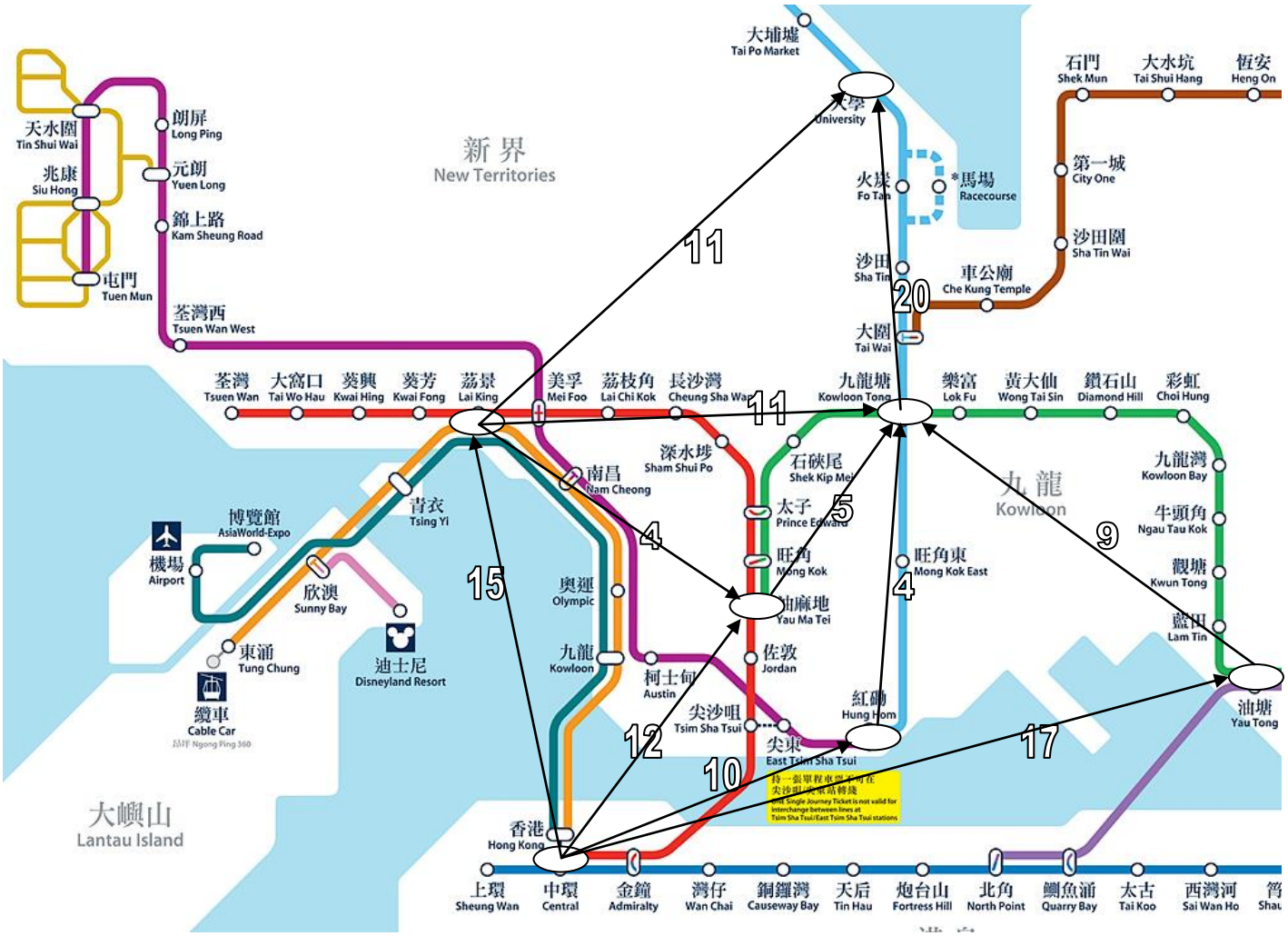
CSCI3230 Fundamentals of Artificial Intelligence
Written Assignment 2
Suggested Solution

