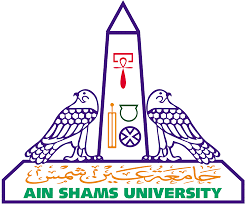
*The algorithm project*

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*Description:*

The project is about generating a number (taken as an input) of nodes at random locations on an XY-coordinate with values ranging from 0 to 100(assuming it’s a 100x100 plane).

At first, each node discovers the surrounding nodes by sending a broadcast; the cost of the messages sent to the neighboring nodes is subtracted from the battery capacity. Then a weighted adjacency table and a graph containing all nodes and edges are formed.

A thousand random messages with random sources and destinations are created. Messages are then sent to their destinations through the shortest path found by Dijkstra algorithm. While sending the messages, power is deducted from each node. Then the total average power is printed.

*Data structures used:*

1. *An edge has the following parameters ID, a source node, a destination node and weight.*
2. *A message has the following parameters type, message text, a source node, a destination node, maximum number of retransmissions.*
3. *A vertex has the following parameters ID, name, x and y coordinates of the node.*
4. *A graph has two lists, one for vertices and another for edges.*
5. *Dijkstra Algorithm class has the algorithm for finding the shortest path for onSe node to all other nodes.*