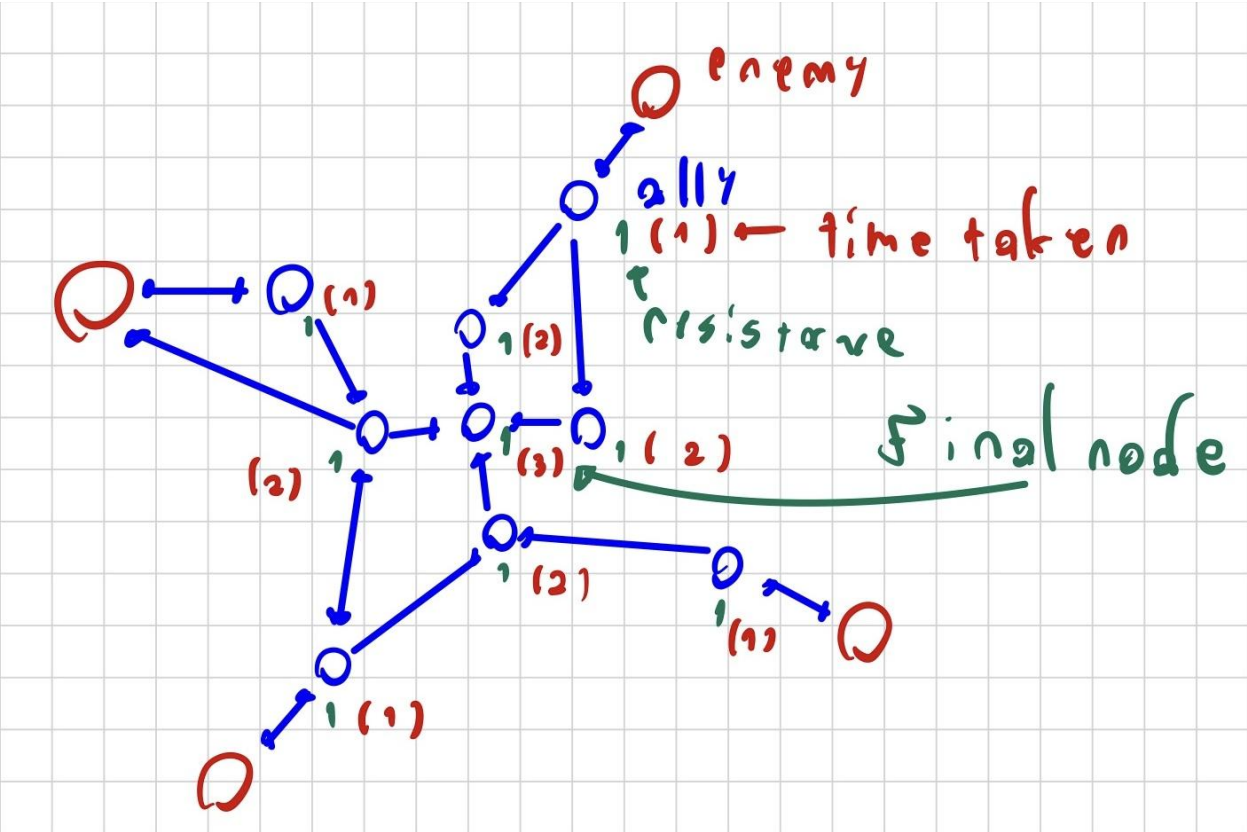
Attrition

1 second, 64 megabytes

Battalion 101 is sent to defend the last stronghold on the galaxy-102 of the federation each star system in the stronghold has its own resistance which has specific T value mean if there is direct route to an enemy's star system will be taken in T time. Both the defending force and enemy force can be represented as node. The direct route can be represented as edge, there can be multiple direct route from star system i to j and route i to j don't specifically mean rote j to i existed. enemy can take over the system and the system are converted to that of enemy all of the ally node can be traversed to by enemy node either by directly or through capturing. Battalion 101 will be deployed on the node that will effectively be the last conquered by an enemy



Your job: find the node that will be last conquered by an enemy with the time it takes to conquer that node without battalion 101

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input:

1st line: the N(number of nodes) and the M (number of edge)

2 - N line: ‘E’ or ‘A’ E indicate node is that node the number of line-1 is that of an enemy and A is that of the ally. If ally’s followed by resistance number

N+1 - N+M+1 line: the integers a and b indicate path from node a to b

output:

1st line the node battalion 101 will be deployed in

2nd line the time it takes to conquer that node without battalion 101

Input	Output
13 18 E E E E A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 1 5 5 1 5 6 5 7	12 3

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6 12 7 12 2 13 13 2 13 11 11 2 11 12 11 10 10 11 3 10 10 3 10 9 9 12 4 8 8 4 8 9	

Author:	Jump