

1. Lemma 5.2 [Maximum number of nodes]:

(1) The maximum number of nodes on level i of a binary tree is 2^{i-1} , $i \geq 1$.

ch. 15 p

(2) The maximum number of nodes in a binary tree of depth k is $2^k - 1$, $k \geq 1$.

이진수가 있으면 총 개수

2.

[Program 5.19] Initial attempt at union-find functions.

```
int simple_find(int i)
{
    for ( ; parent[i] >= 0 ; i = parent[i])
        ;
    return i;
}

void simple_union(int i, int j)
{
    parent[i] = j;
}
```

ch 5, 261 p

강능가 이해가 안돼.

5. Every tree must have a specially designated root node. (T/F)

professor's solution: True

Chat Gpt's answer : false

어느 게 맞을까요?

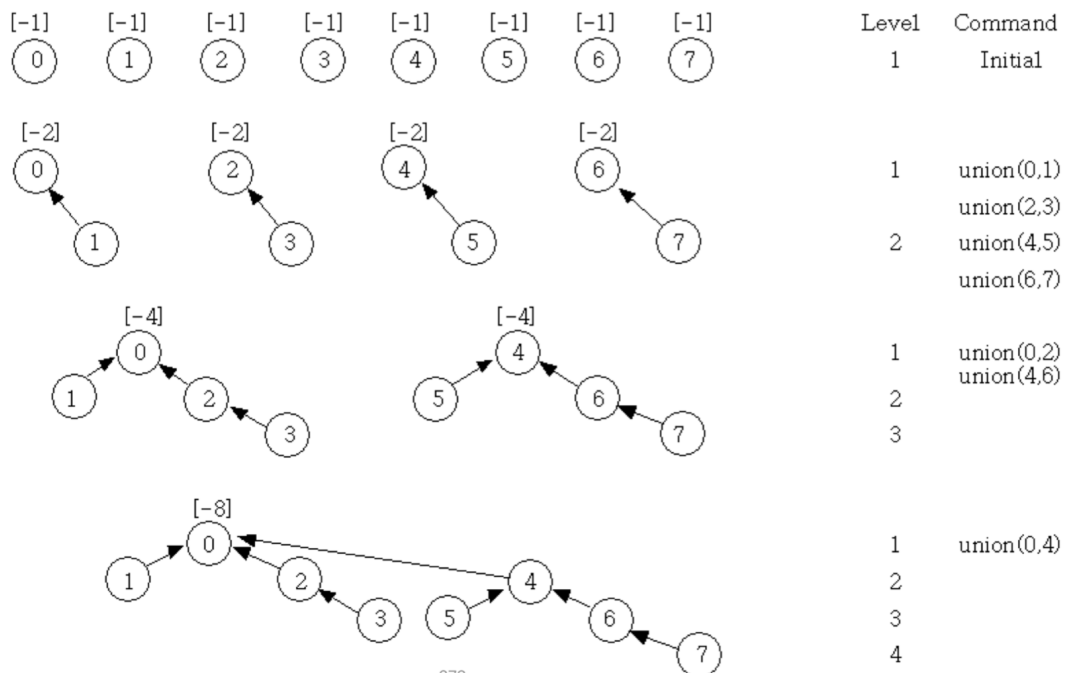
(각년 기말 기출문제)

3 **Example 5.3:** Consider the behavior of `weighted_union` on the following sequence of unions starting from the initial configuration of $\text{parent}[i] = -\text{count}[i] = -1, 0 \leq i < n = 2^3$:

$\text{union}(0, 1) \quad \text{union}(2, 3) \quad \text{union}(4, 5) \quad \text{union}(6, 7)$
 $\text{union}(0, 2) \quad \text{union}(4, 6) \quad \text{union}(0, 4)$

Figure 5.43 shows the result.

Figure 5.43: Trees achieving worst case bound

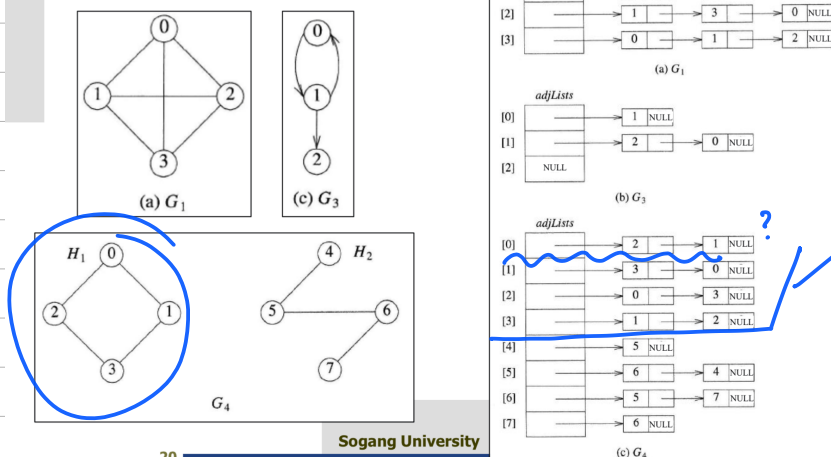


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영재가 이해 완료

4.

[Figure 6.8] Adjacency lists



은 2번 가지만
1번 연결
가는 거임?

ch6, wp

