# Assignment 7

# Due at the end of your lab

1. Implement Kruskal’s, Prim’s and Dijkstra’s algorithms, for minimum weight spanning trees of connected positive edge weighted undirected graphs and single source shortest paths in positive edge weighted undirected graphs respectively.
2. Consider an algorithm which given a positive edge weighted connected undirected graph, sorts the edges in ***non-increasing*** order of weights. It then considers the edges in this order and eliminates an edge if it forms a cycle with the edges not yet eliminated, and retains the edge if it forms no cycle with edges not yet eliminated. Prove that this algorithm yields a minimum weight spanning tree. This algorithm is basically a cycle elimination version of Kruskal’s algorithm. Instead of selecting edges starting from an empty set, it rejects edges starting from the whole graph. **Modify this algorithm** to ensure that the last cycle to be destroyed is decided by a user input. The modified algorithm should also yield an {\sc mst}.