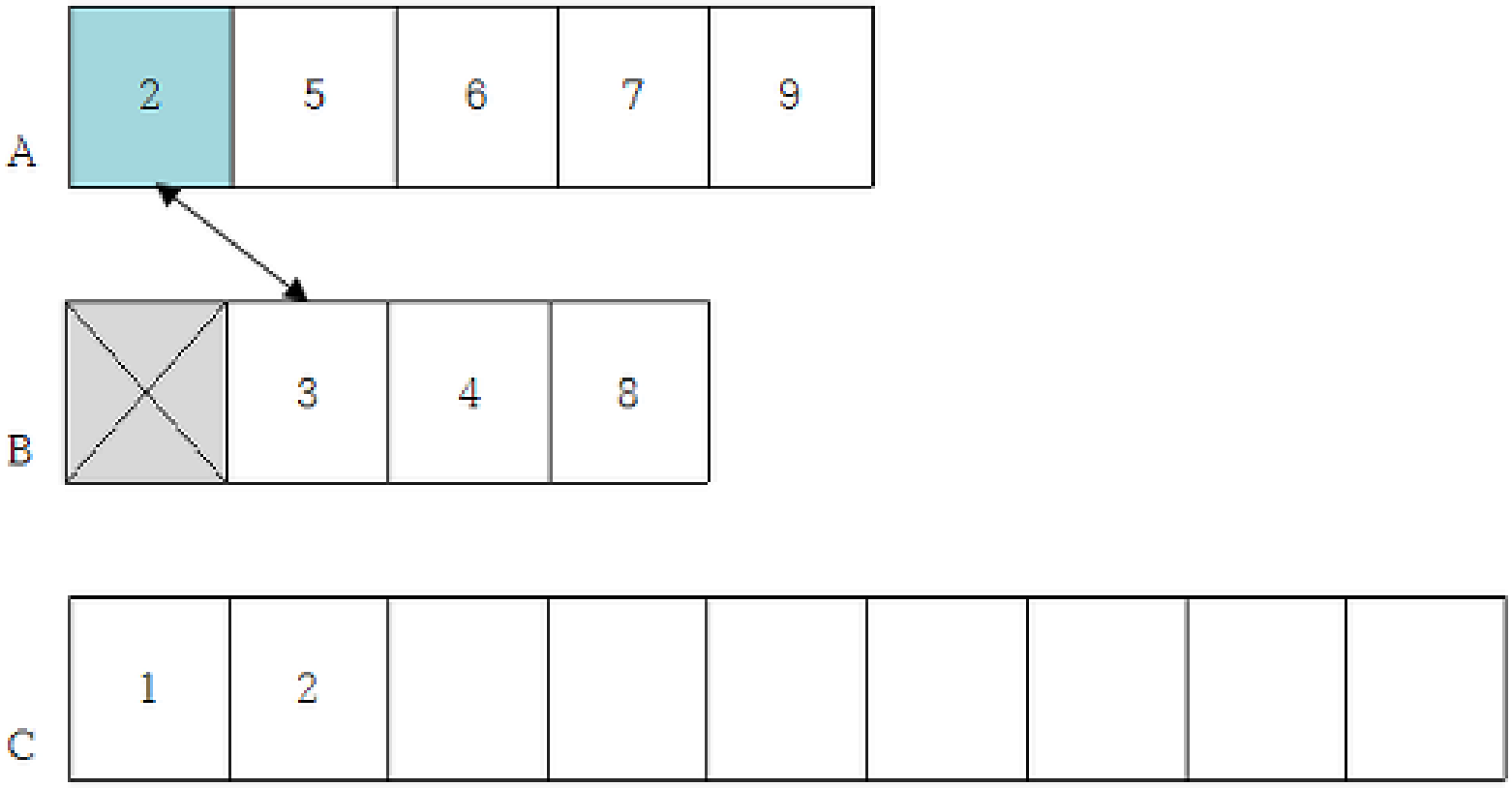
Merge sort


1 2 3 4 5 6 7 8 9
정렬된다.
2 5 6 7 9
1 3 4 8
정렬된다.
2 5 7
6 9
1 4
3 8
정렬된다.
2 7
5
9 6
4 1
3 8
7 2

