



Graph Class - 2

Special class

→ Graph

→ Terry

→ inp → adj Mat →
→ adj List →

→ Traversal

DFS

T.C
S.C

BFS

②

Rotten tomatoes

or

Rotten Oranges

↓

① find the no. of disconnected component in graph

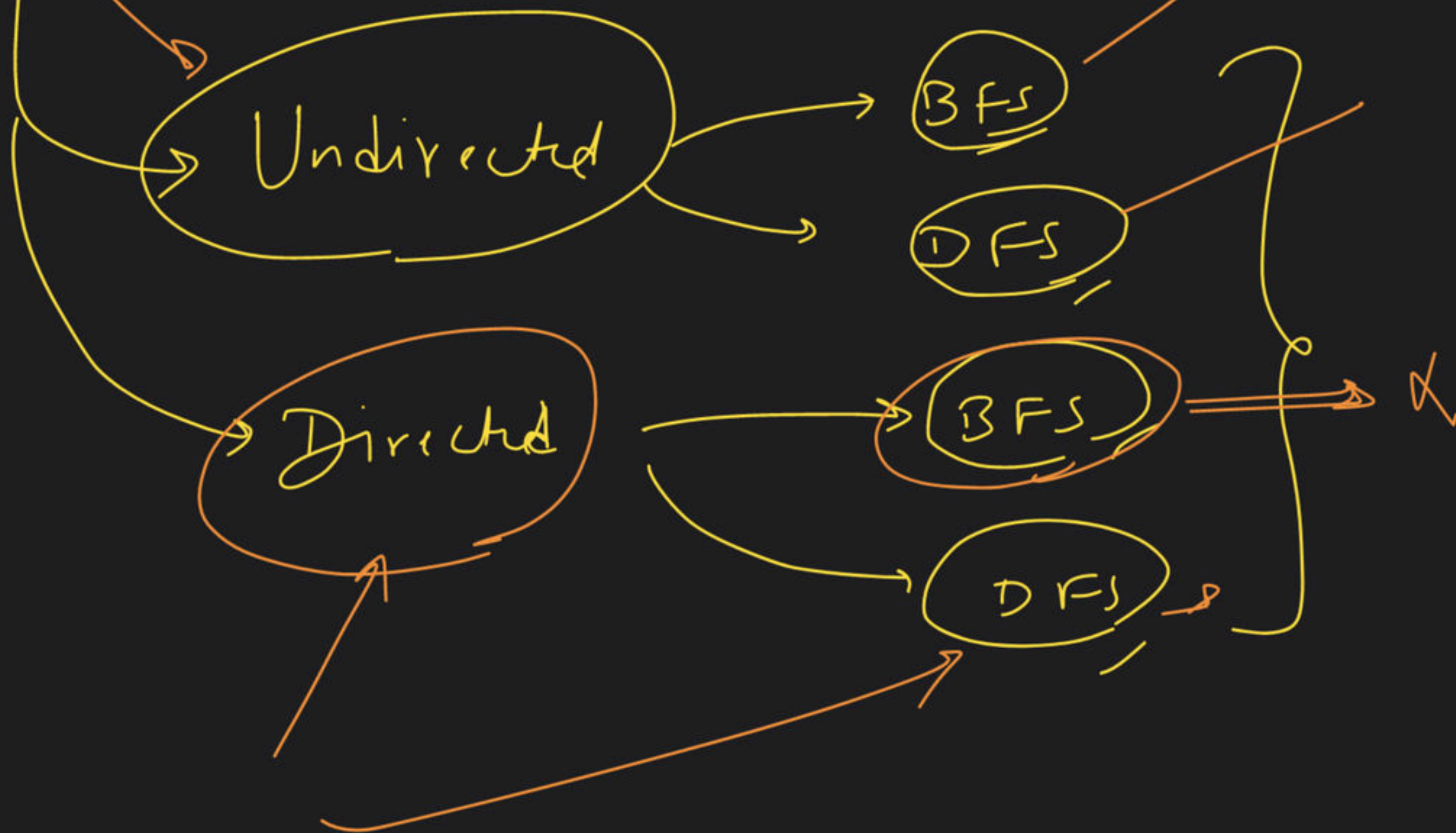
or

find number of island

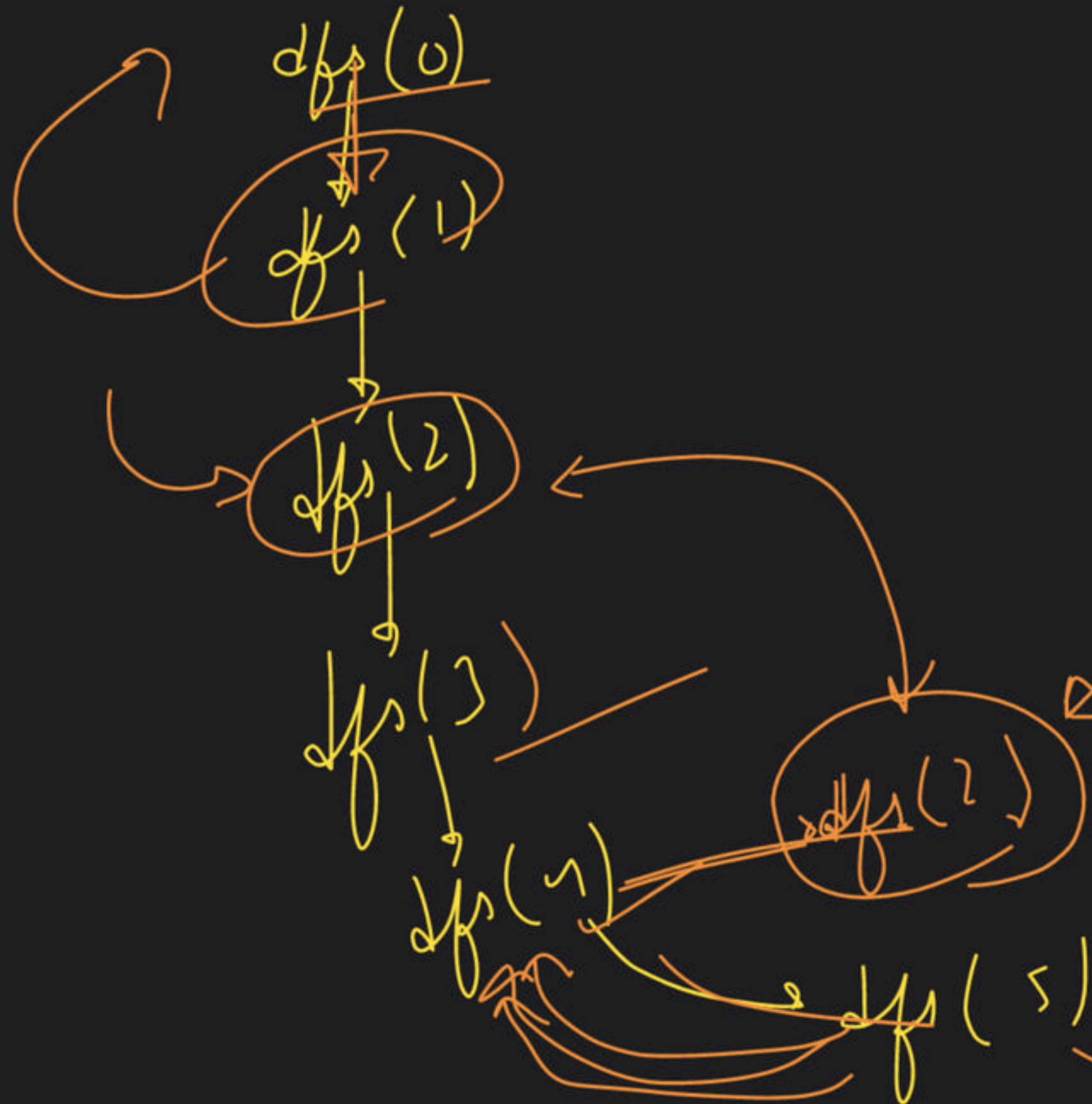
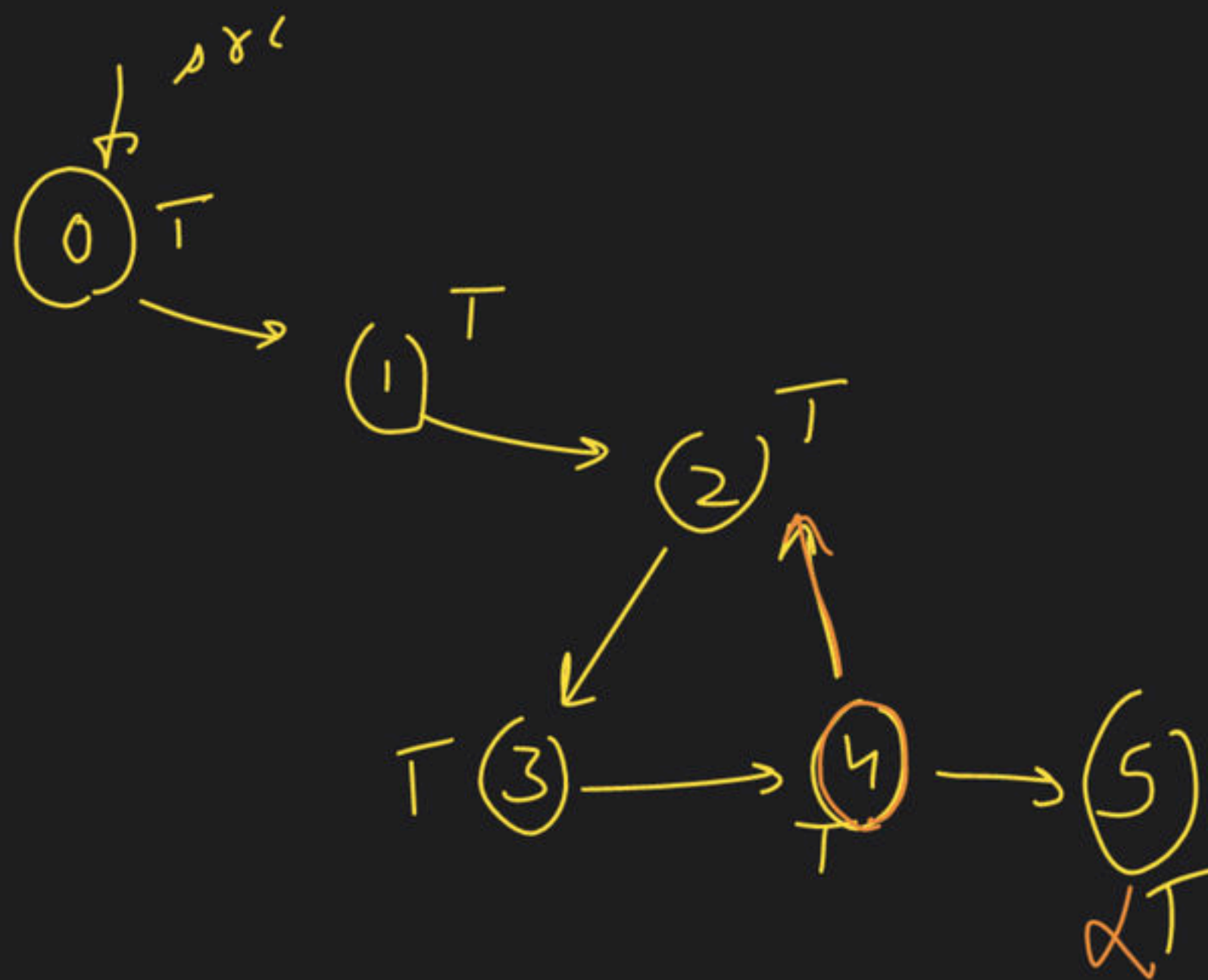


