

Solution 1

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1 # Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 # O(n) time | O(d) space - where n is the number of people
4 # in the org and d is the depth (height) of the org chart
5 def getLowestCommonManager(topManager, reportOne, reportTwo):
6     return getOrgInfo(topManager, reportOne, reportTwo).lowestCommonManager
7
8
9 def getOrgInfo(manager, reportOne, reportTwo):
10     numImportantReports = 0
11     for directReport in manager.directReports:
12         orgInfo = getOrgInfo(directReport, reportOne, reportTwo)
13         if orgInfo.lowestCommonManager is not None:
14             return orgInfo
15         numImportantReports += orgInfo.numImportantReports
16     if manager == reportOne or manager == reportTwo:
17         numImportantReports += 1
18     lowestCommonManager = manager if numImportantReports == 2 else None
19     return OrgInfo(lowestCommonManager, numImportantReports)
20
21
22 class OrgInfo:
23     def __init__(self, lowestCommonManager, numImportantReports):
24         self.lowestCommonManager = lowestCommonManager
25         self.numImportantReports = numImportantReports
26
```