Video-32

GRAPHS...

"let's make it easy too"

If you have tried my Graph Concepts & Qns playlist, these Qns, will seem very easy. Do try it once :)

~~Medium~~

Leetcode -1615

Just Do as it is.

Maximal Network Rank

codestorywithMIK

Companies :-

Microsoft

1615. Maximal Network Rank

Medium 1273 212 Add to List Share

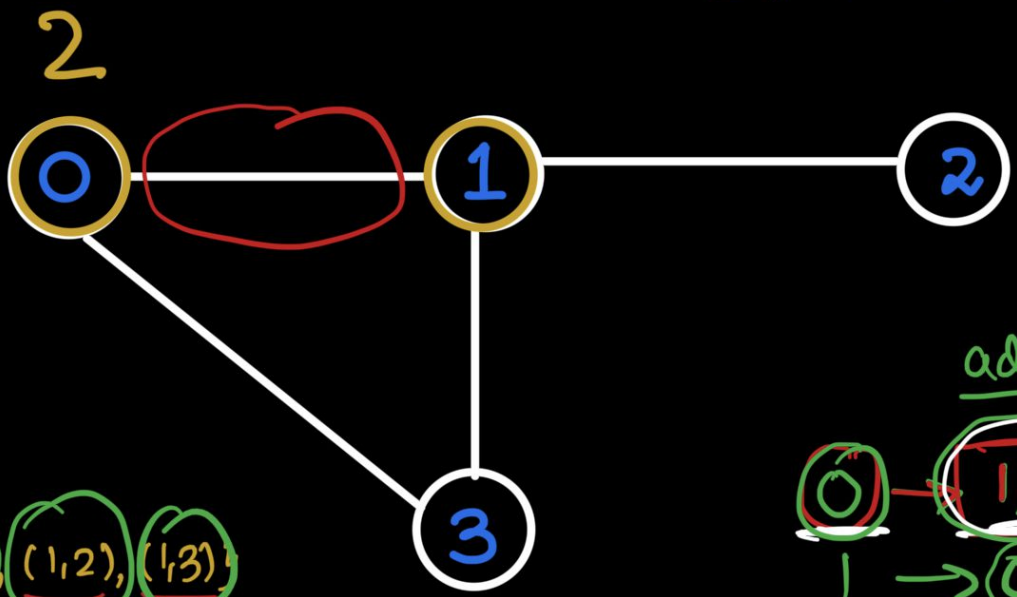
There is an infrastructure of `n` cities with some number of `roads` connecting these cities. Each `roads[i] = [a_i, b_i]` indicates that there is a bidirectional road between cities `a_i` and `b_i`.

The **network rank** of **two different cities** is defined as the total number of **directly** connected roads to **either** city. If a road is directly connected to both cities, it is only counted **once**.

The **maximal network rank** of the infrastructure is the **maximum network rank** of all pairs of different cities.

Given the integer `n` and the array `roads`, return *the **maximal network rank** of the entire infrastructure.*

2+3=5-1=4



n=4

(0,1), (0,3), (1,2), (1,3)

adj:

0 → 1, 3

1 → 0, 2, 3

3 → 0, 1

2 → 1

unordered_map <int, unordered_set<int>> adj;

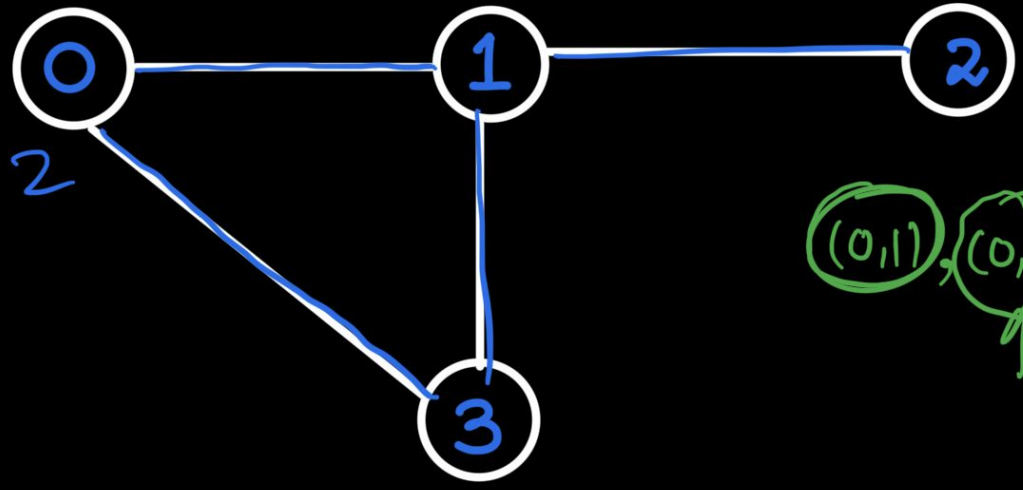
```
for (i = 0 ; i<n ; i++) {
    for (j = i+1; j<n ; j++) {
```

