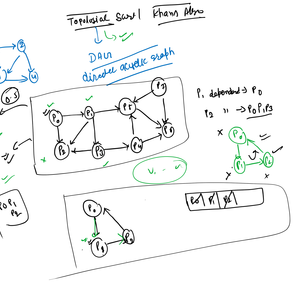
Lec-48
02/06/25 7:30 PM

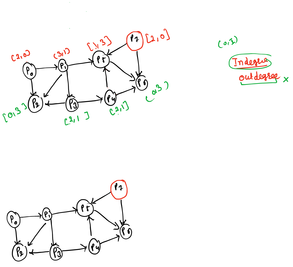
Topological Sort | Khan Algo

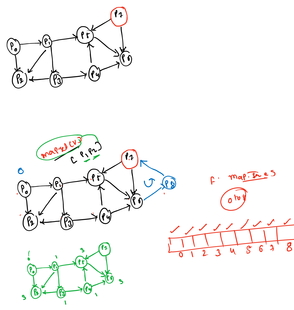
DAG
directed acyclic graph

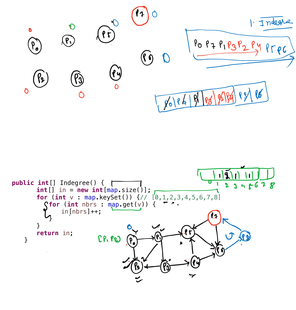
P1 dependent P0
P3 " → P0 P1 P3

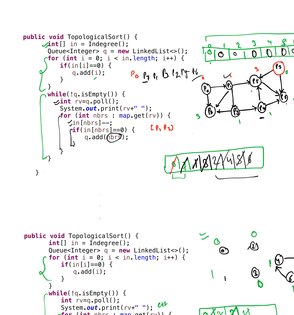
1-2
1-3-0
1-3-0
P0 P1 P2



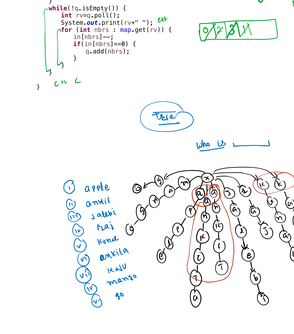




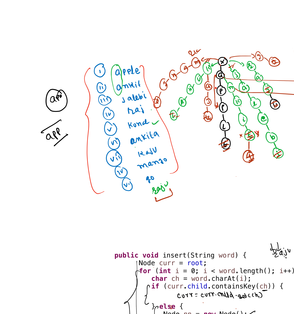




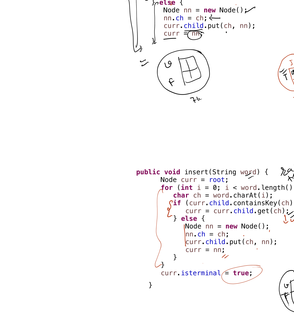

```
public int[] Indegree() {
    int[] in = new int[map.size()];
    for (int v : map.keySet()) // {0,1,2,3,4,5,6,7,8}
        for (int nbrs : map.get(v)) {
            in[nbrs]++;
        }
    return in;
}
```

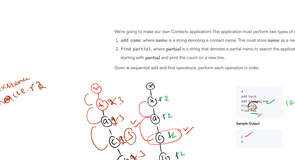



```
public int[] Indegree() {
    int[] in = new int[map.size()];
    Queue<Integer> q = new LinkedList<>();
    for (int i = 0; i < in.length; i++) {
        if(in[i]==0) {
            q.add(i);
        }
    }
    while(!q.isEmpty()) {
        int rvno.poll();
        System.out.print(rvno+" ");
        for (int nbrs : map.get(rvno)) {
            in[nbrs]--;
            if(in[nbrs]==0) {
                q.add(nbrs);
            }
        }
    }
}
```




```
public void TopologicalSort() {
    int[] in = Indegree();
    Queue<Integer> q = new LinkedList<>();
    for (int i = 0; i < in.length; i++) {
        if(in[i]==0) {
            q.add(i);
        }
    }
    while(!q.isEmpty()) {
        int rvno.poll();
        System.out.print(rvno+" ");
        for (int nbrs : map.get(rvno)) {
            in[nbrs]--;
            if(in[nbrs]==0) {
                q.add(nbrs);
            }
        }
    }
}
```






```
public void insert(String word) {
    Node curr = root;
    for (int i = 0; i < word.length(); i++) {
        char ch = word.charAt(i);
        if (curr.child.containsKey(ch)) {
            curr = curr.child.get(ch);
        }else {
            Node nn = new Node();
            nn.ch = ch;
            curr.child.put(ch, nn);
            curr = nn;
        }
    }
    curr.isterminal = true;
}
```


We're going to make our own Contacts application! The application must perform two types of operations:

1. add name, where name is a string denoting a contact name. This must store name as a new contact in the application.
2. find partial, where partial is a string that denotes a partial name to search the application for. It must count the number of contacts starting with partial and print the count on a new line.

Given a sequential add and find operations, perform each operation in order.

hackerrank problem 72

heavier72