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Mini Solution

Problem 2 Write Up

**2) Compare the time required for solving Problem 2 with the time required for Problem 1. Which ran faster and by how much?**

With several runs, I found that Problem 2 ran significantly faster than Problem 1. When I limited the closest DCs to 3, the run time was approximately 0.45 seconds. When I limited the closest DCs to 4, the runtime was approximately 0.6 seconds. The base run for Problem 1 had a runtime of approximately 1.4 seconds. This meant that limiting DCs cut the time to complete the optimization down so that it completed in of the runtime for Problem 1, where n was the specified limit on the DCs.

**3) Compare the solutions for Problem 1 and Problem 2. Was the solution of Problem 2 as good as for Problem 1?**

Yes, the solution for problem 2 was as good as the solution for problem 1. In fact, the solution for problem 2 was better given the set up. The same answer was found to be reachable in a fraction of the time it took to run problem 1.