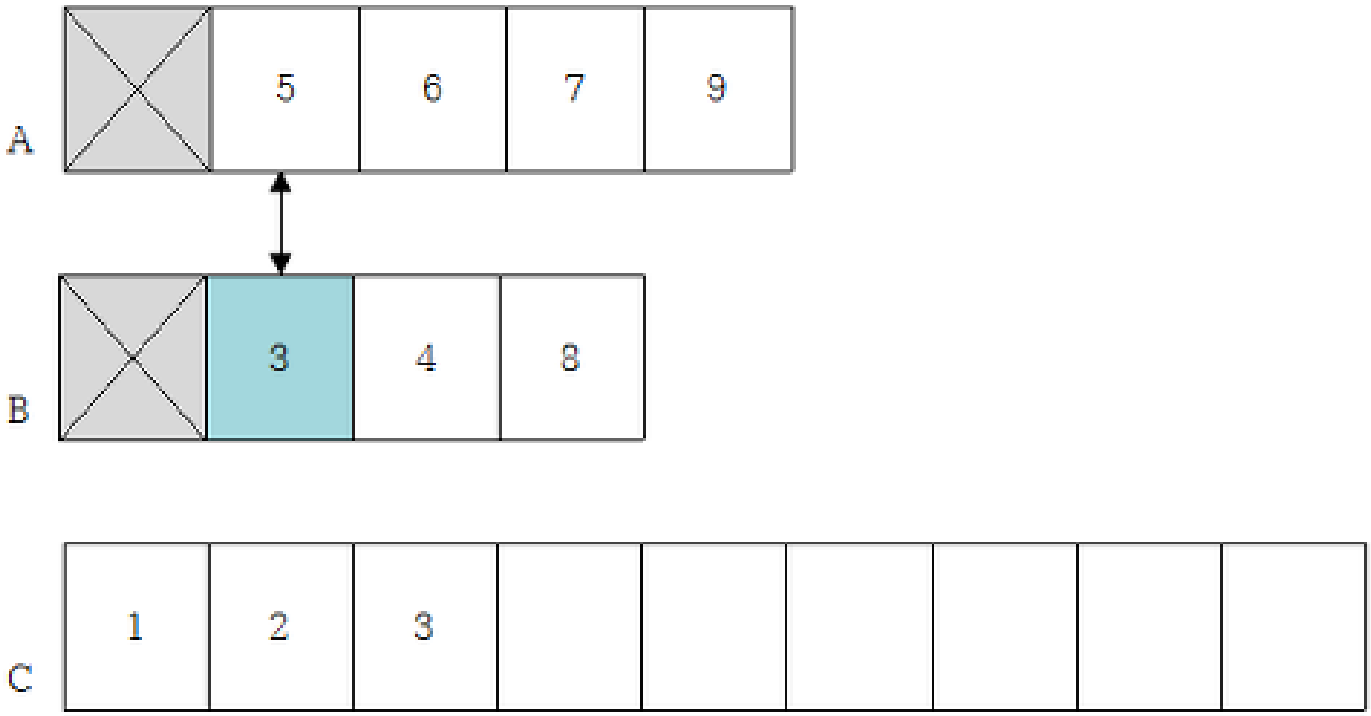
Merge sort



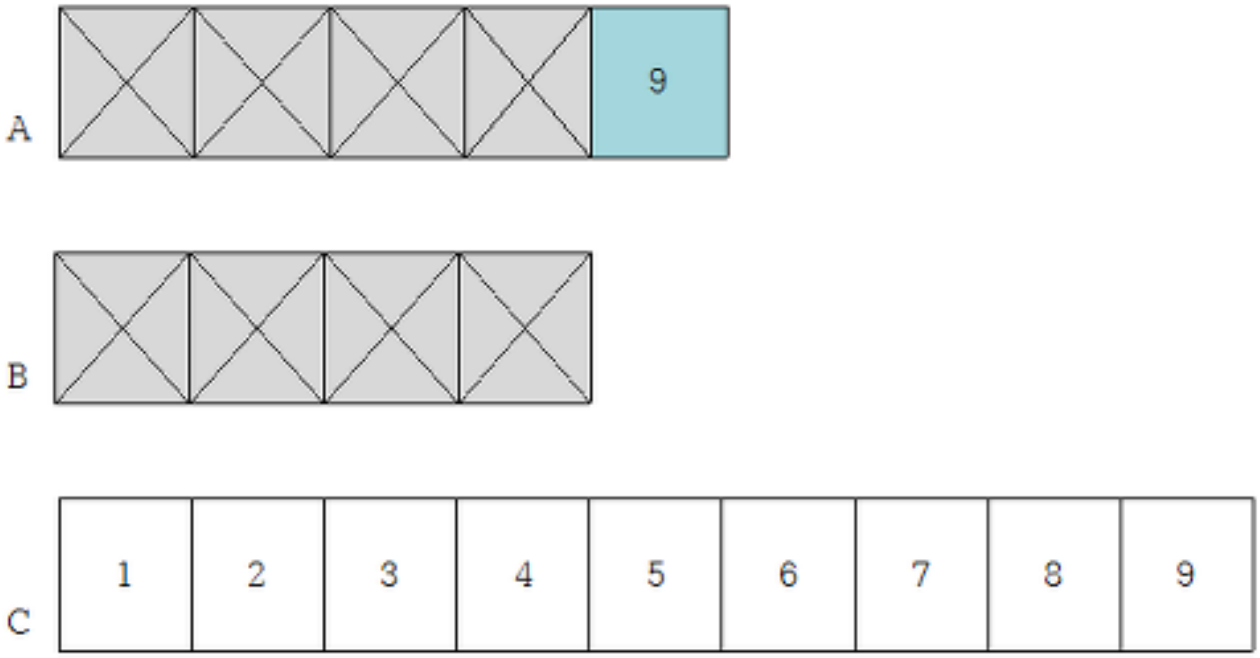
Merge sort



Merge sort



Merge sort



Merge sort

Merge sort의 시간복잡도는 O(n logn)이다!

Binary search

