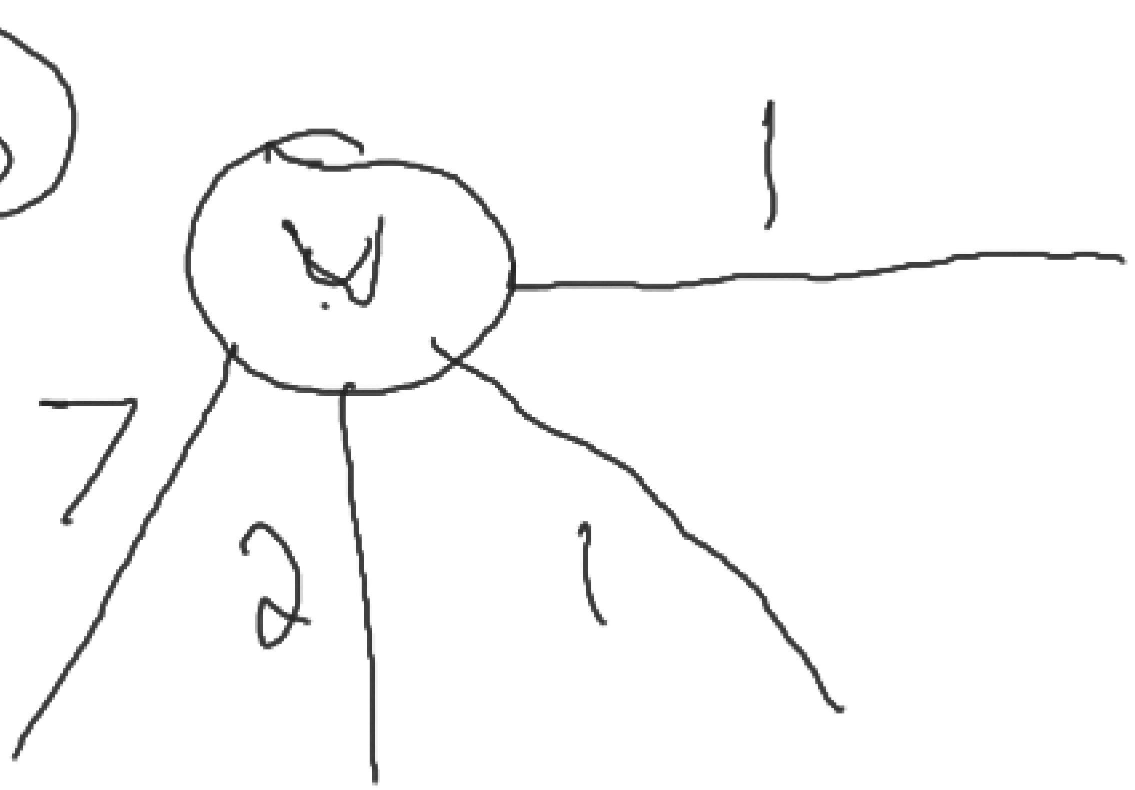
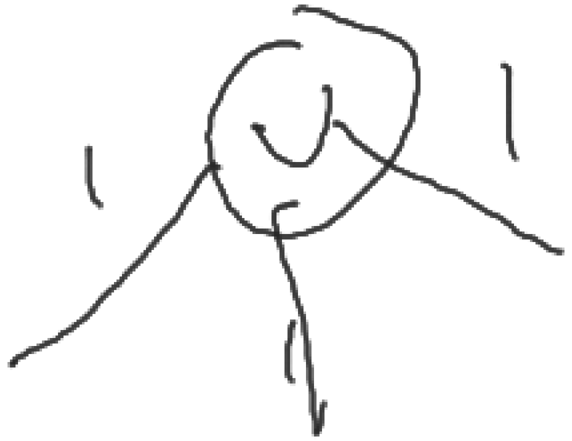
$$\sum_{v} \frac{\text{min paths starting}}{2} = \sum_{v} \frac{\max(M_v-(S_v-M_v),\ S_v\%2)}{2}$$

③



M_v = maximum weight edge

S_v = sum of edge weights



$\underline{k=1}$

$k=0$?