1. Questions

(a) The distances between some places and the estimated distances to University are shown in the map and the table respectively below. Use both the following <u>two</u> algorithms to search for a shortest path from **Central** to **University**. Show **all** your steps and state the paths and costs clearly. (In each step, you do not need to consider the districts you have just visited. It is just a virtual situation, the tutor suggest you not being serious about the distances)

i. Uniform-cost search with path cost

ii. A* search

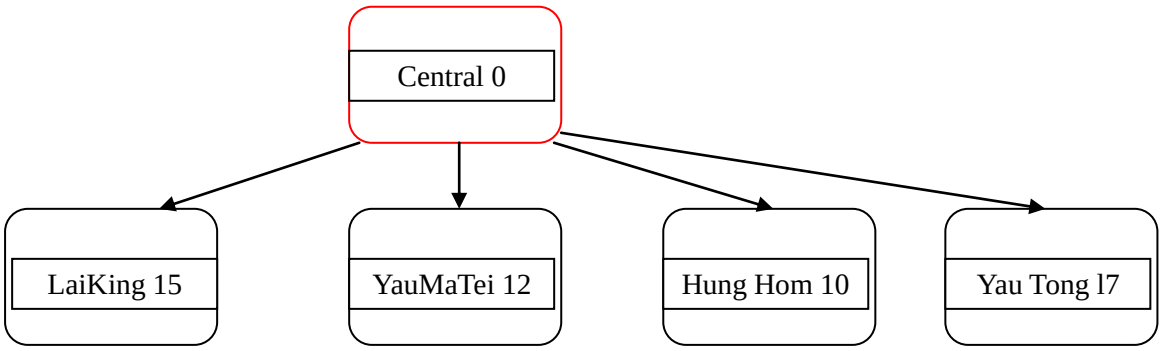


Heuristic Estimated distances to University				
Central	20		LaiKing	5
Yau Ma Tei	24		Hung Hom	20
Yau Tong	10		Kowloon Tong	18
University	0			