우리가 알파벳 'A'로 시작하는 단어가 적힌 n장의 카드 중에서 'Apple'이라는 단어가 몇 번째 카드에 적혀있는지를 찾는다고 하자.

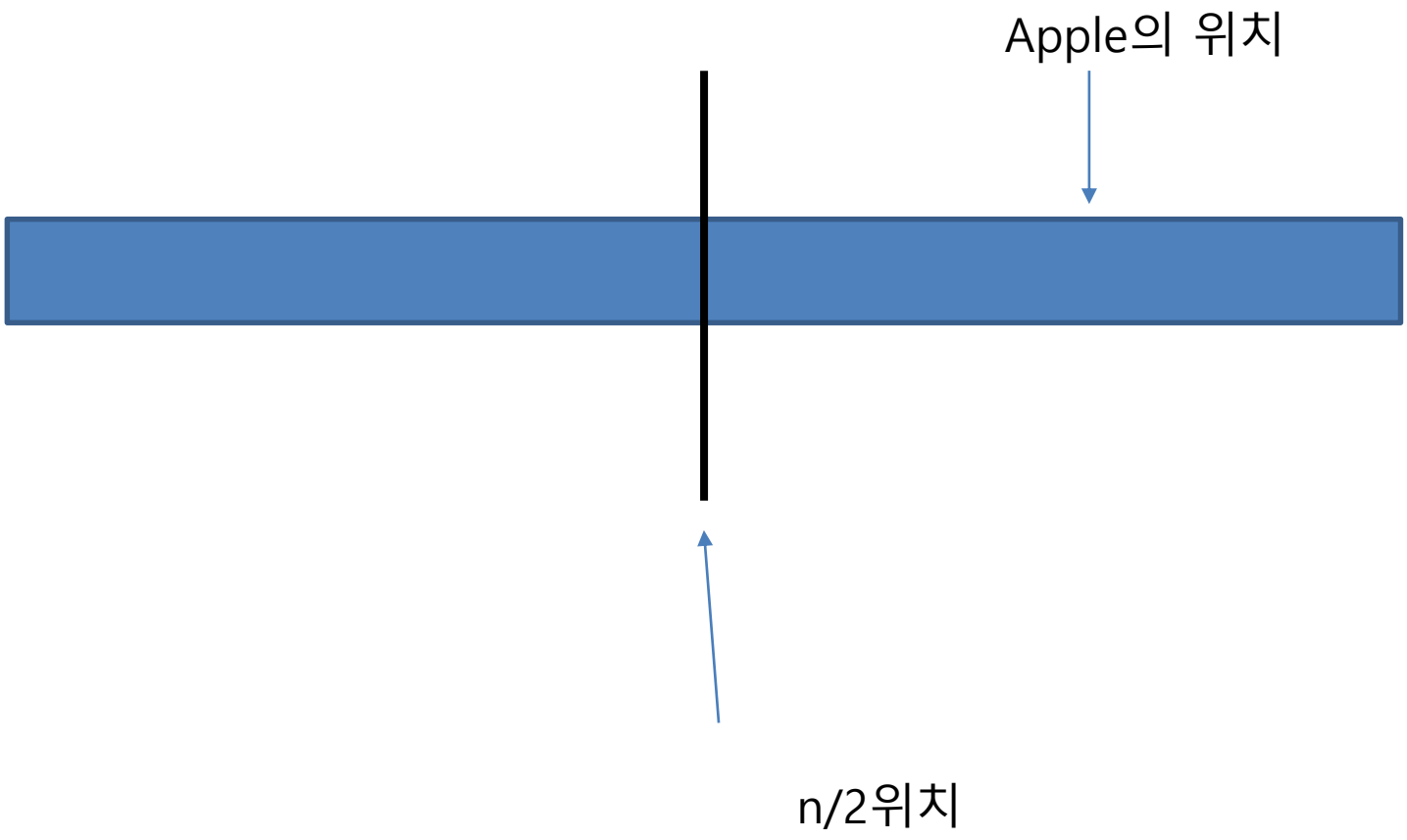
각각의 카드에는 중복된 단어가 존재하지 않으며 카드의 순서는 알파벳 사전순서로 되어 있다. 작업의 단위는 '카드를 한 장 확인하는 행위'이다.