Cycle

detection ::



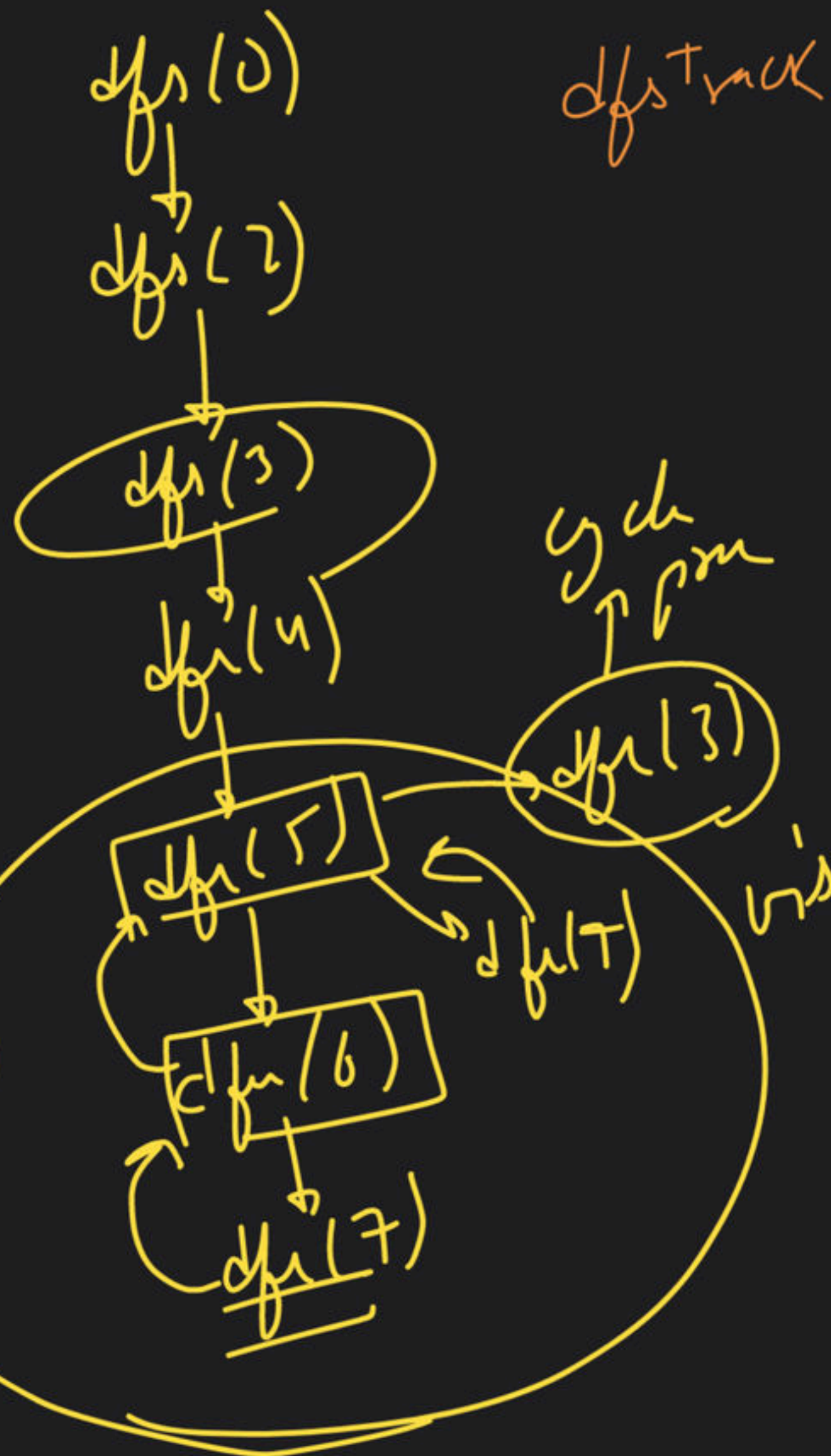
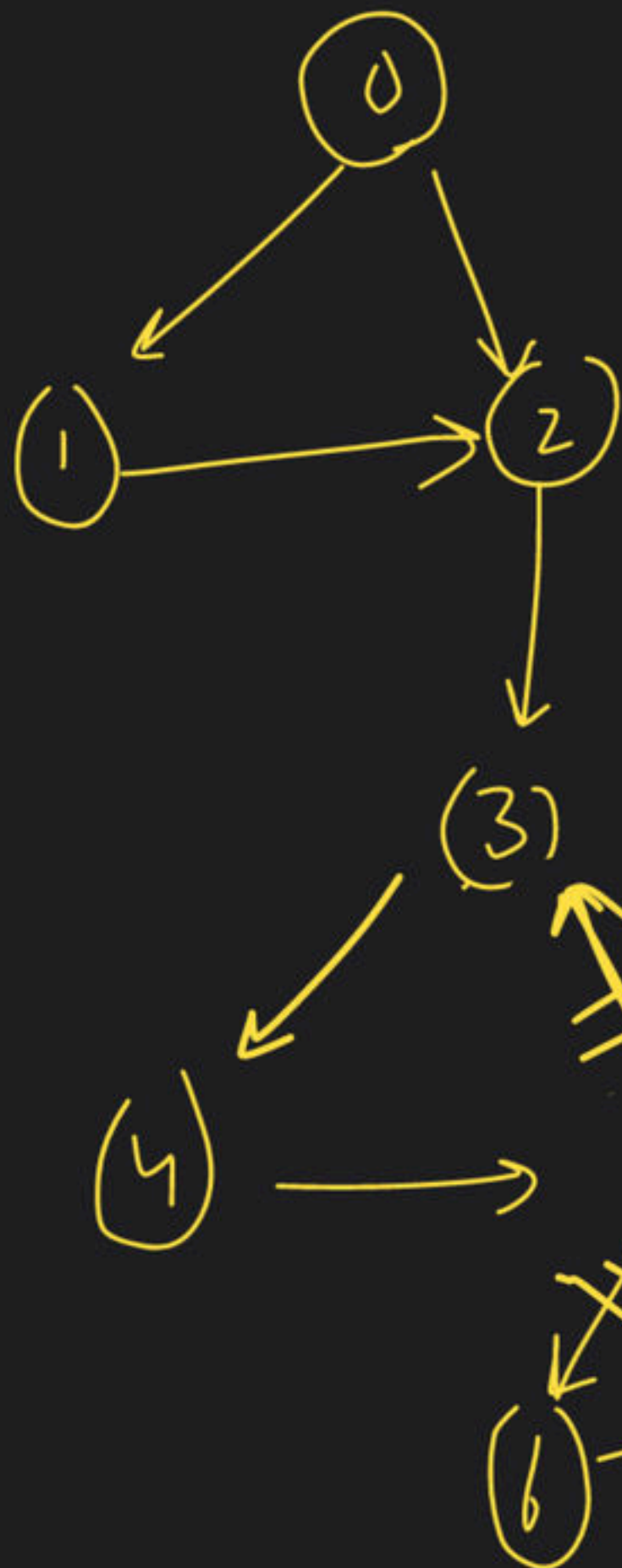
→ Directed graph



