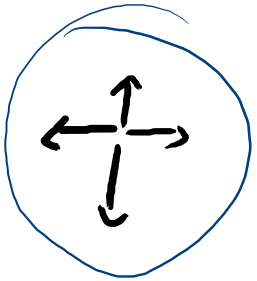
No. of connected components

↳ dfs

4

T → Land

W → Water



2 island

6, 10

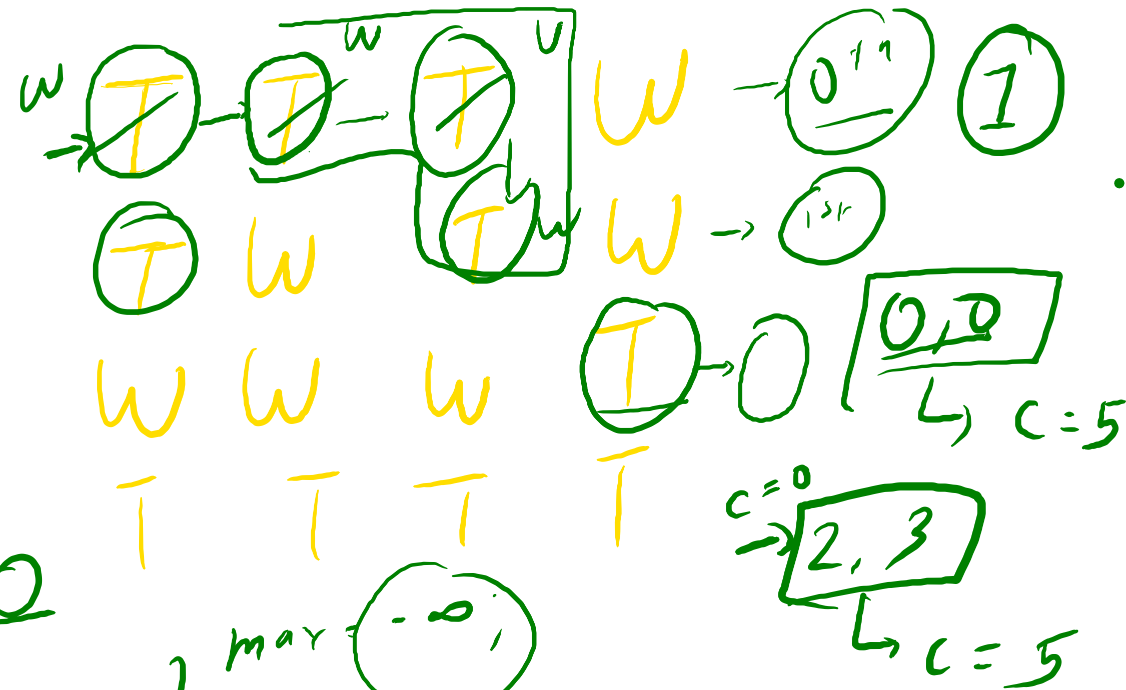
Tell me the maximum number of land awible in a island

10

0, 0

i, j+1
i, j-1
i+1, j
i-1, j

0, 1
0, -1 X
1, 0
-1, 0X



0

[5 min]

