

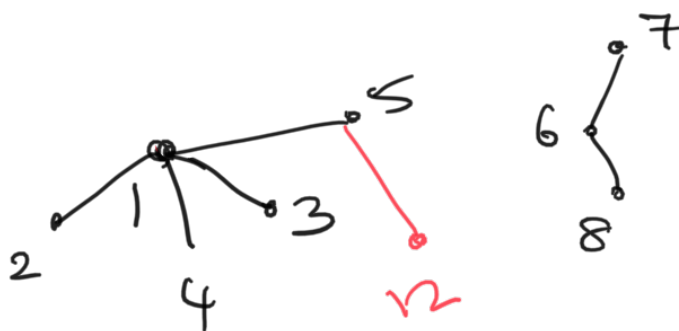
# Unit test details

## Test Forest methods

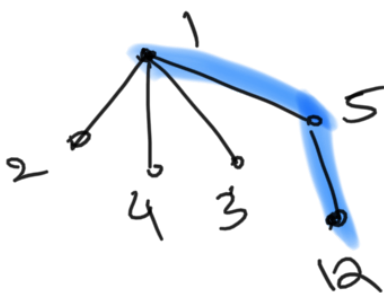
Initial forest



## Testing forest addition

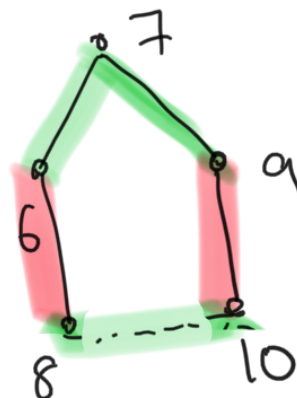


## Testing path to root

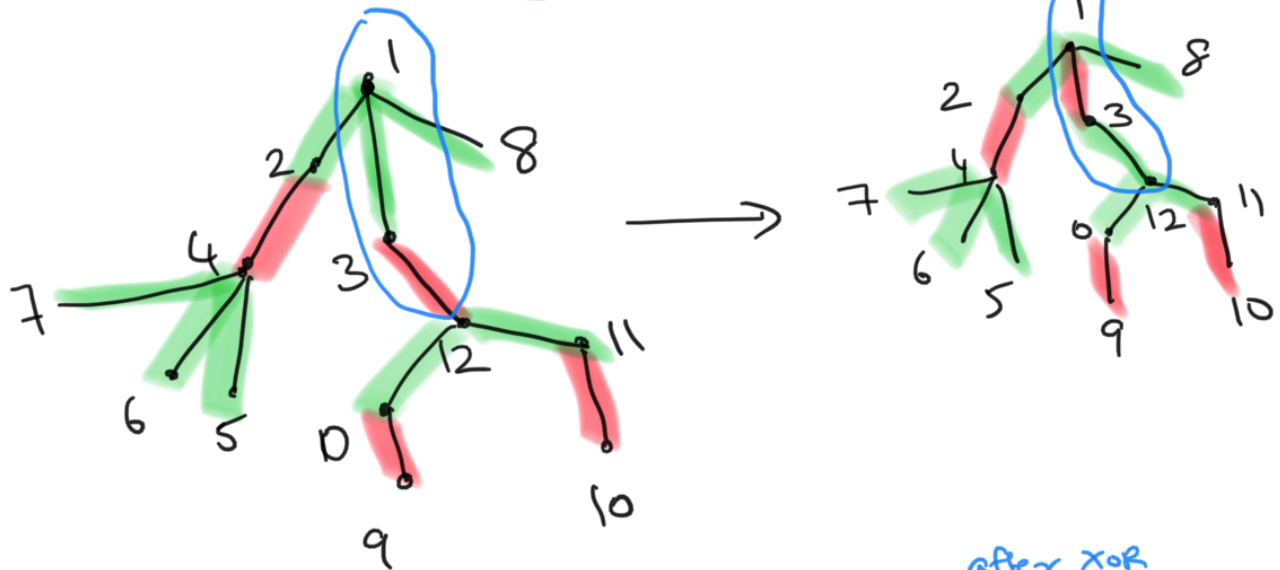


## Testing bloom

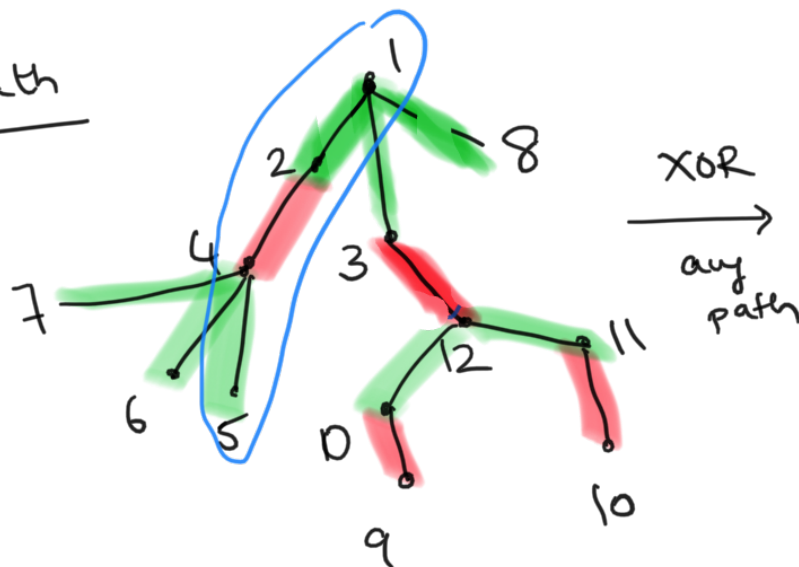
without stem



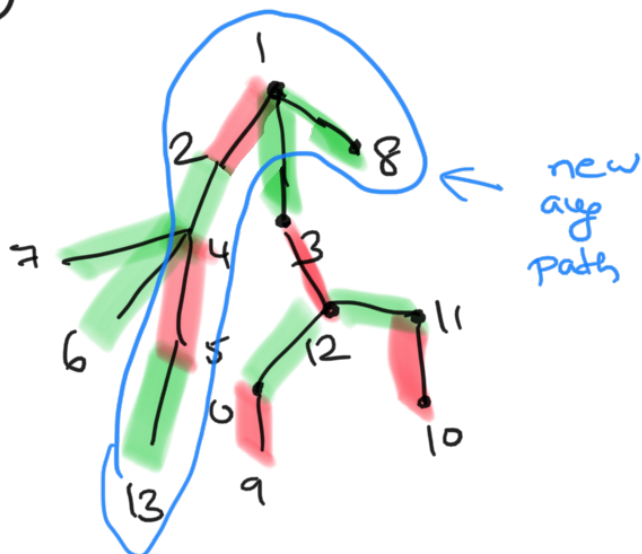
Not even path



①

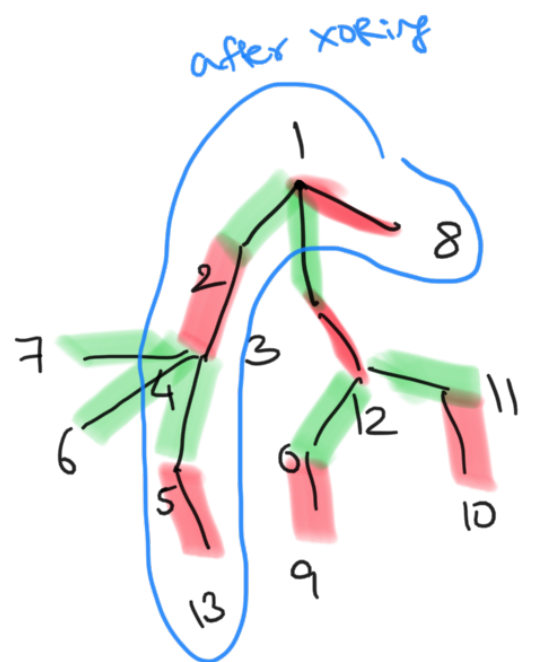


②



XOR

avg  
path



## Test Graph creation

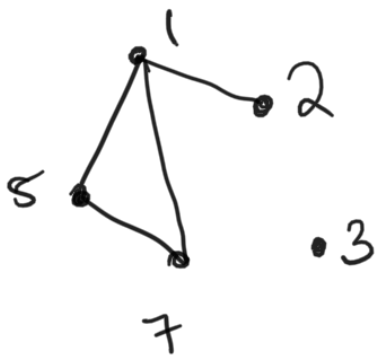