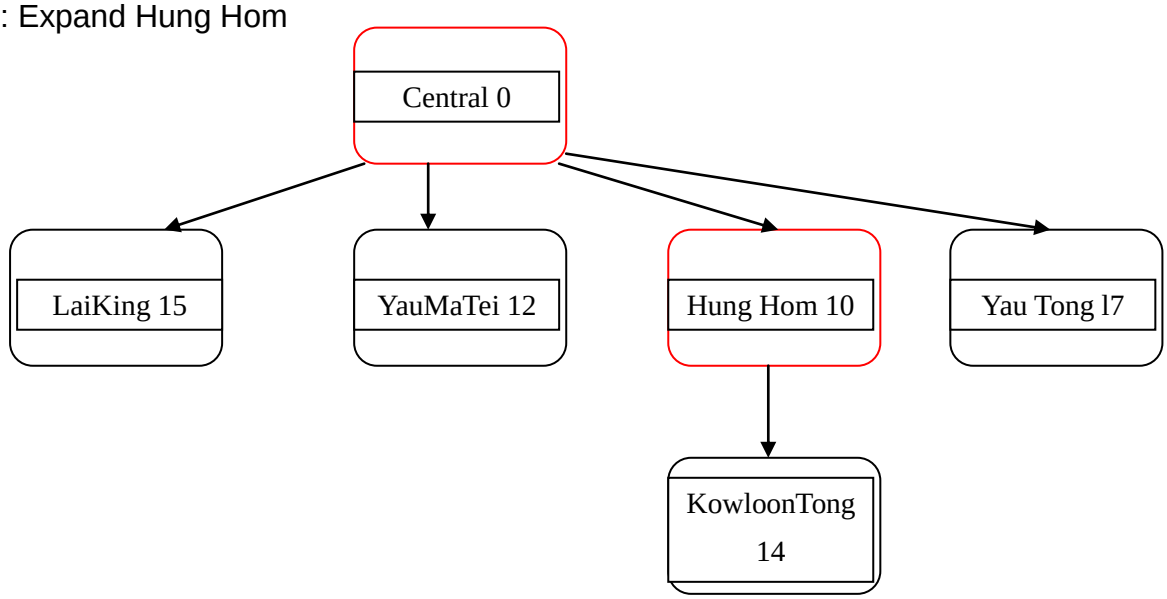
Answer

Uniform-cost search with path cost

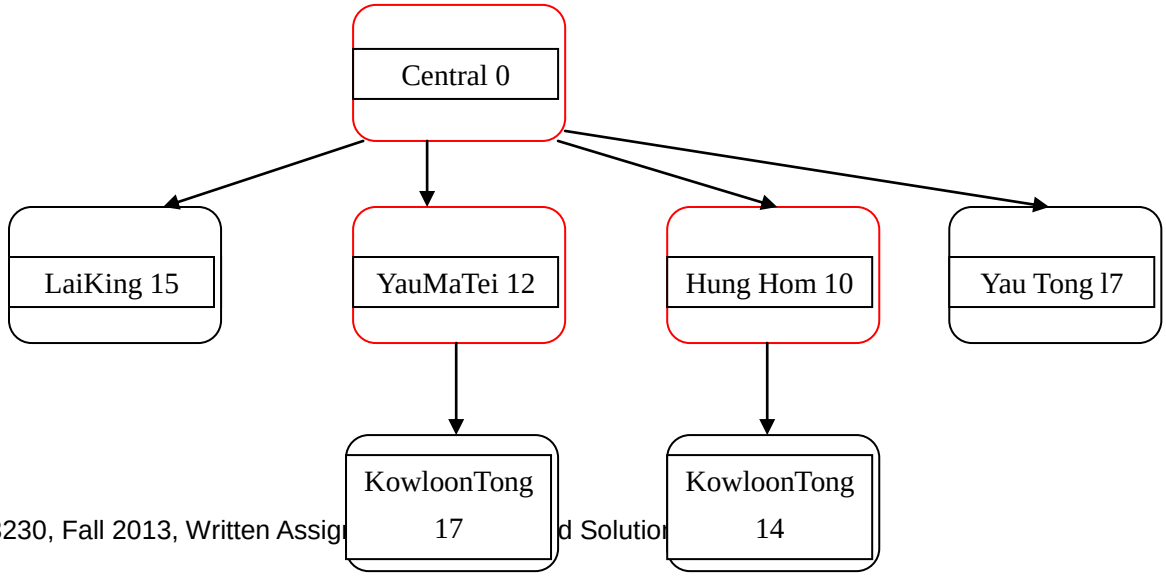