max = -∞

5 nodes

if ("T")
↳ max = ___

2
W W
W W

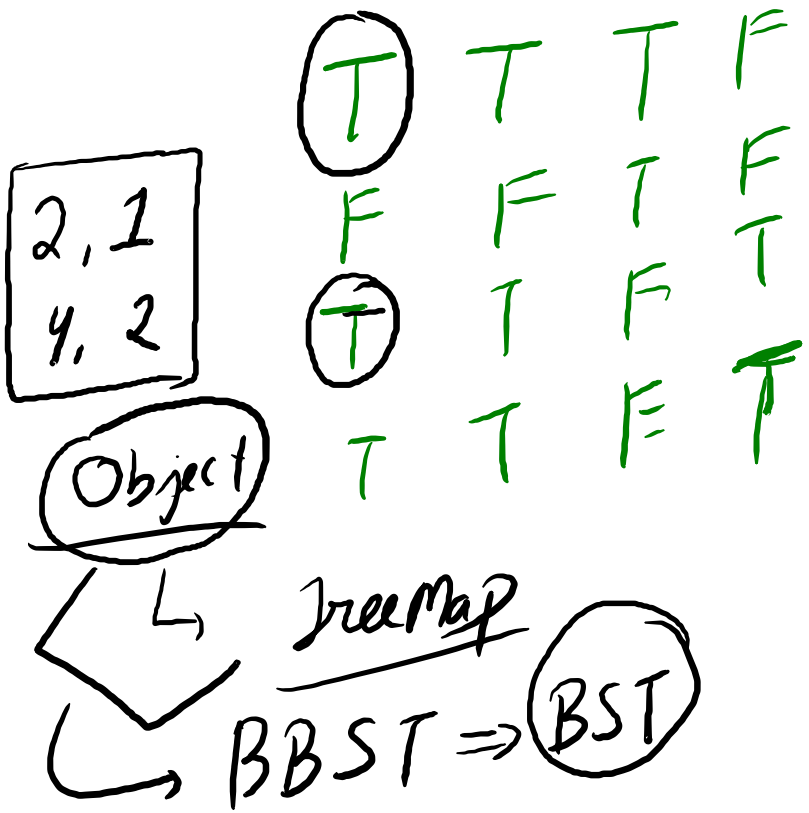
4

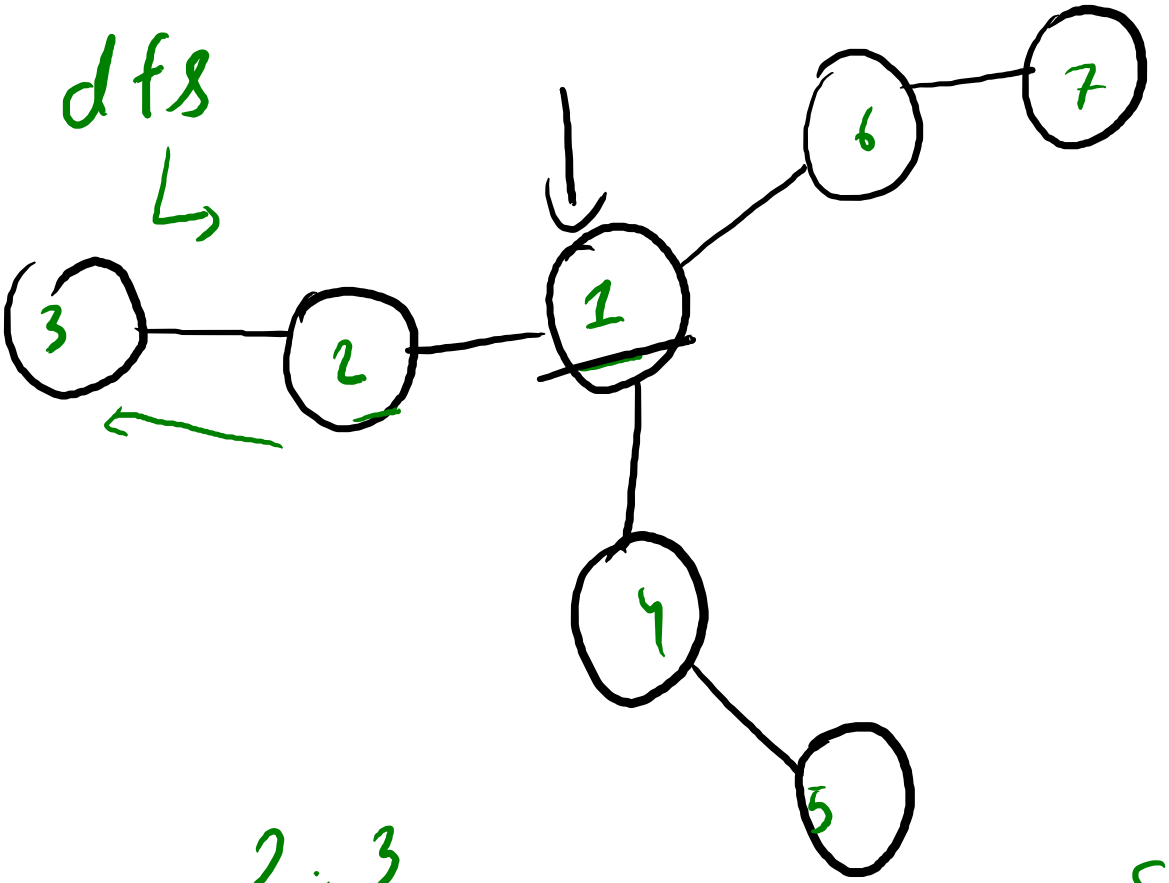
4

2

4:55

1 Problem





2 ; 3

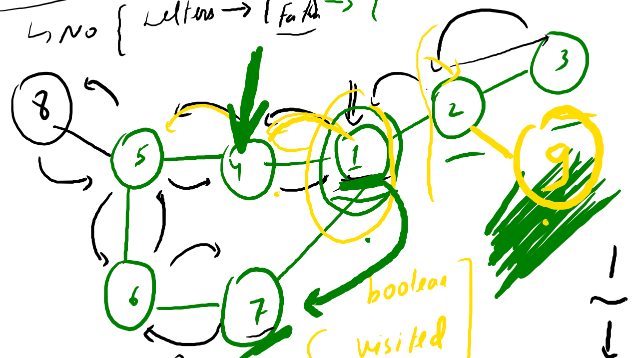
{ 2, 6, 4 }

19th Century
↳ No { Letters → [Lowered / Faded] → {

adj mat

adj list

[[ ], [2, 4, 7], [1, 3]]
0



boolean visited

