CSCI 570 - Fall 2016 - HW 8

Due October 29, 2016

1. At a dinner party, there are n families $a_1, a_2, \ldots, a_n$ and m tables $b_1, b_2, \ldots, b_m$. The i^{th} family a_i has g_i members and the j^{th} table b_j has h_j seats. Everyone is interested in making new friends and the dinner party planner wants to seat people such that no two members of the same family are seated in the same table. Design an algorithm that decides if there exists a seating assignment such that everyone is seated and no two members of the same family are seated at the same table.

2. The edge connectivity of an undirected graph is the minimum number of edges whose removal disconnects the graph. Describe an algorithm to compute the edge connectivity of an undirected graph with n vertices and m edges in $O(m^2n)$ time.

3. Problem 7 from Chapter 7.

4. Problem 9 from Chapter 7.