3 5 1 7

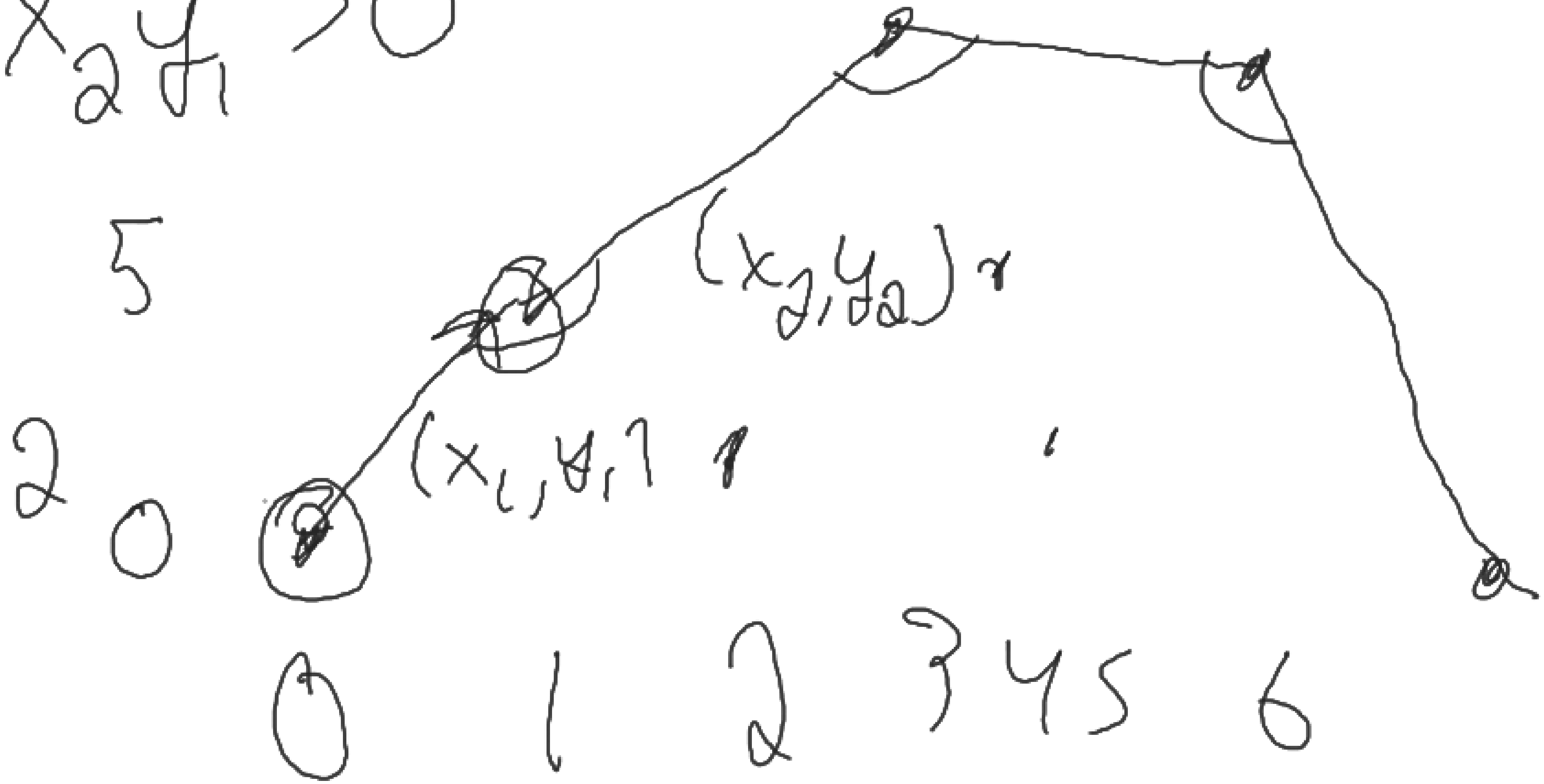
↓

3 5 7 7 ✓

$$A_i = \max\left(\frac{A_{i+1}+A_{i-1}}{2} + k, A_i\right)$$

✗

$x_1 y_2 - x_2 y_1 > 0$



