1 Problem 3: Implement Graph

1.1 Description of my representation:

For my representation, I chose an adjacency list for my final representation. The list is memory efficient for the graphs as it only stores information about the edges that actually exists, resulting in reduced memory compared to using an adjacency matrix. The edge implementation has the most simplicity in terms of storing individual connections, but it lacks efficiency in traversal, as it would require you to scan the entire collection to determine neighboring nodes. I also did an adjacency matrix originally using a $Map < String, Map < String, String >>$ but using a map for the edges as well causes an issue where same edges with different weights, are not accounted. So I ended up switching to an adjacency list because it had way less cognitive load on me when I was restructuring to account for that.