Step 1: Expand Central



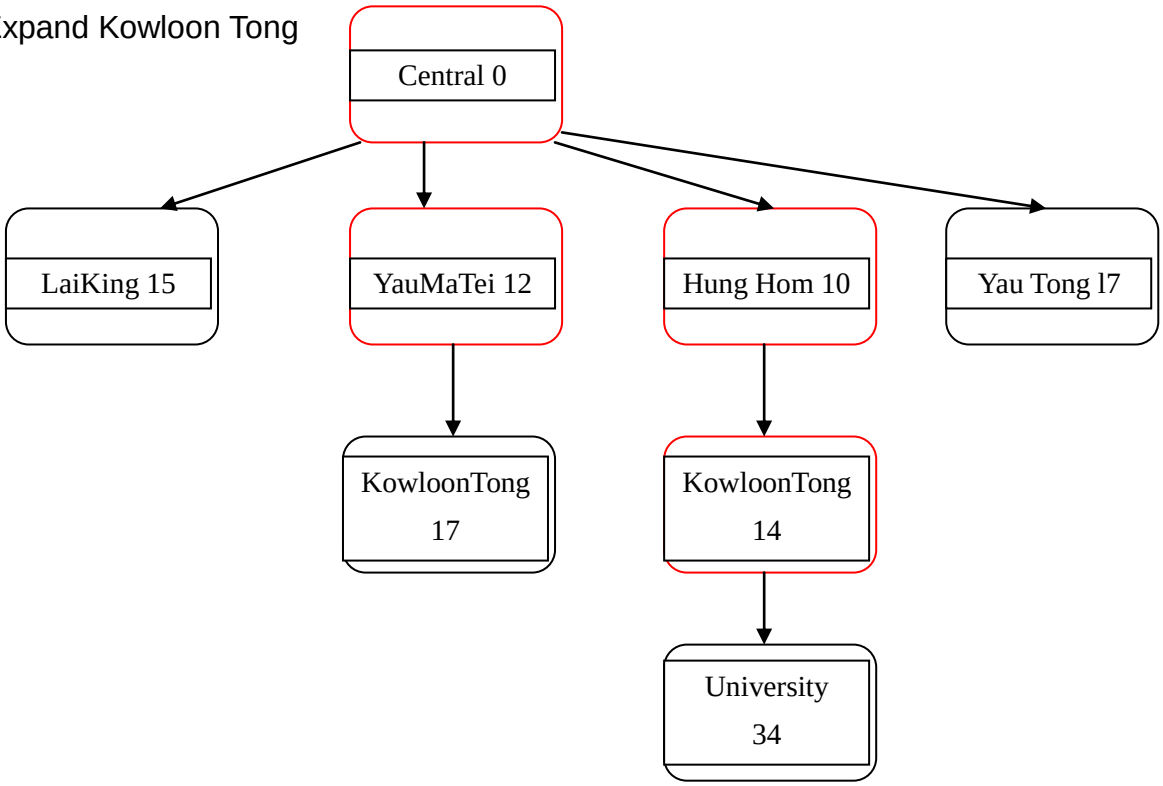
Step2: Expand Hung Hom



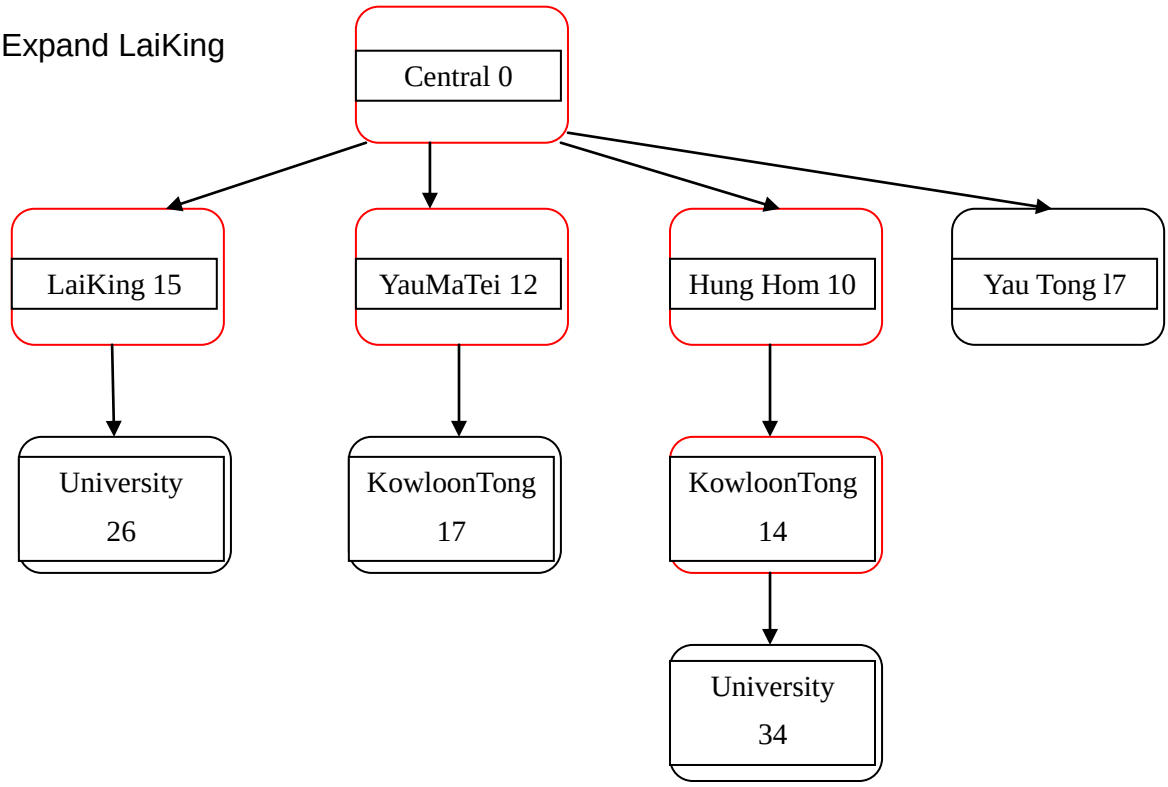
