

CIS 360 Lab #7: Dijkstra's Single-Source Shortest Path Algorithm

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Implement Dijkstra's algorithm (Algorithm 4.3) with modification so that it computes the lengths of the shortest paths.

- Analyze the time complexity modified algorithm and show the result in order notation.
 $O(n^2)$
- Test the program on the graph in Exercise 2, Page 196. Assume that each undirected edge represents two directed edges with the same weight. Use it to find the shortest paths from the vertex v_5 to all the other vertices in the graph.
- Test it on another graph (Graph 2) with 15 vertices and around 30 edges, for a selected single source, measure the running time.
- Test it on another graph (Graph 3) with 15 vertices and around 110 edges, for a selected single source, measure the running time.