{2, 4, 7}

1 2 3 4 5 6 7 8

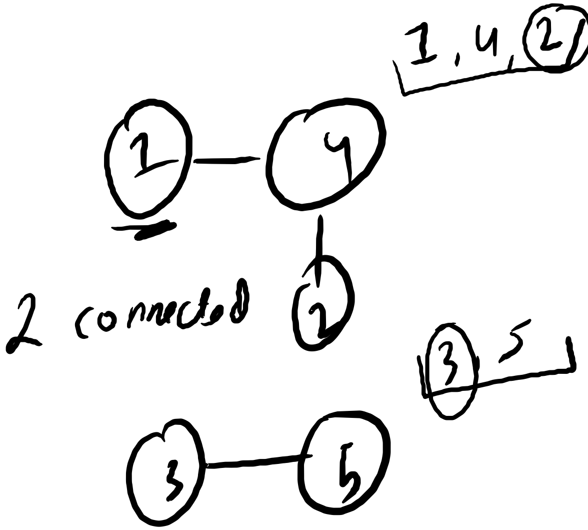
1	2	3	4
1	1	1	1
1	1	2	5
2	3		2
4			
7			

i [2, 4, 7]

list = graph.get(i);

x = 1 (4)

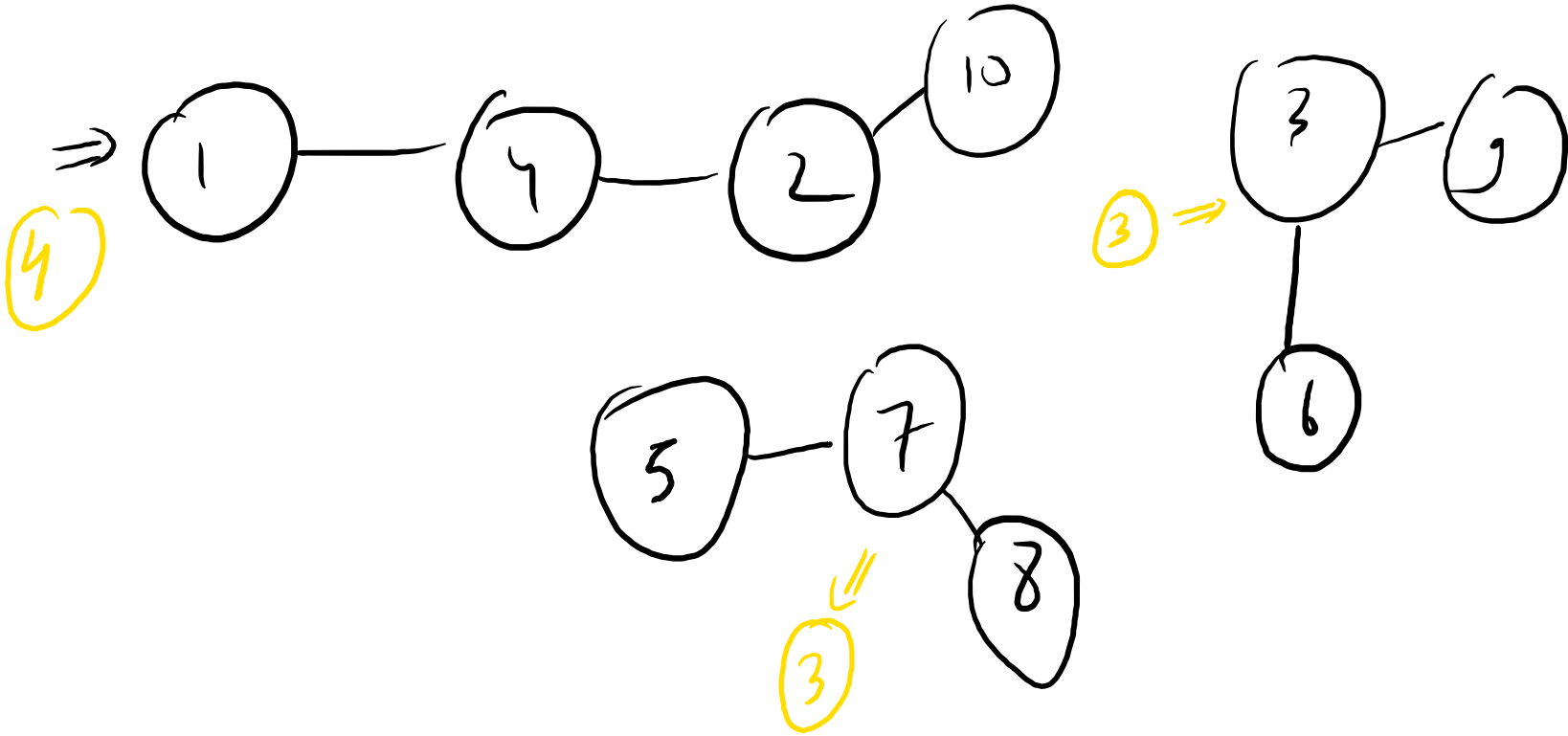
```
for (int x : list) {        x = 2
    if (visited[x] == false) {
        visited[x] = true;
        dfs(graph, x, visited)
    }
}
```

