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**Class:** CMSC204 – 32461 **Instructor:** Farnaz Eivazi **Date:** 05/08/2021  
**Assignment: Assignment 6 (Town Graph Manager)**

**Learning Experience:**

Creating Town and Road classes were easy and helpful to understand the concept of implementing equals, compare to and hashCode methods. Provided Javadoc for these two classes had good information. The Graph class however had methods which required more thinking and organizing. I started by adding sets to store town and roads as it was described in the assignment description document. Almost all methods required to loop through the sets which was helped me to understand more on how to work with sets.

The dijkstraShortestPath and shortestPath methods were the hardest part of this class. I implemented the dijkstraShortestPath method using a map of towns (a 1-1 connection of two towns) and map of weight which had linked each town to its weight going toward the source town). Although trying different approach and adding fine details the methods were still failing due to “Null Pointer” exception which might have be due to an underlying method. I was not able to solve that issue.

The TownGraphManager class was respectively easier, while the methods in the graph was using Towns as parameter, the methods provided by the TownGraphManagerInterface was using “String” which I had to use Town constructor when using the string in the graph method of Manager class.

Overall, the assignment was helpful in understanding the concept of sets, using generic Interface of two types and reading from file.