## **Data Structures Homework**

1) Modify the Dijkstra's algorithm, so it will find the shortest path in a graph, when the vertices are weighted and not the edges. Present the output data, which will best show your work. No source code needed.

2) Consider using a simple linked list as a dictionary. Assume the client will never provide duplicate

elements, so we can just insert elements at the beginning of the list. Now assume the peculiar situation

that the client may perform any number of insert operations but will only ever perform at most one

lookup operation.

(a) What is the worst-case running-time of the operations performed on this data structure under the

assumptions above? Explain!

(b) What is the worst-case amortized running-time of the operations performed on this data structure

under the assumptions above? Explain!