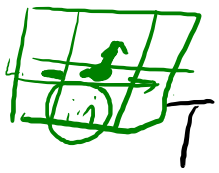


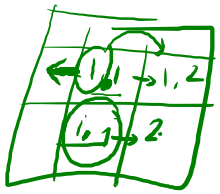

```
dfs( graph, current, visited ) {

    visited[current] = true;
    list = graph.get(current);

    for( int x : list ) {
        if( visited[x] == false ) {
            (visited[x] = true;)
            dfs( graph, x, visited);
        }
    }
}
```


1
4
2
10
4
3
3
9
6
5
7
8
3

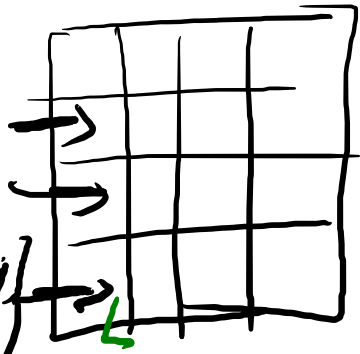




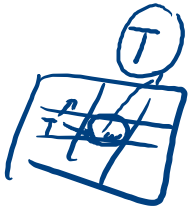
row col
N M

501 421

Disconnect vs Connected



```
dfs( row, col, mat, visited ) {
if( i==N || i<0 || j<0 || j==m || mat[i][j] == 'w' )
    mat[i][j] = 'w'
    c++;
    return;
for
    dfs(i, j+1, mat)
    dfs(i, j-1, mat)
    dfs(i-1, j, mat)
    dfs(i+1, j, mat)
}
```



1 4 10 7 6

Q | 5 7 8 10 | $N\log N + Q\log N$

BS $\Rightarrow N\log N + \log N$

$O(N\log N)$

LS $\Rightarrow O(N)$

$LS \Rightarrow N^2$

$Q(N\log N + \log N)$ X

QN

$Q = N$

BS $\Rightarrow (N\log N + N\log N)$

$\Rightarrow N\log N$

Interviewer

=> Fast I/O.

