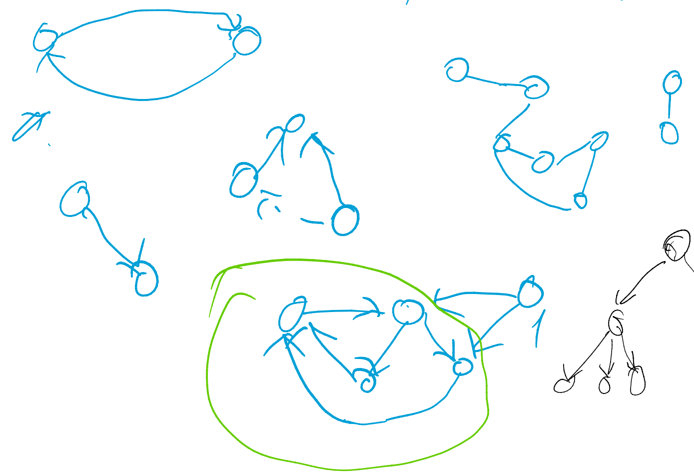
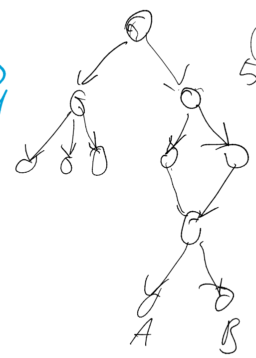
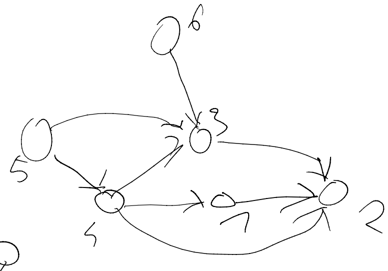
K12 - Directed Graphs

Friday, 10 December 2021 16:48

$G = (V, E) \quad E = \{(v, u) \in V\}$



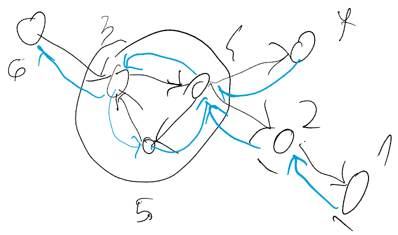




6 5 4 3 1 2

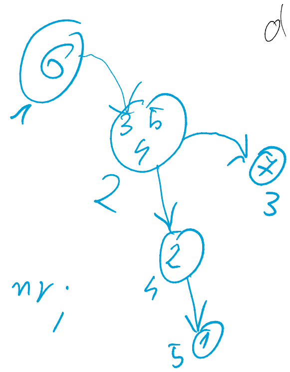
```
for (i = 0; i < n)
    if (!odw[i])
        dfs(i)

dfs(s)
    odw[s] = true
    for (int v : g[s])
        if (!odw[v])
            dfs(v)
    topsort.push_back(s);
```



6 3 5 4 7 2 1

nr SSS[v] = nr;



1 → 2

order 4 1 0 3 2

pos 2 1 4 3 0 może na 4 skąd 0

0 1 2 3 4

2 ← 1

1 ← 4

LCS

i=1: 1 4 3 5 2

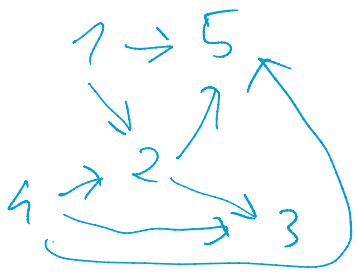
pos[i][p] = j   4 5

pos[1][1] = 0

pos[1][2] = 4   4 → 5

pos[1][3] = 2

1 4 2 5 3
4 1 2 3 5
4 3 1 2 5

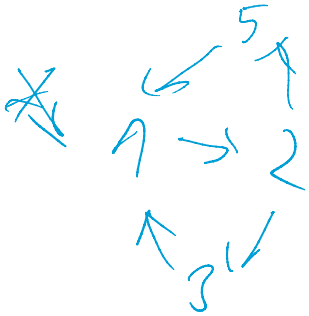


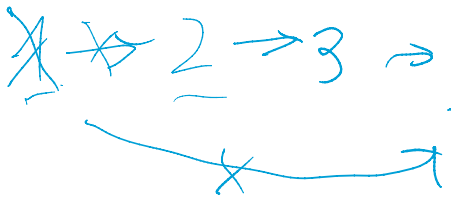
4 1 2 5 3
↑ ↑ ↑ ↑ ↑
2 2 1 0 0

vyn = max( ) + 1

---

cin → 3 →





1 2 4 5

```
cin >> a >> b;
g[a].pb(b);
inDeg[b]++;

for i = 0 i < n
    if inDeg[i] == 0
        q.push(i);
```

```
        q.push(i);

while(!q.empty())
    if q.size() > 1
        NIE

    a = q.front();
    q.pop();
    ct++;
    for(int b : g[a])
        inDeg[b]--;
        if(inDeg[b] == 0)
            q.push(b);

if ct == n
    TAK
else
    NIE
```