# Analysis

Input:

locations of n nodes with their coordinates

Job:

create a network topology(undirected graph) with following properties:

1. Contains all nodes
2. Degree of each vertex is at least 3
3. Diameter of the graph is at most 4(hop-distance)
4. Total cost of the network topology is as low as possible by the total geometric length of all links

Goal:

Implement two different heuristic algorithm(it does not have to guarantee the exact optimum)

E.g: Branch and Bound, Simulated Annealing, Greedy Local Search, Tabu Search, Genetic Algorithm

Creative ideas will be appreciated.

Two algorithms should be sufficiently different to compete in finding good solution.

Tasks:

* Describe the two algorithms.
* Provide reference to the source
* Provide pseudo code with sufficient comments
* Run the program on randomly generated examples(at least 5 examples), pick n random points in the plane, this can be done by generating random numbers in some range and taking them as coordinates, n >= 15
* show result(nodes` position) graphically.
* Draw some conclusion about how the two algorithms compare

Design

1.Given n nodes with coordinates

\* how to identify coordinates.

\* each node will have coordinate variables: x, y