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**CMSC 204 Assignment 6 Lessons Learned**

While working on this assignment, I learned how to implement dijkstra’s shortest path algorithm. I ended up using a method not mentioned in the power points, but it uses two data structures, in this case I used sets, one for storing vertices that have been visited, and one for storing vertices that have not been visited yet. It took me a few tries to get this implementation down, but it seems to be working well!

I also learned how to implement a graph generally. Before this assignment, I had never worked with graphs. I knew about them and I knew about the searching algorithms, but I didn’t know anything about shortest paths. This assignment helped me get more comfortable with graphs and shortest path algorithms.

If I was to do this assignment again, I’d probably try to optimize it. I don’t think my code in this assignment is very optimal, with a lot of my methods probably having a higher O notation than necessary. I’d probably use two sets, one for vertices, and one for roads, instead of the array list of linked lists approach I took this time. My code has to return sets anyway for the edgeSet() and vertexSet() methods, so it would make more sense to use sets to start with anyway.