BR/BW

Sc/Sy

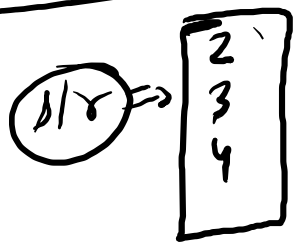
=> Javascript

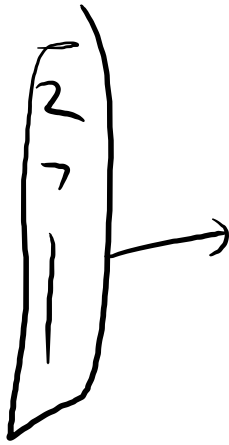
Str =

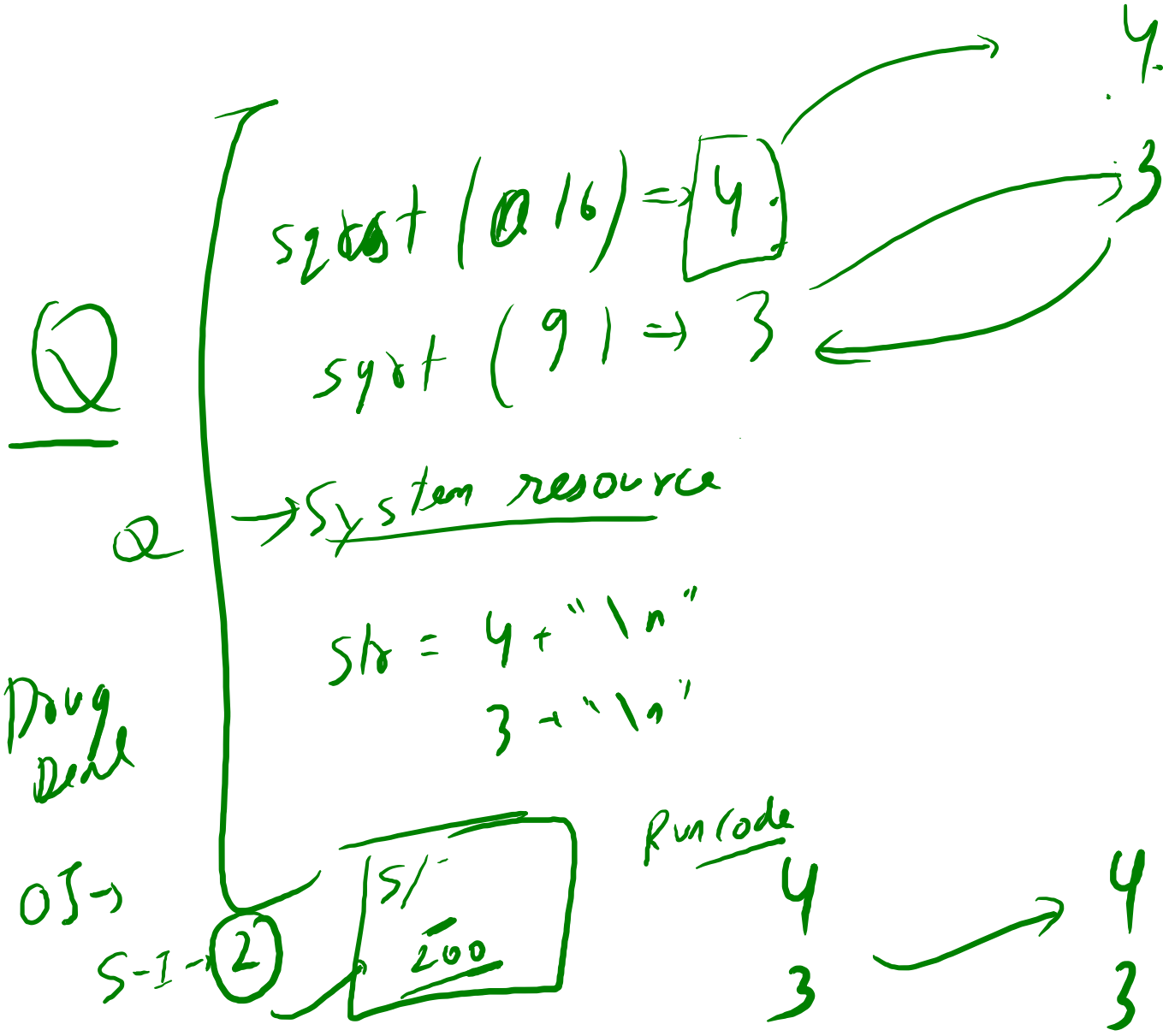
DB

Q

console.log( )






Q
sqrt(@16) => 4
sqrt(9) => 3
Q → System resource
str = 4 + "\n"
3 + "\n"
Drug Desk
OS →
S-1 → 2
S/
200
Run code
4
3
4
3

a) 1 day 1 day cont.

b) 1.5 / 1.5