Analysis of Algorithms: Assignment 8

Due date: April 9 (Wednesday)

Problem 1 (5 points)
Write efficient algorithms for converting (a) an adjacency-list representation of a graph into an adjacency matrix and (b) an adjacency matrix into adjacency lists. Give the time complexity of your algorithms.

Problem 2 (5 points)
This problem is from Exam 2; give a solution even if you solved it during the exam.

Suppose that G is a weighted undirected graph, where all weights are integers between 1 and 5, and let u and v be two vertices of G. Give an efficient algorithm SHORTEST-PATH(G, u, v) that finds a minimal-weight path from u to v.