### Adjacency matrix

matrix      vertices

$$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$$

$$[1, 2, 3]$$

should raise  
assertion error

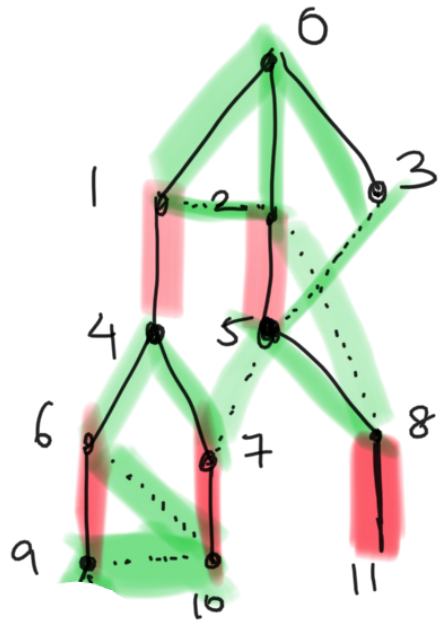


	1	5	7	2	3
1	0	1	1	1	0
5	1	0	1	0	0
7	1	1	0	0	0
2	1	0	0	0	0
3	0	0	0	0	0



$$\left\{ \begin{array}{l} 1 : [5, 7, 2] \\ 5 : [1, 7] \\ 7 : [1, 5] \\ 2 : [1] \\ 3 : [] \end{array} \right.$$

# Quotienting (mod blossoms)



adj dict

- 0: [1, 2, 3]
- 1: [0, 2, 4]
- 2: [0, 1, 5, 8]
- 3: [0, 5]
- 4: [1, 6, 7]
- 5: [2, 3, 7, 8]
- 6: [4, 9, 10]
- 7: [4, 5, 10]
