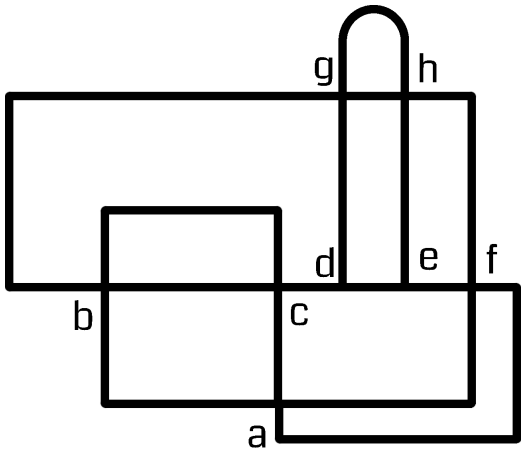
Networks and Complexity

Solution 3-3

This is an example solution from the forthcoming book Networks and Complexity.
Find more exercises at https://github.com/NC-Book/NCB

Ex 3.3: Cleaning an office floor [2]

A cleaner vacuums the corridors in an office floor. The floor plan of the building is as follows:



The cleaner enters the floor via stairs at point d. Then he starts vacuuming and does not stop until all corridors are done. Is this possible without walking through a corridor twice? In which place does the cleaner finish?

Solution

There are two nodes of odd degree (d,e), so there is an eEulerian trail that starts in one node and ends in the other. Hence, the cleaner can start in d vacuum all corridors and end in e.