✓ Cycle print

dfs(0) → T
dfs(1) → ~~T~~ f
dfs(2) → T
dfs(3) → T
dfs(4) → T
dfs(5) → T

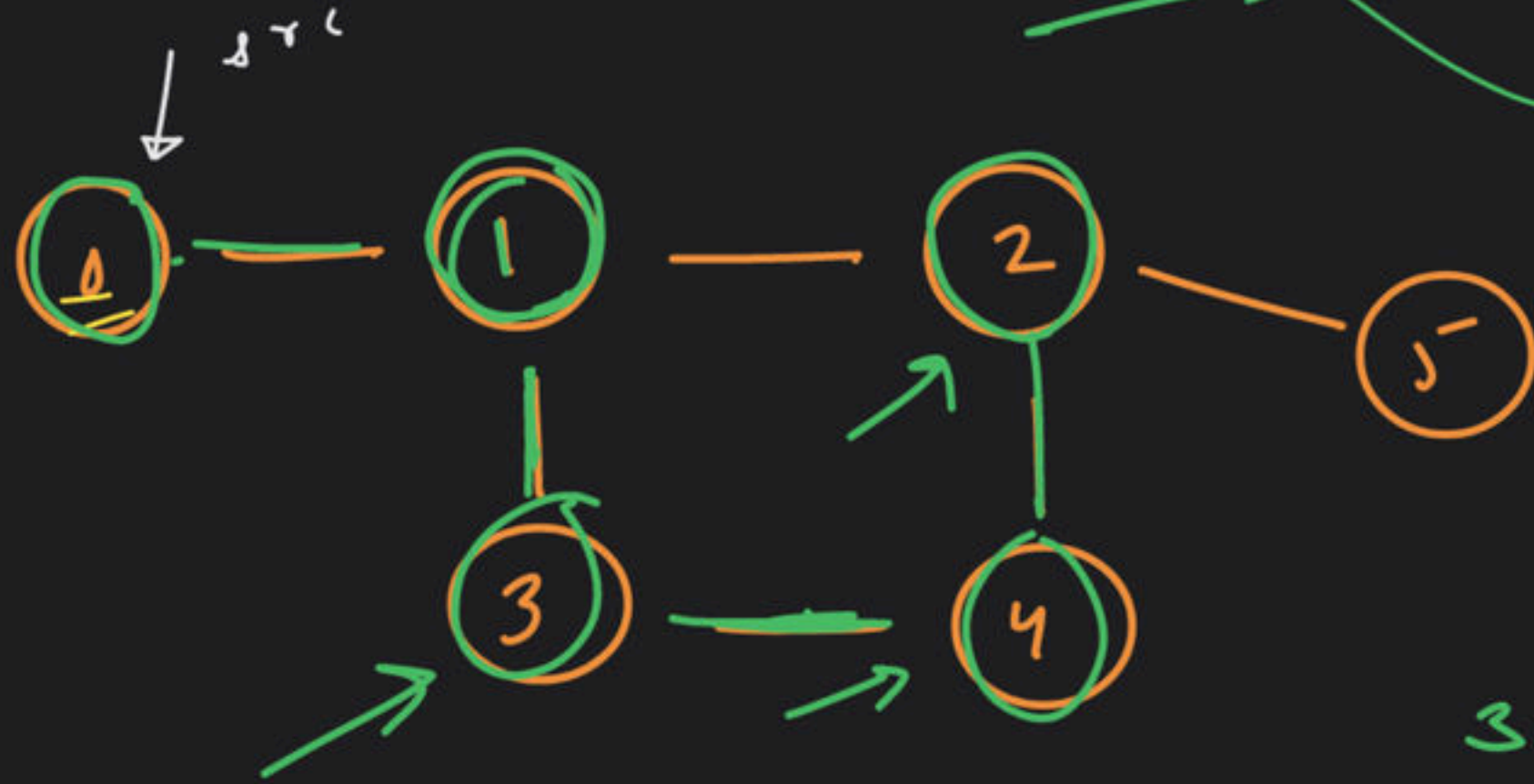
Cycle print



$dfs(0) \rightarrow \text{X} T$
 $dfs(1) \rightarrow F$
 $dfs(2) \rightarrow \text{X} T$
 $dfs(3) \rightarrow \text{X} T$
 $dfs(4) \rightarrow \text{X} T$
 $dfs(5) \rightarrow \text{X} T$
 $dfs(6) \rightarrow \text{X} \text{X} F$
 $dfs(7) \rightarrow \text{X} \text{X} \text{X} F$

