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Lesson Learned  
Assignment 6

Working on this project taught me a lot about managing complex data structures like graphs. I learned how important it is to carefully handle vertices and edges to make sure the graph behaves correctly. For instance, making sure that adding and removing edges updates both the graph and the vertices involved was crucial. I had to be careful with operations to avoid inconsistencies, such as ensuring that when an edge is removed, the corresponding vertices are also updated properly.

Another key lesson was understanding the difference between undirected and directed edges. I had to handle edge cases where the direction of the edge affects how we find connections between vertices. This meant updating my methods to properly check for connections in both directions, which required some extra attention to detail.

Finally, implementing Dijkstra’s algorithm was a challenge. It was important to ensure that the algorithm correctly finds the shortest path between vertices, taking into account all possible paths and edge weights. I learned that breaking down the algorithm into smaller, manageable parts and testing each part individually can help identify and fix issues more easily.