$$A_i \rightarrow \frac{A_{i+1}+A_{i-1}}{2} + \underline{k}$$

$$A_i - B_i \rightarrow \frac{A_{i+1}+A_{i-1}}{2} - B_i$$

$$B_i = \frac{B_{i+1}+B_{i-1}}{2} + k \qquad B_i = i(n+1-i)k$$

$X < 100$

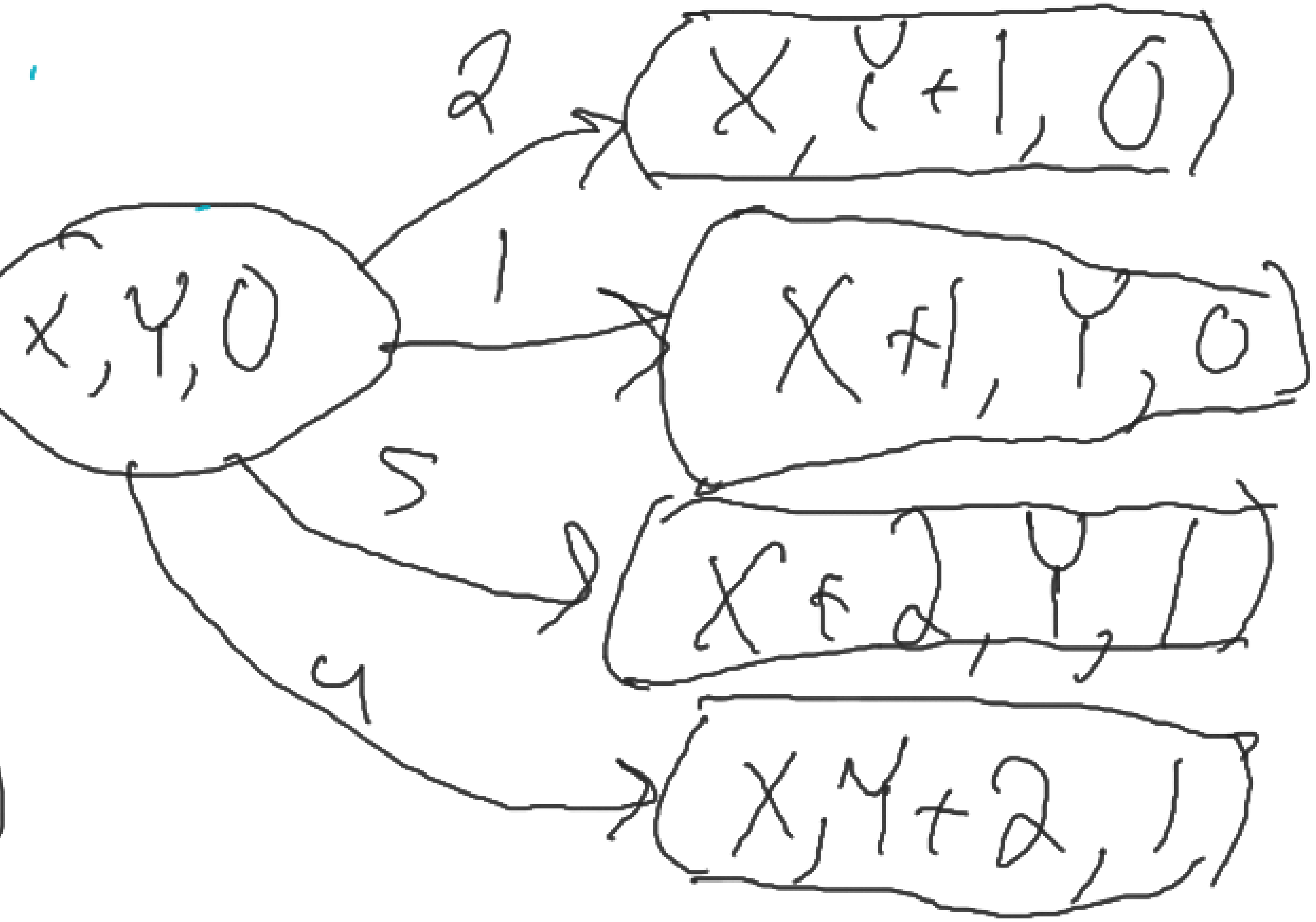
$Y < 100$

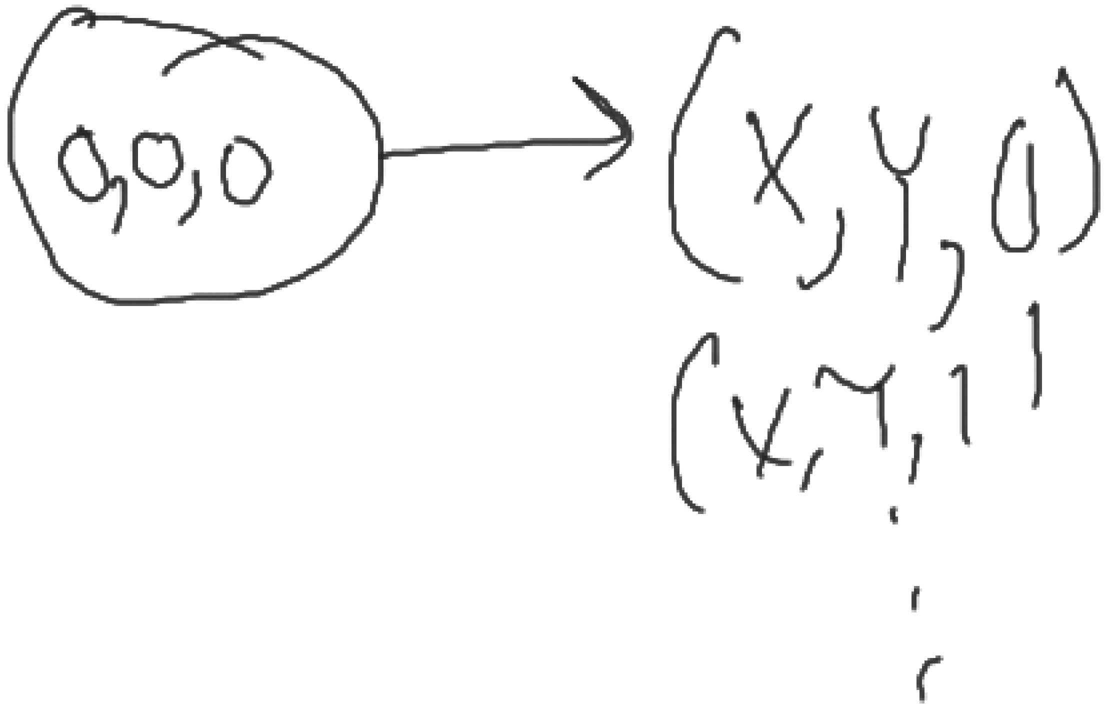
$|Key| < 50$

key: 1,2