Step3:Expand YauMaTei



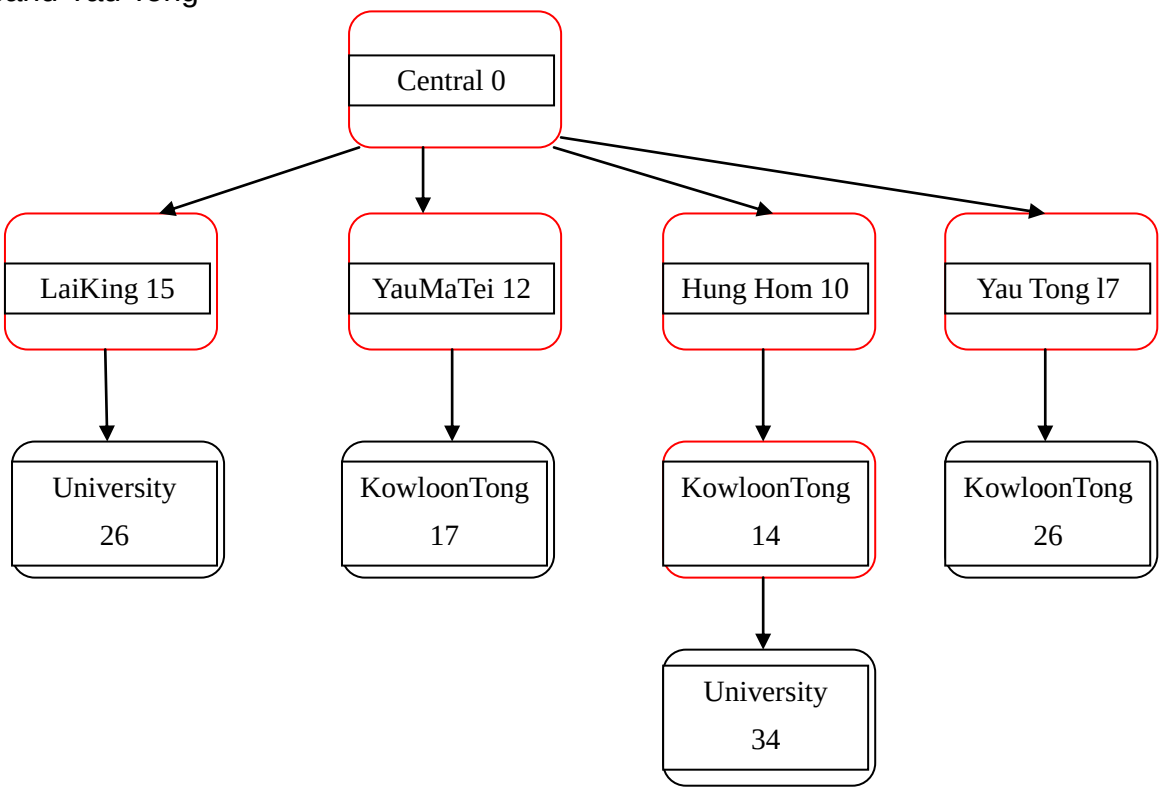
Step4:Expand Kowloon Tong



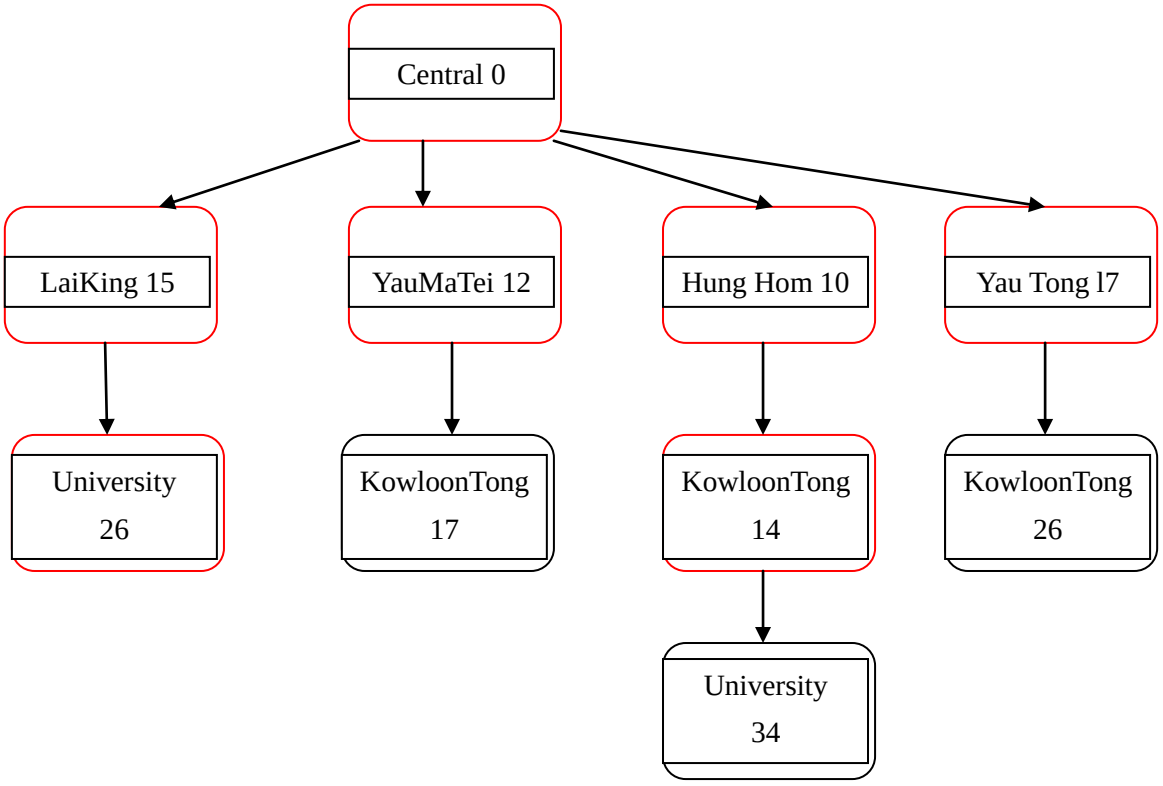
