Report:

By reading the code, I found out the “KeyboardReader” class has the utility for me to get a txt file by passing in the file name as a String.

Then “GraphInput” class transforms the txt file to a “SimpleGraph” type.

We want to put the keep tracking the smallest weight edge and we are required to use a min heap, the priority queue. Therefore, keep track of minimum weight edge is dealt by using priority queue.

I have not learned Union data structure. I had to watch the video about it, then I went over this youtuber’s source code on the UnionFind data structure.

https://www.youtube.com/watch?v=RBSGKlAvoiM&t=8935s

2:28:56 Union Find introduction, 2:33:57 Union Find Kruskal’s Algorithm, 2:40:04 Union Find

https://github.com/williamfiset/DEPRECATED-data-structures/blob/master/com/williamfiset/datastructures/unionfind/UnionFind.java

Iterator allows us to get all edges and all vertices. The most taking time would be learning Union Find.

Main method getting the file is referenced provided class “KeyboardReader”.

The most challenging part is to understand the provided code and only focus on the problem related code. There are some utility codes are useful but unrelated to the problem. Self-learning the Union find data structure and incorporate into the Kruskal’s algorithm is also hard.