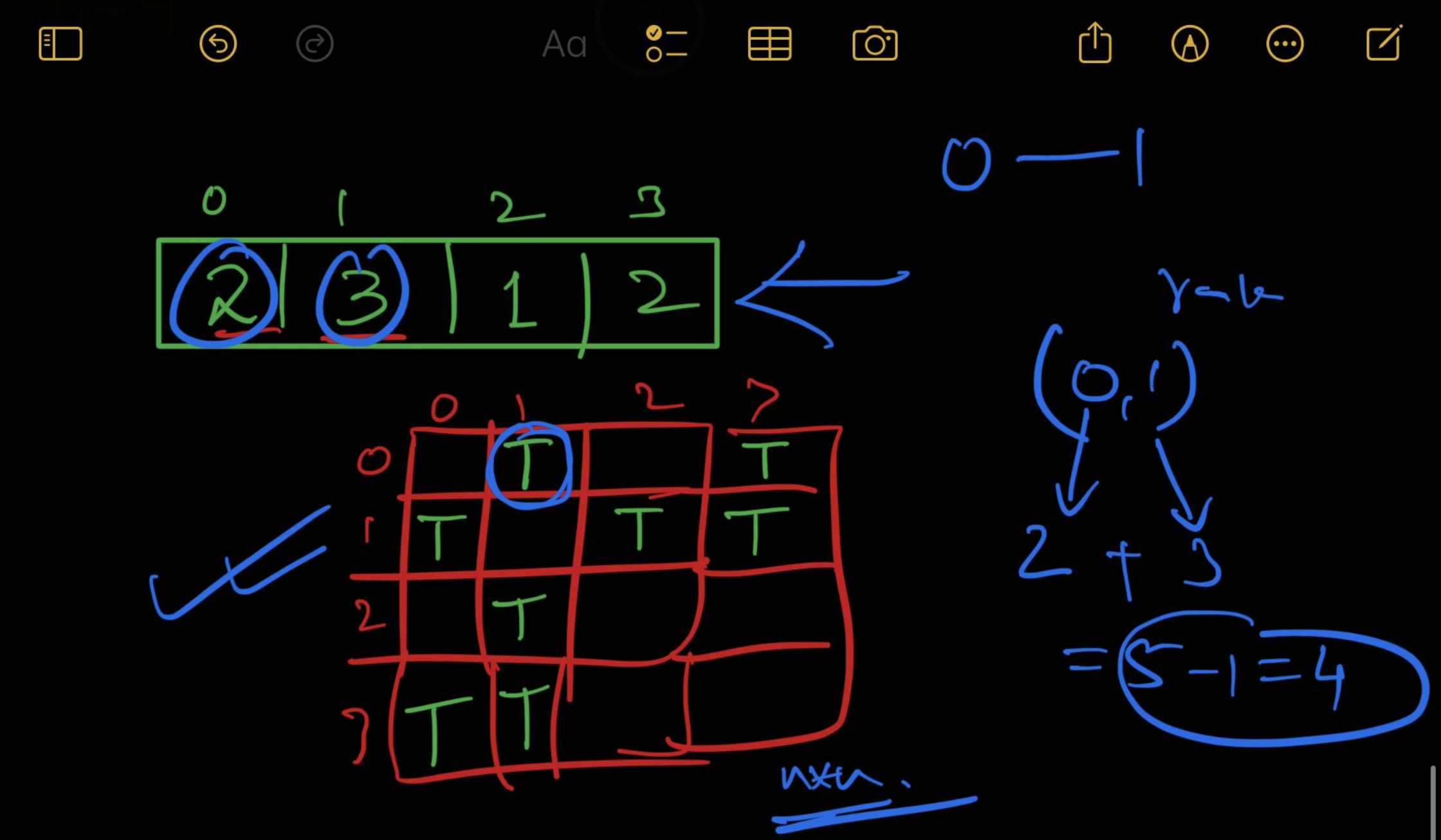
$O(V^2)$

```
i_rank = adj[i].size();
j_rank = adj[j].size();

total = i_rank + j_rank

if (adj[i].find(j) != adj[i].end())
    total -= 1;

maxRank = max(maxRank, total);
```

O(1)

Another way to code :-




0 1 2 3
2 3 1 2
0 — 1
0 1 2 3
T T T
T T T
T T
T T
next.
(0,1)
2 + 3
= 5 - 1 = 4