$0 \rightarrow \text{X} T$
 $1 \rightarrow F$
 $2 \rightarrow \text{X} T$
 $3 \rightarrow \text{X} T$
 $4 \rightarrow \text{X} T$
 $5 \rightarrow \text{X} T$
 $6 \rightarrow \text{X} T$
 $7 \rightarrow \text{X} T$

Undirected :-



① $visited[child] = T$
 $\&\&$
 $child = parent[front]$

cycle present

adj list

→ 0: {1}
 → 1: {0, 2, 3}
 → 2: {1, 4, 5}
 → 3: {1, 4}
 4: {2, 3}
 5: {2}

parent

0: -1
 1: 0
 2: 1
 3: 1
 4: 2
 5: 2

Visited

0 → F T
 1 → F T
 2 → F T
 3 → F T
 4 → F T
 5 → F T

Queue

~~0~~ | ~~1~~ | ~~2~~ | ~~3~~ | 4 | 5 |

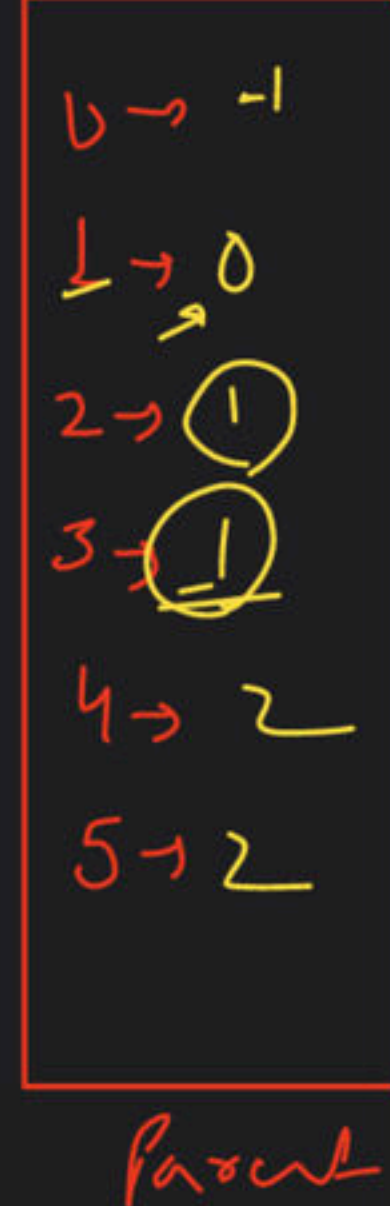
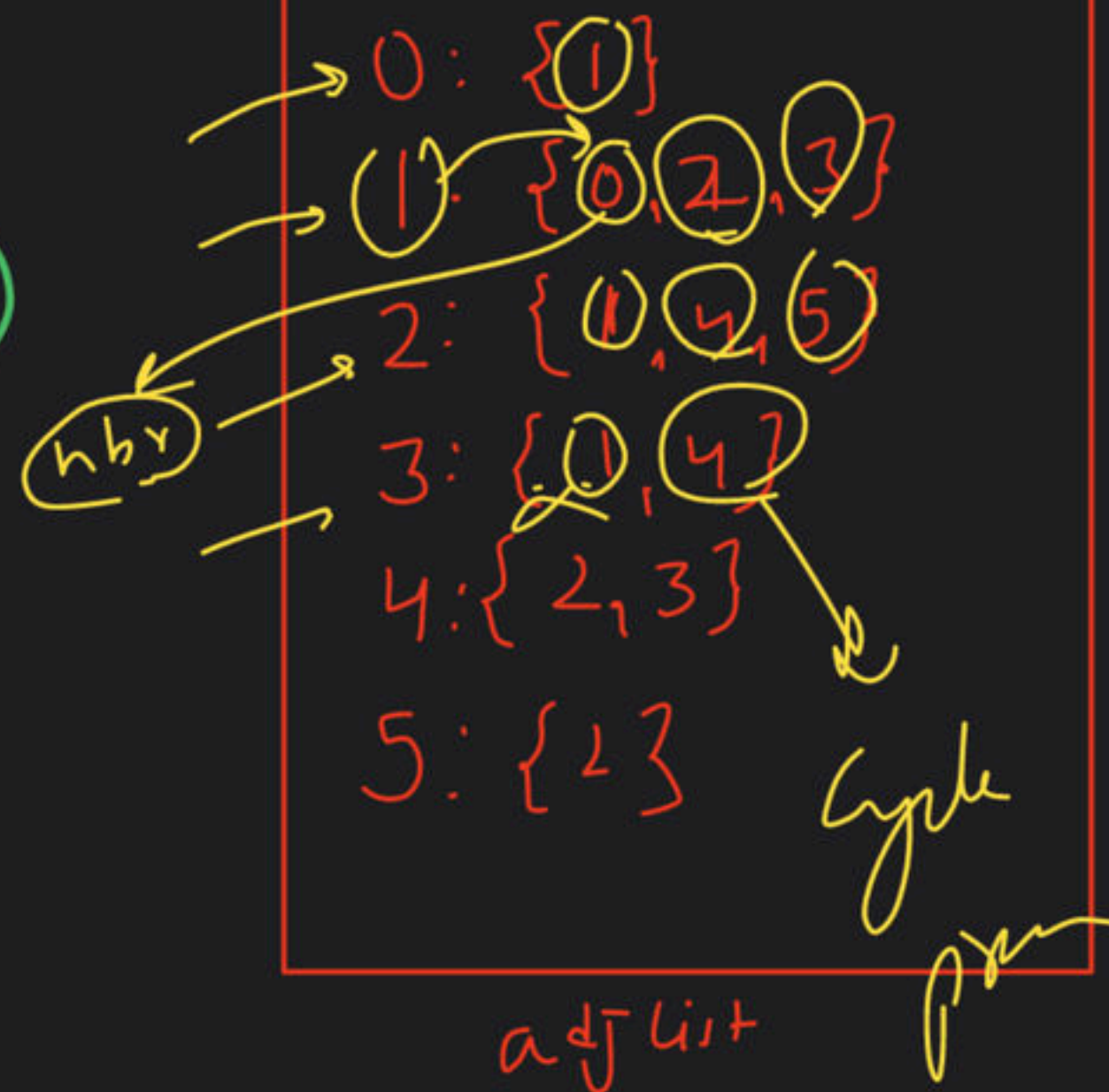
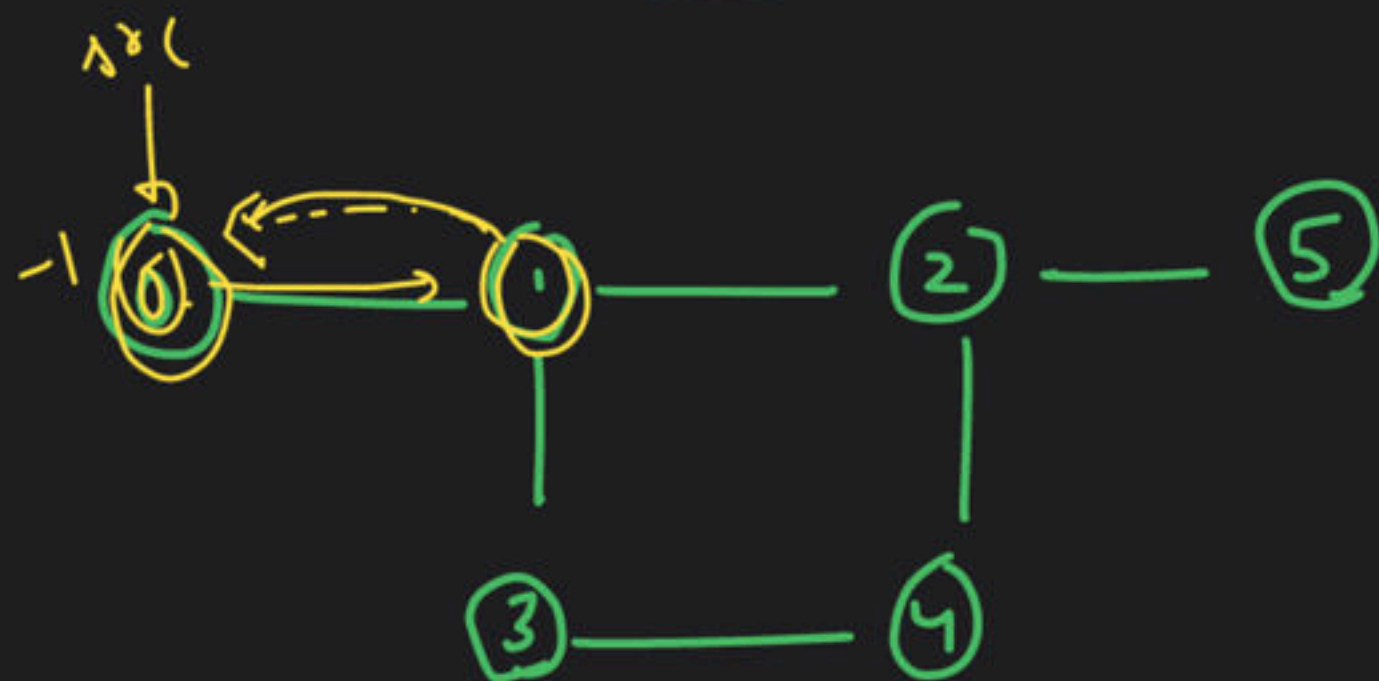
0 1 2 3
 1 is front
 2 ← 1