Binary search

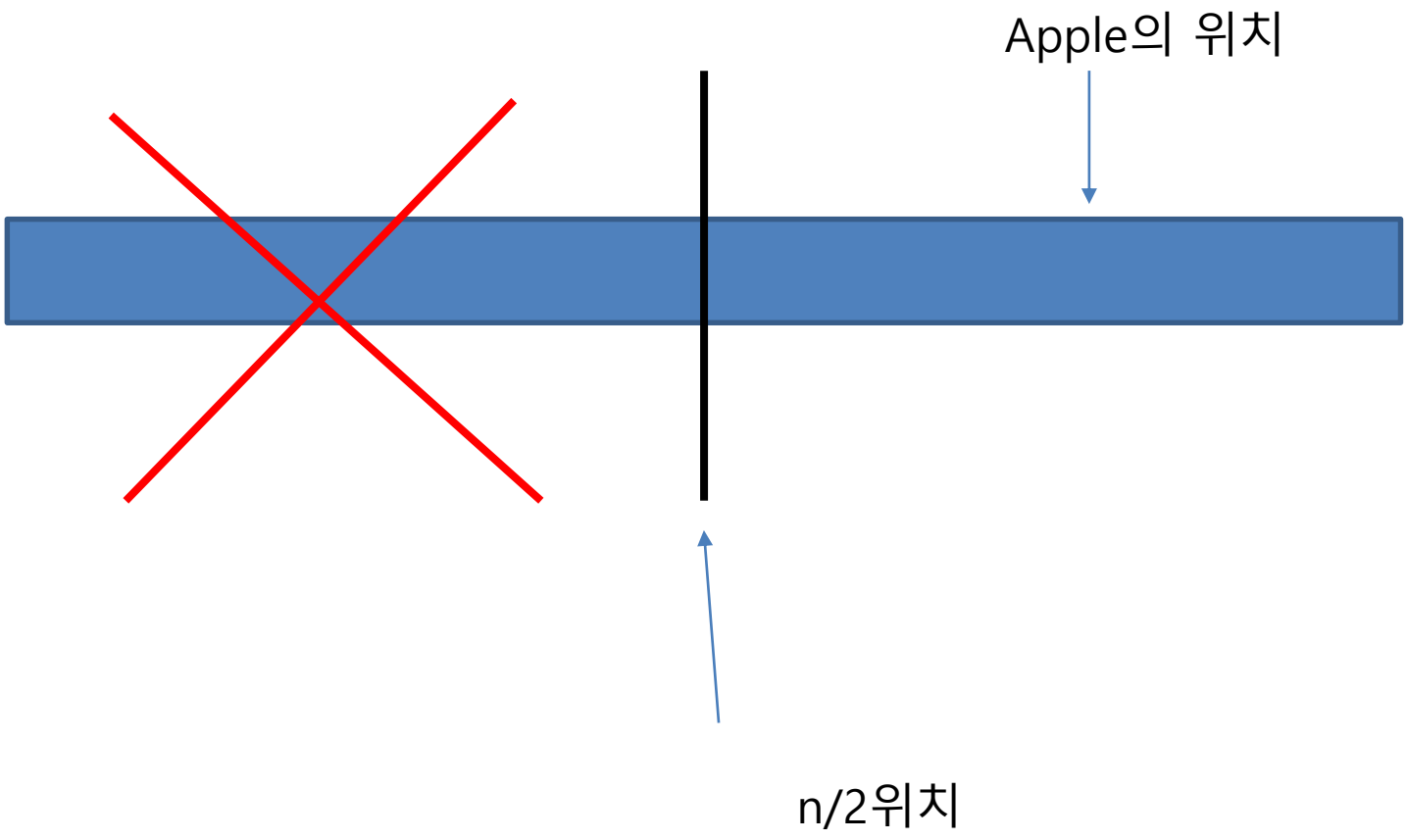
조건!

- 데이터가 오름차순으로 정렬되어 있어야 한다.
- 시간 복잡도는 logN이다.

