COP 3503 Honors – Homework 6 (Non-Collaborative)

Due Date: November 9, 2018

1. (50 pts) Implement Dijkstra's algorithm using two different implementations of the priority queue. The first implementation should use a binary heap. The second implementation should use a Fibonacci heap. You do not have to implement these data structures yourselves; you can use any library from the web. Test your algorithm on several different directed graphs. You can use examples generated from the Java applets we have used in class. Compare the running times of the two implementations on the graphs. You should test your algorithms on at least 10 different graphs of varying complexity. Make sure you submit your code and output.

Extra Credit (10 additional pts):

Cormen at al., page 663, Exercise 24.3-4