g.pml(orc)
 $vis[0] = T$
 $par = -1$

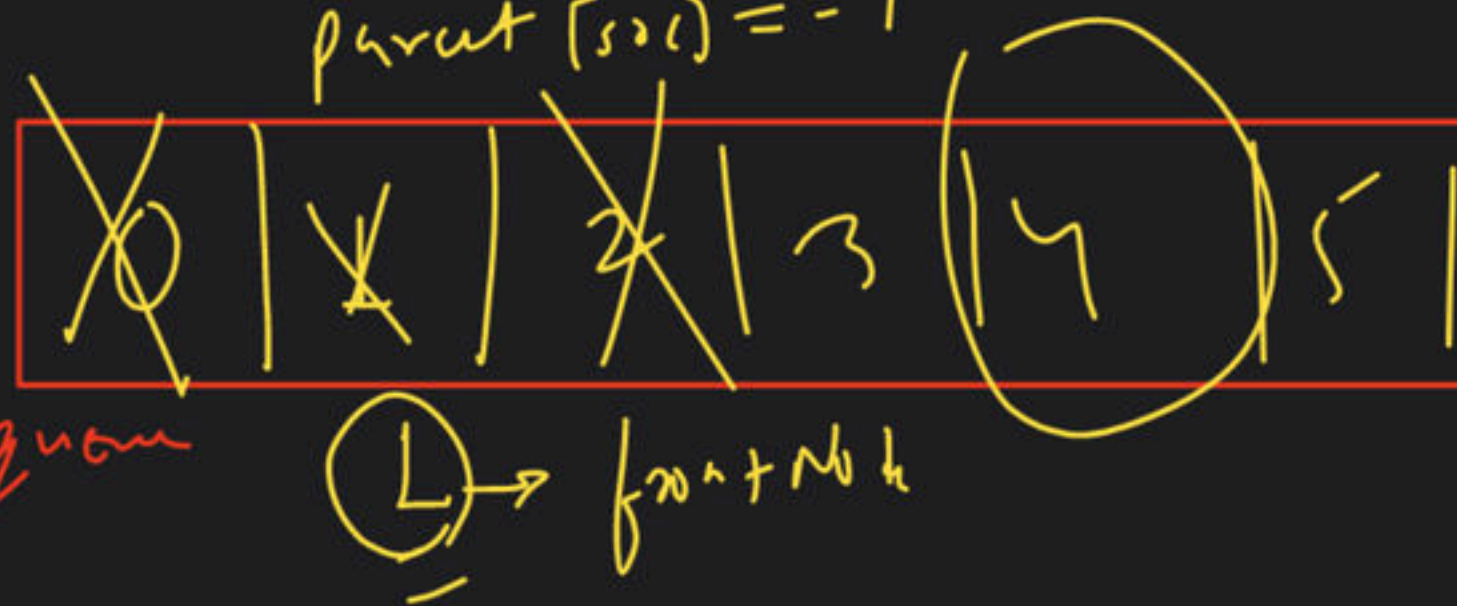
cond k →

$vis[hbr] == true$
 $\&\&$

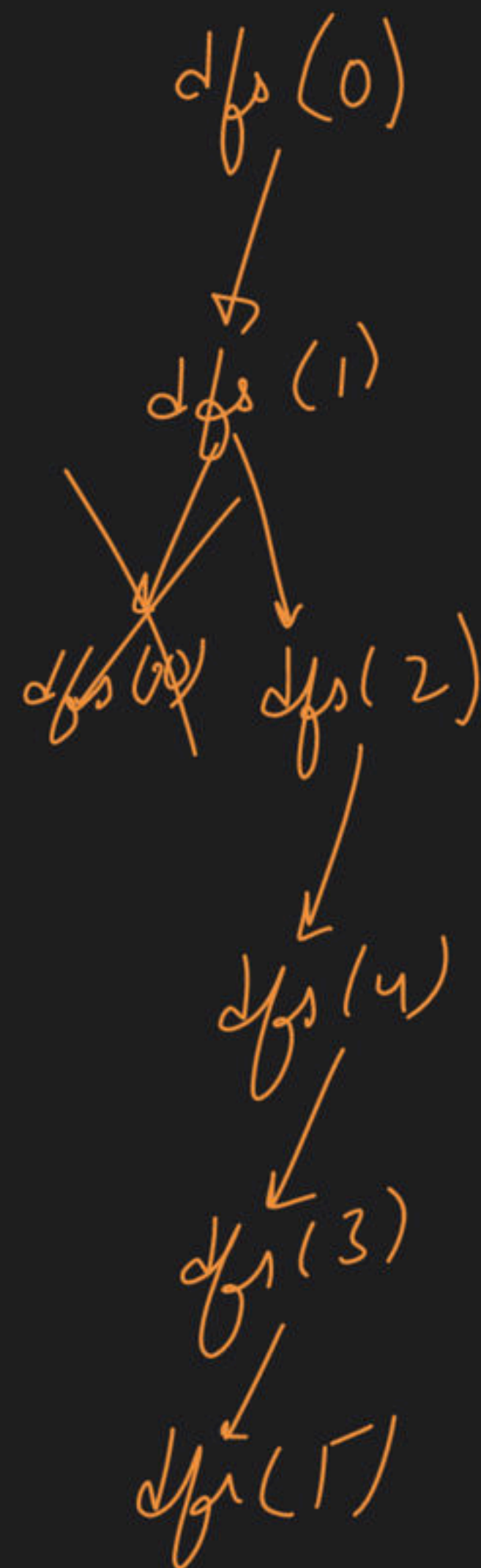
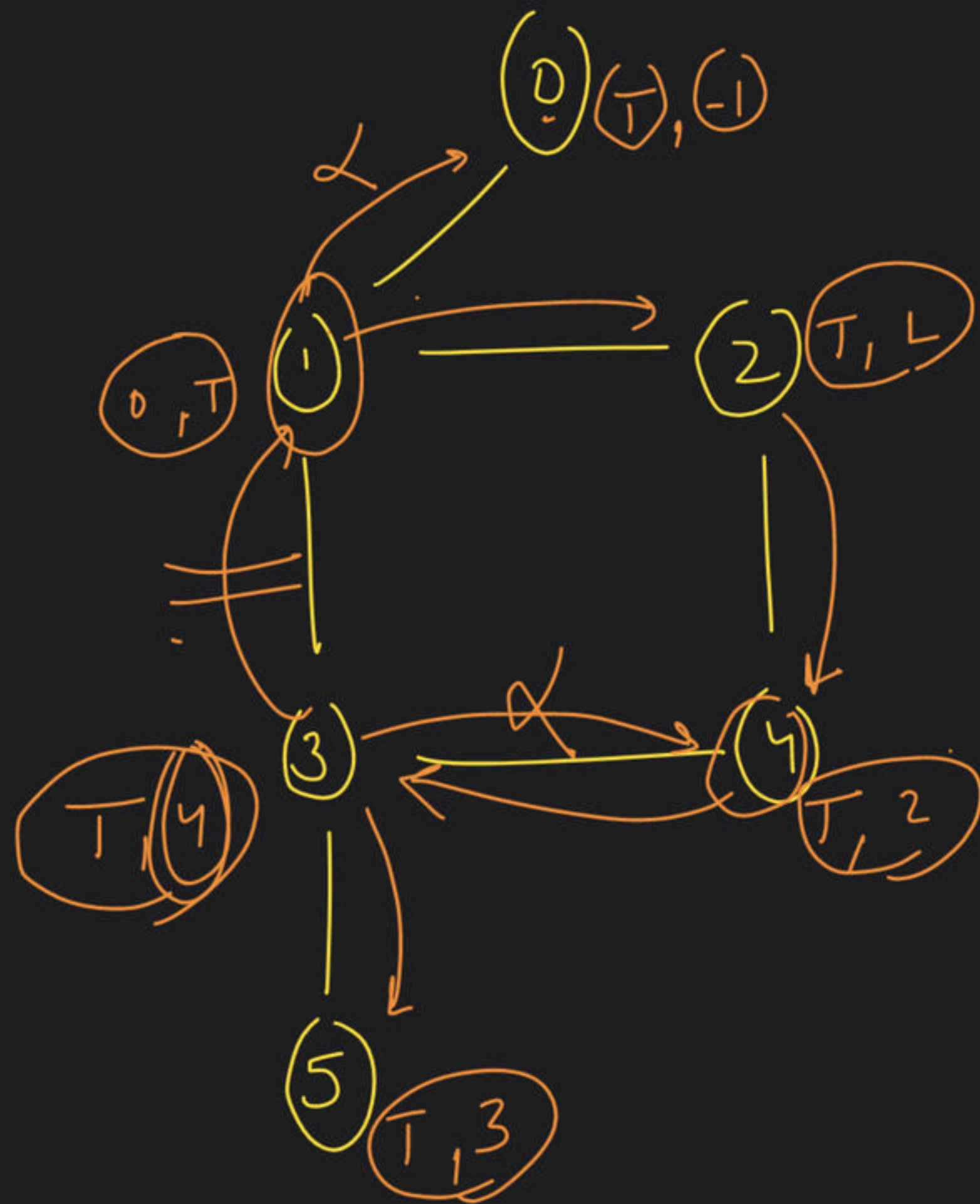
$nbr \neq parent[frontNode]$