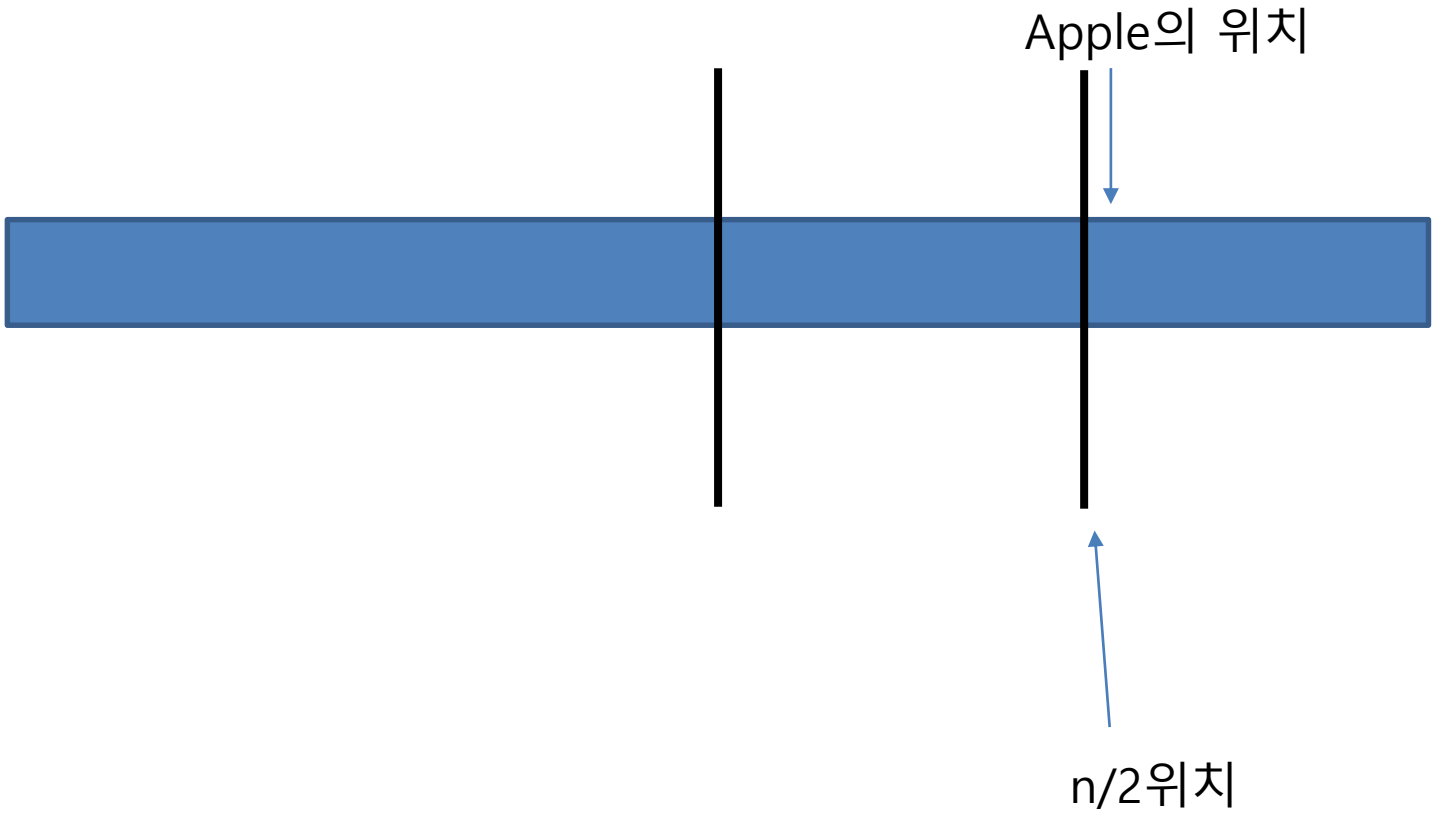
Binary search



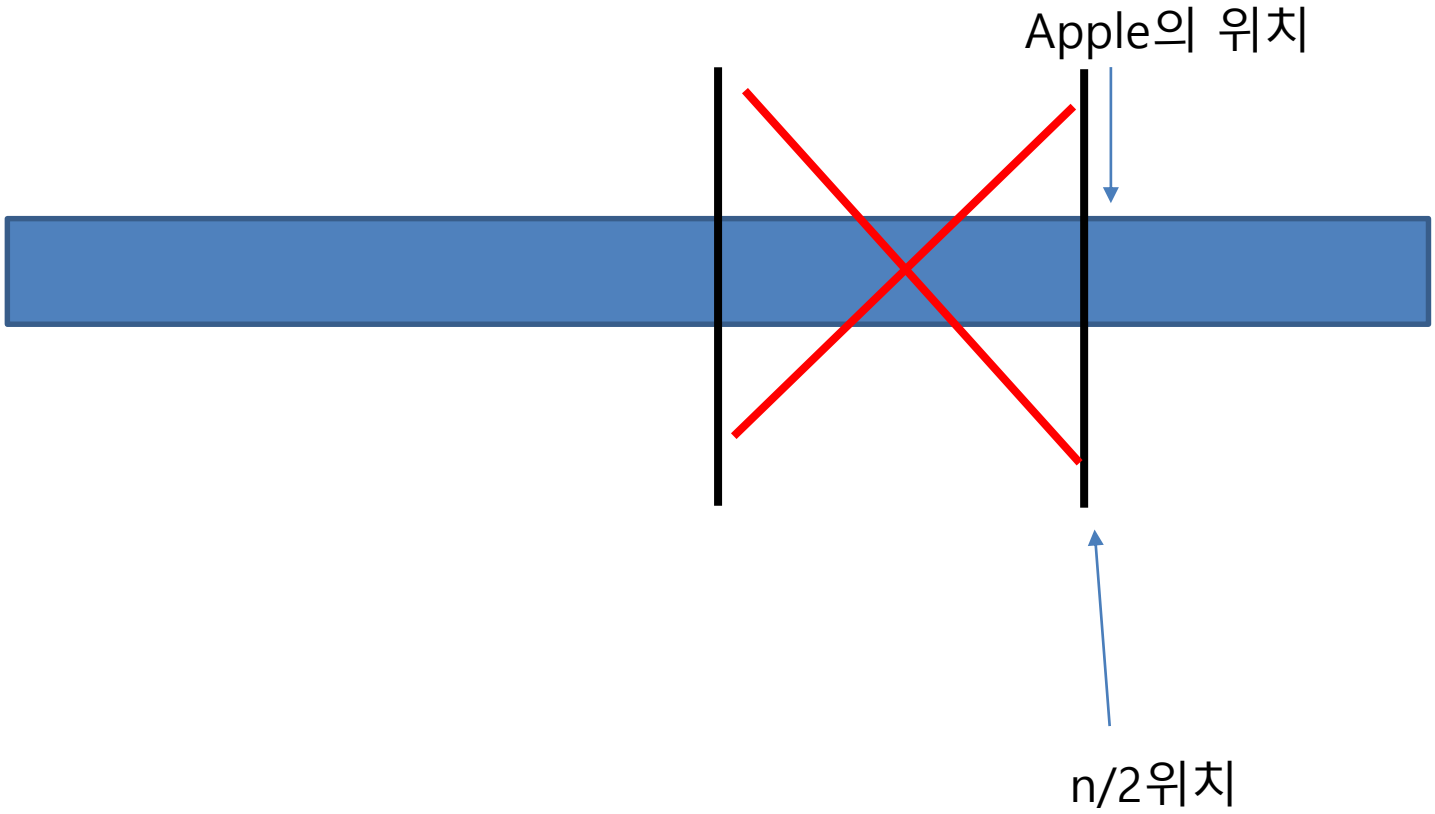