$100 \cdot 100 \cdot 50 = 5 \cdot 10^5 \cdot 4 < 10^7$ states

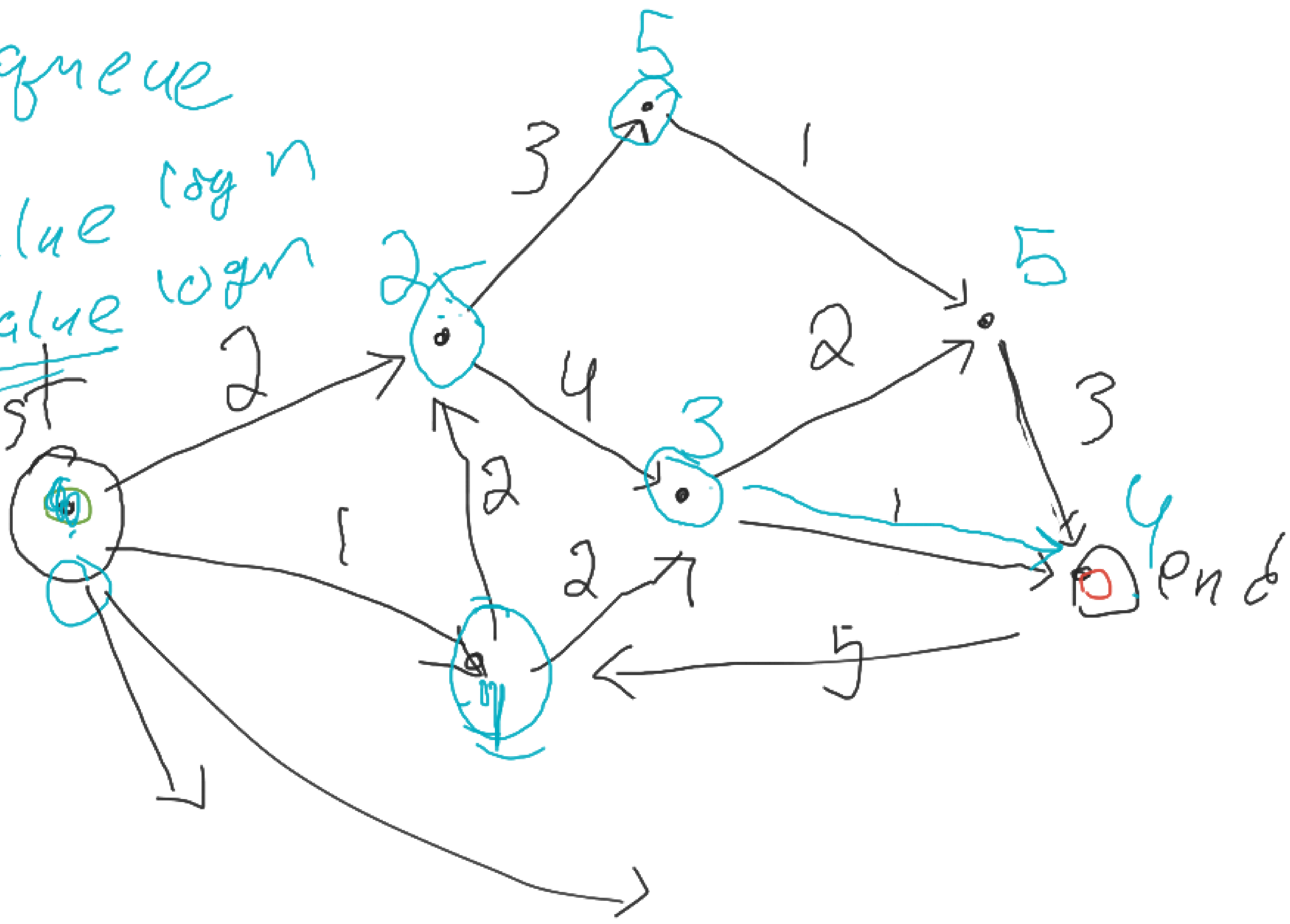
$O(V+E)$

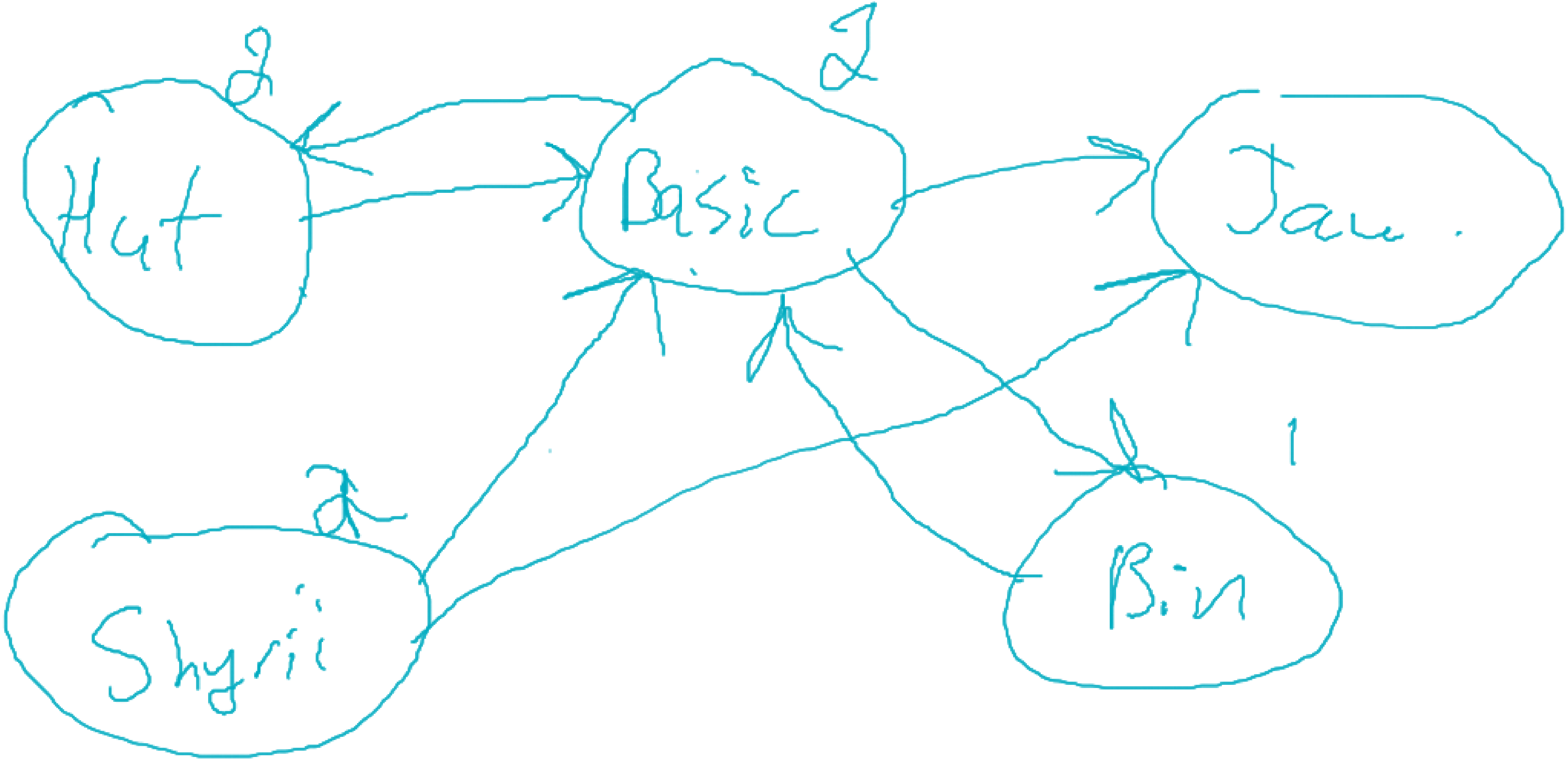




priority queue

