CSE208: Data Structures and Algorithms II

Sessional Offline: All pair shortest path

Deadline: 06/07/2023, 11:55 pm

Implement a) Matrix multiplication and b) Floyd-Warshall algorithms for solving the All Pairs Shortest Path problem. The problem is to find the shortest distances between every pair of vertices in a given edge-weighted directed Graph.

Input: The first line of the input file will contain the number of vertices $0 < n < 100$ and the number of edges m (≤ 10000) followed by m lines, each containing origin u, end v, and weight w (≤ 100000) of an edge of the directed graph.

Output: Distance matrix including distances between every pair of vertices

Sample input and output

4 6 1 2 8 1 4 1 2 3 1 3 1 4 4 2 2 4 3 9	Shortest distance matrix 0 3 4 1 5 0 1 6 4 7 0 5 7 2 3 0
4 4 1 2 5 2 3 3 3 4 1 1 4 10	Shortest distance matrix 0 5 8 9 INF 0 3 4 INF INF 0 1 INF INF INF 0