Use this link

<https://stackoverflow.com/questions/2968893/representing-graph-using-relational-database>

For a directed graph you can use a table edges with two columns:

nodeid\_from nodeid\_to

1 2

1 3

1 4

If there is any extra information about each node (such as a node name) this can be stored in another table nodes.

If your graph is undirected you have two choices:

* store both directions (i.e. store 1->2 and 2->1)
* use a constraint that nodeid\_from must be less than nodeid\_to (i.e. store 1->2 but 2->1 is implied).

The former requires twice the storage space but can make querying easier and faster.

FOR Q1 – have 1 and 2 and then add in distance calculated with the x,y