Assignment 4

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1. You can use shortest path algorithms like Floyd-Warshall or Bellman-Fords to check if given graph contains any negative cycle. Read more about it here.

   To check your implementation solve this task.

2. You have given a weighted directed graph with positive weights. You have to go from vertex 1 to vertex n. Now, modify Djikstra'a Algorithm to find how many shortest length paths are there from 1 to n and what is minumum and maximum number of edges in such path.

   You can check your implementation here.

3. Suppose you have applied Floyd-Warshalls Algorithm on weighted undirected graph and you have calculated distance array. Now you decrease weight of edge {u, v}. How will you update distance array efficiently in $O(V^2)$ time?