Artificial Intelligence Lab 7

September 10, 2018

1. Consider the road network in the Figure 1. Find the shortest path from source to goal using A^* algorithm with heuristic as Euclidean distance.

2. Suppose there are two modes of transportation, Cycle and Bus. The speed of cycle in a road is 25 km/hr. The speed of bus is 50 km/hr. The speed of the bus reduces to 37.5km/hr on 50% congestion, and reduces to 10km/hr on full congestion. Speed of the cycle doesn't vary. Bus cannot travel on roads with distance less than or equal to 3km/hr. At each node the optimal mode of transportation is chosen. Assume that the budget is Rs. x and travel cost of bus is Rs. y per hour. Find the shortest path from source to destination and the time taken on

   (a) full congestion

   (b) 50% congestion

   (c) No congestion

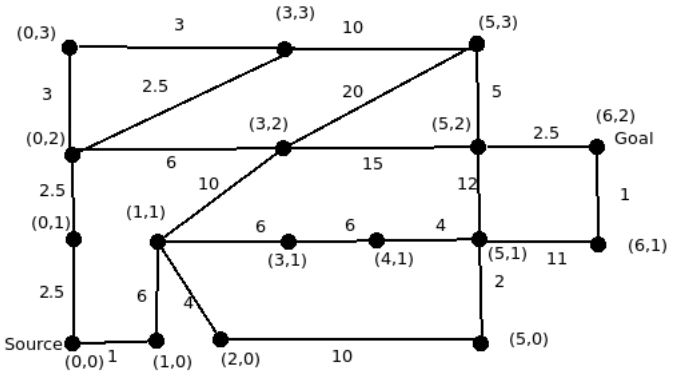

Figure 1: Road network