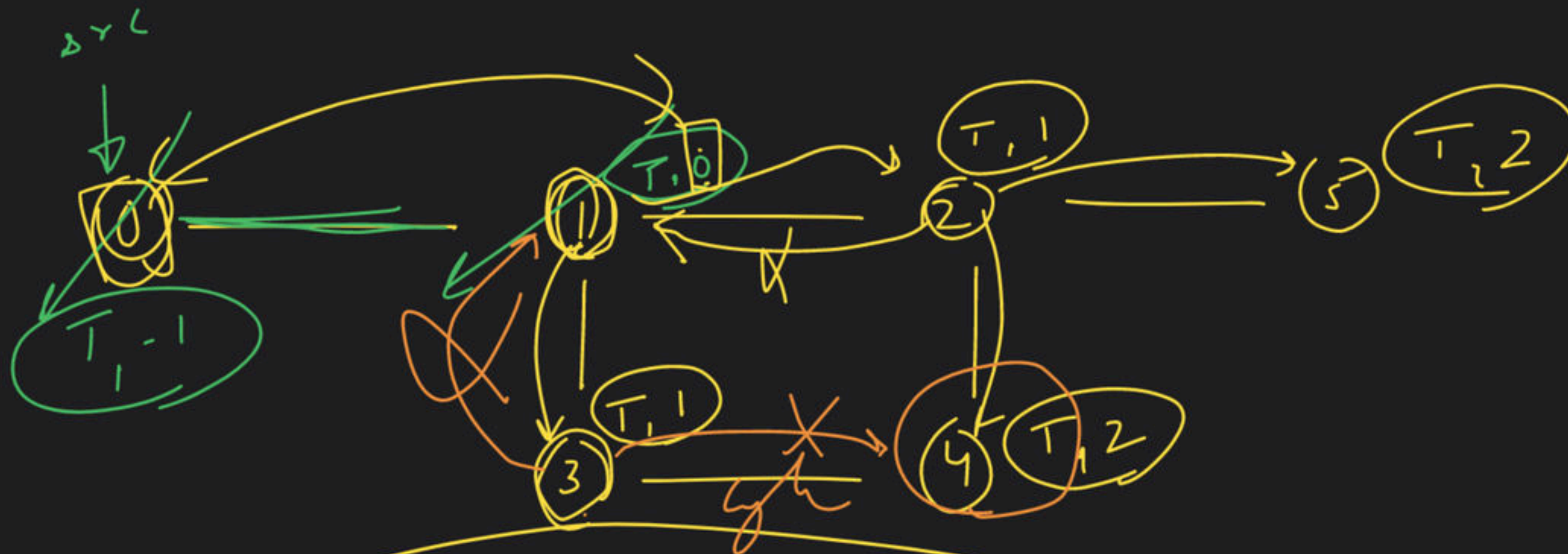


2. push(src)
 $vis[src] = T$
 $parent[src] = -1$



→ ① FS





$\text{parent}(\text{front Node}) = z \text{ nbr}$

continue

if (vis[hr])
 $\rightarrow q \cdot \text{push}$
 $\rightarrow \text{vis}$

$1 \rightarrow \{0, 2, 3\}$

$2 \rightarrow (1, 1)$