Binary search



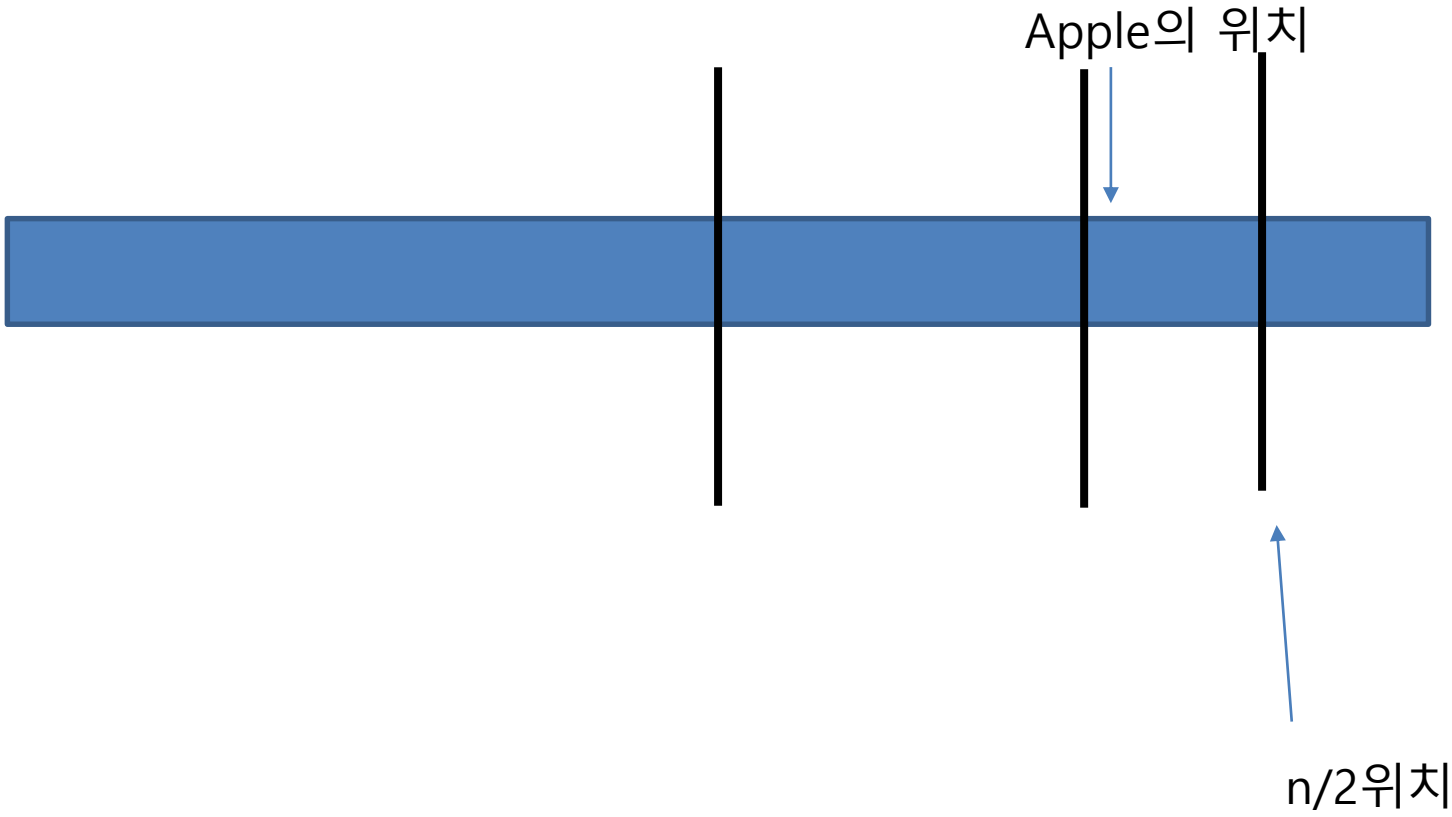
Binary search