- 8: [2, 5, 11]
- 9: [6, 10]
- 10: [6, 7, 9]
- 11: [8]

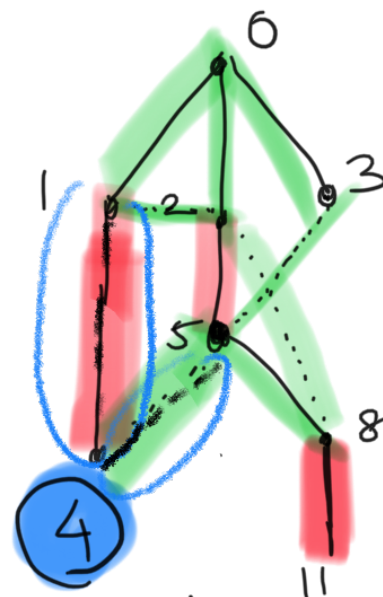
matching

- 1: 4
- 2: 5
- 4: 1
- 5: 2
- 6: 9
- 9: 6
- 7: 10
- 10: 7
- 8: 11
- 11: 8
- rest: none

blossom vertices

- 4, 6, 9, 10, 7

least-common-ancestor  
4



quotiented blossom

Section

1-4



1-4

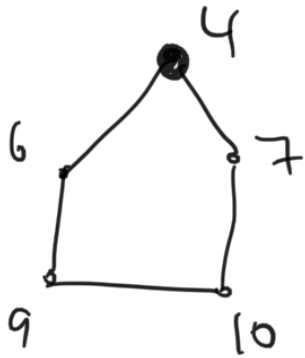
5-4



5-7

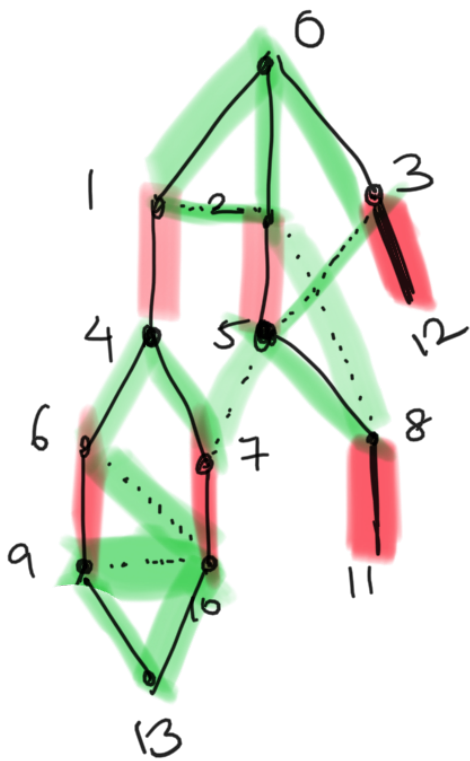
Paths

finding even path



Find even path from  
 $i$  to 4 for  
 $i$  in  $[4, 6, 7, 9, 10]$

finding any path



Test case

maximal matching, maximum matching