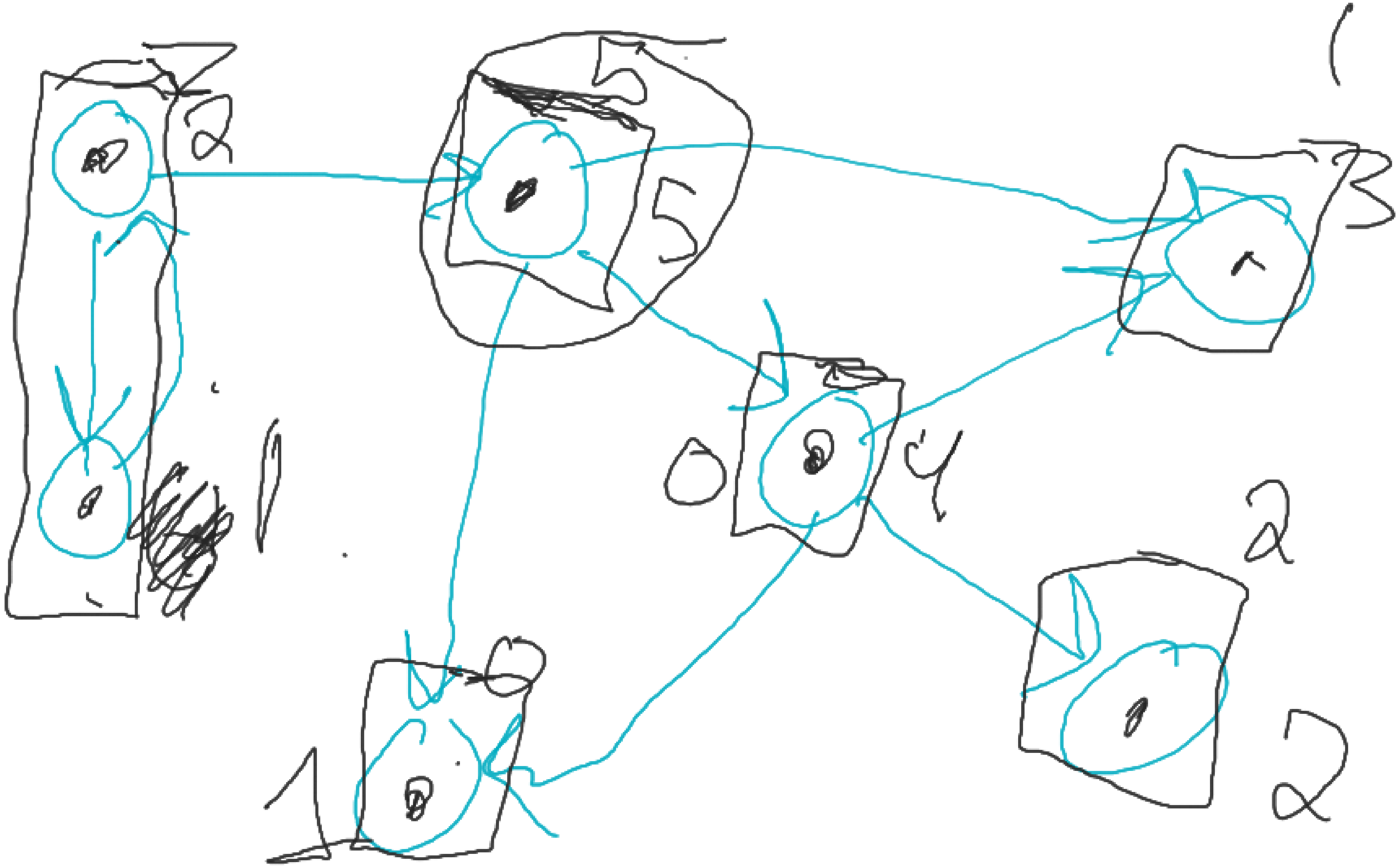
- insert value log n
- get min value log n





Strongly connected components.

Tarjan's Korasuju's



Every node you can reach has a lower index class ~~Graph~~ Node

list<Node>

list<list<

~~vector~~<~~vector~~<int>> adjMat;

adjMat[1].add(2)

vector<int> values

values[1] = 4