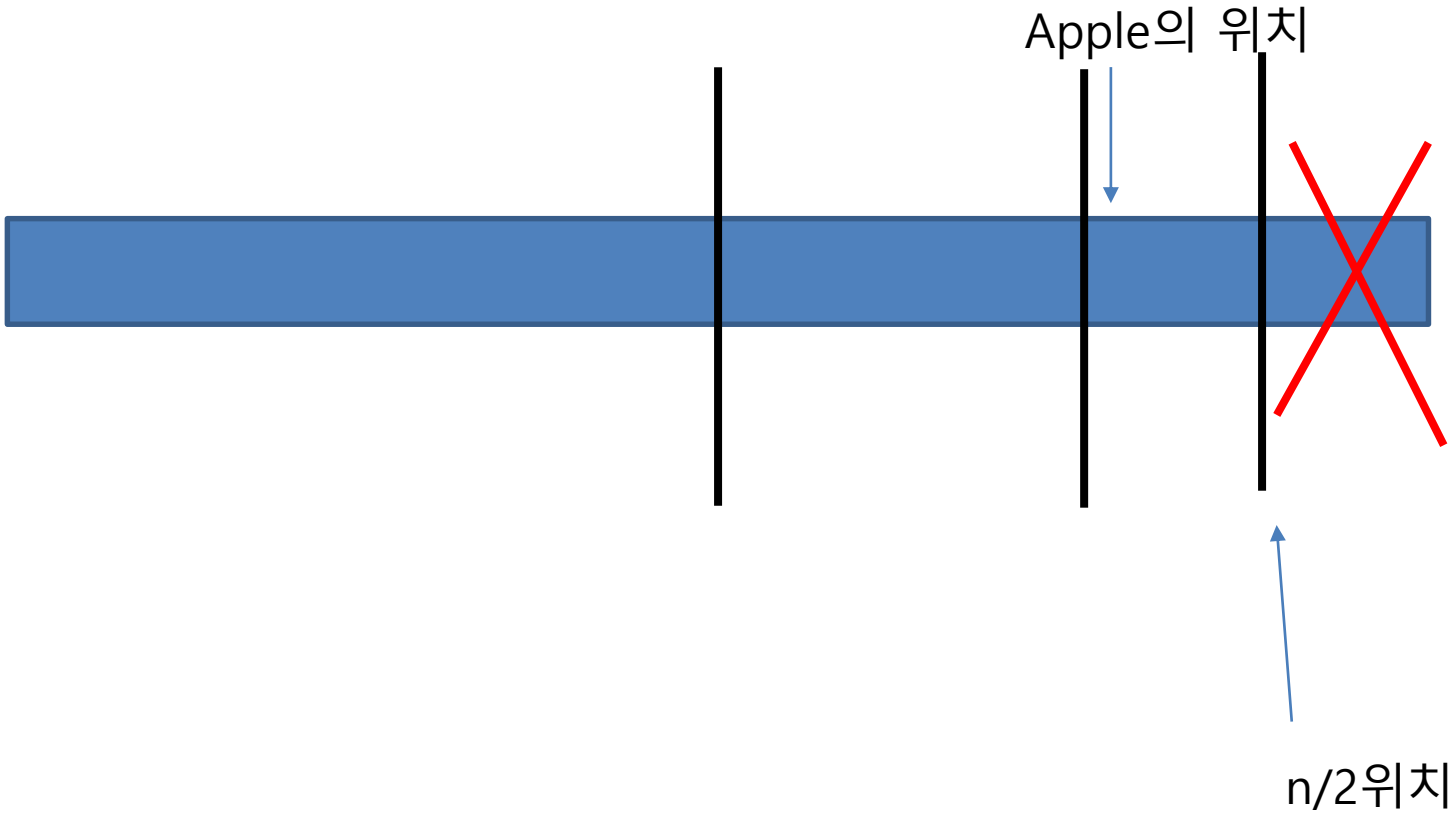
Binary search



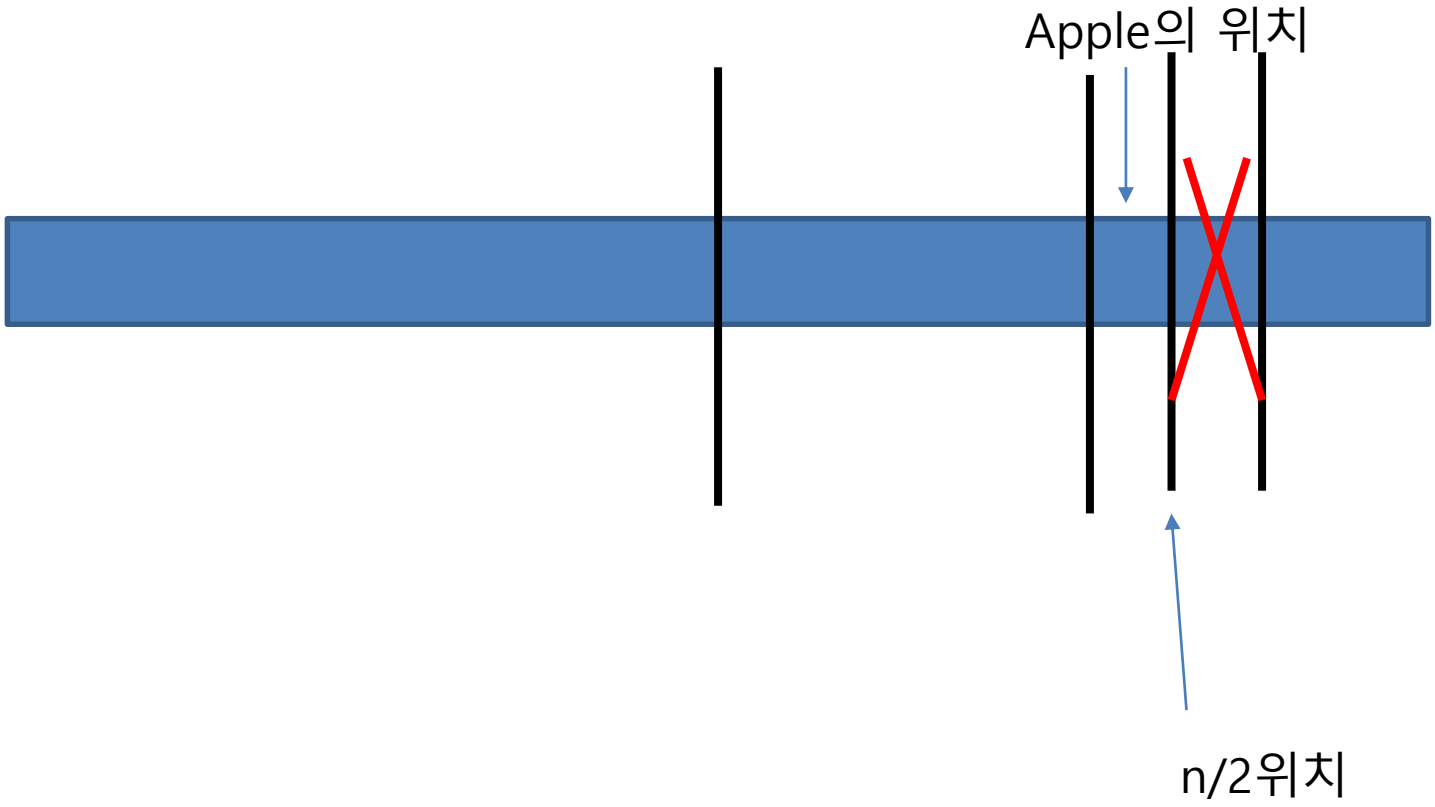
Binary search



Binary search



Binary search



Q & A

Thank You for Listening