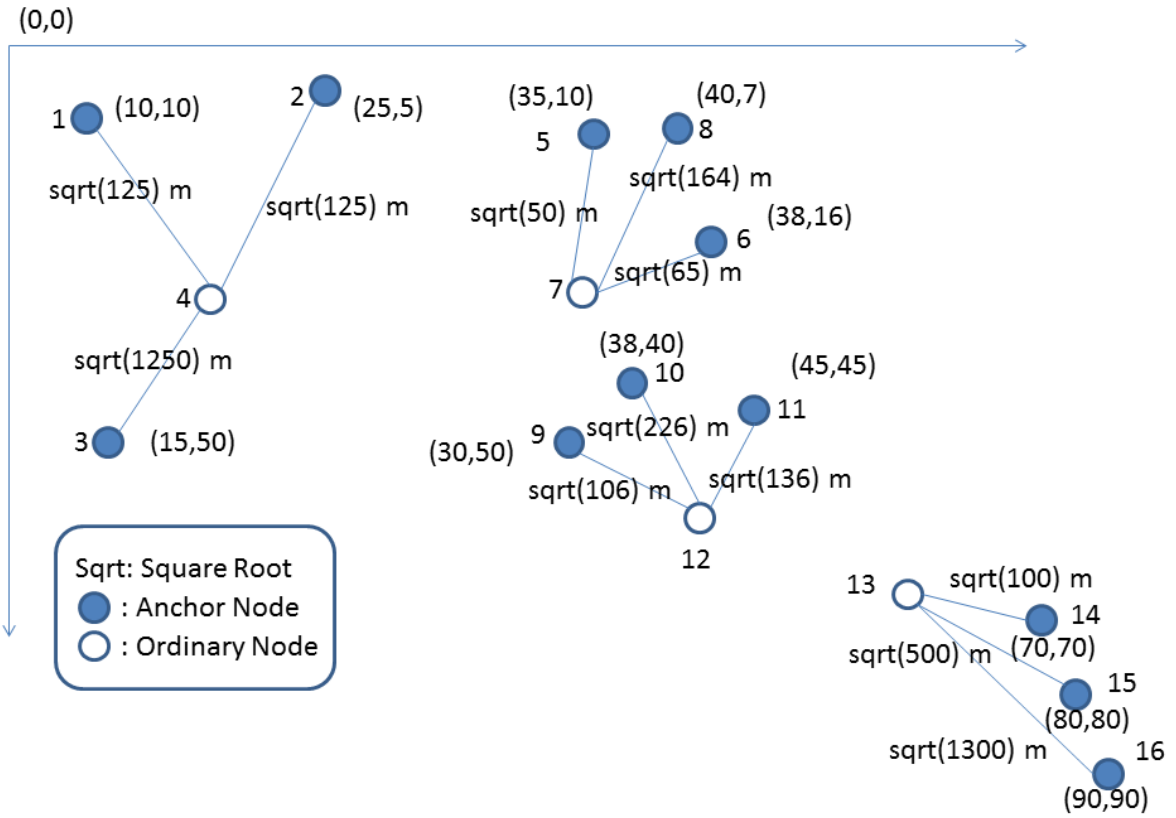
Wireless Sensor Networks Hw 5



In this homework you are requested to implement trilateration for localization in wireless sensor networks using TOSSIM. Initially each anchor knows its coordinates and even distances given on the above graph (Please remember that this is just a simulation, in real scenarios distance is found either by RSSI, ToA and TDoA).

Assume that the graph is fully connected (Each node is connected to the other). When application is started anchor nodes send MESSAGE(X coordinate of anchor, Y coordinate of anchor, square of distance to node n, id of node n) to all nodes. For example node 1 sends MESSAGE(10,10,125,4) to all nodes, node 9 sends MESSAGE(30,50,106,2) to all nodes. Find and print the positions of node 4, node 7, node 12 and node 13 using trilateration by using the information in received messages. You should use gauss elimination to solve equations in your nesC code. If you cannot find the position of any node, please explain the reason. Please write a report which includes your findings and their detailed comments with the theoretical basis of this operation. Please include your source codes.

Deadline: 12 June 2014 (for UBE, UTI and OUBE)
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