Step4:Expand LaiKing



Step4:Expand Yau Tong



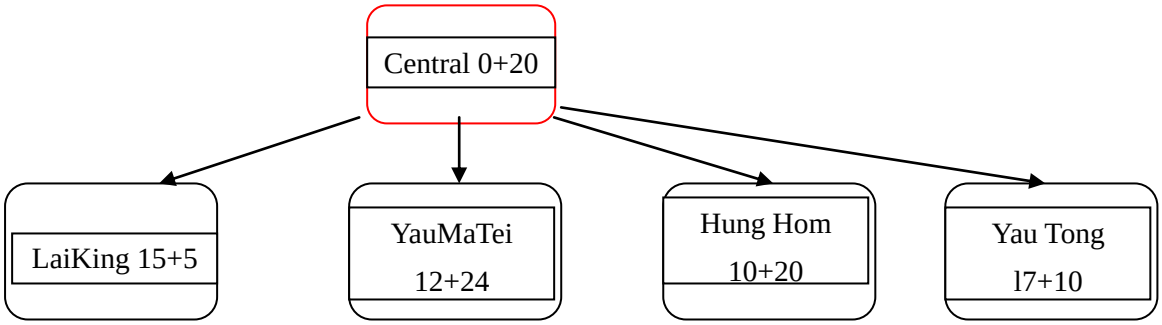
Step5: Expand University



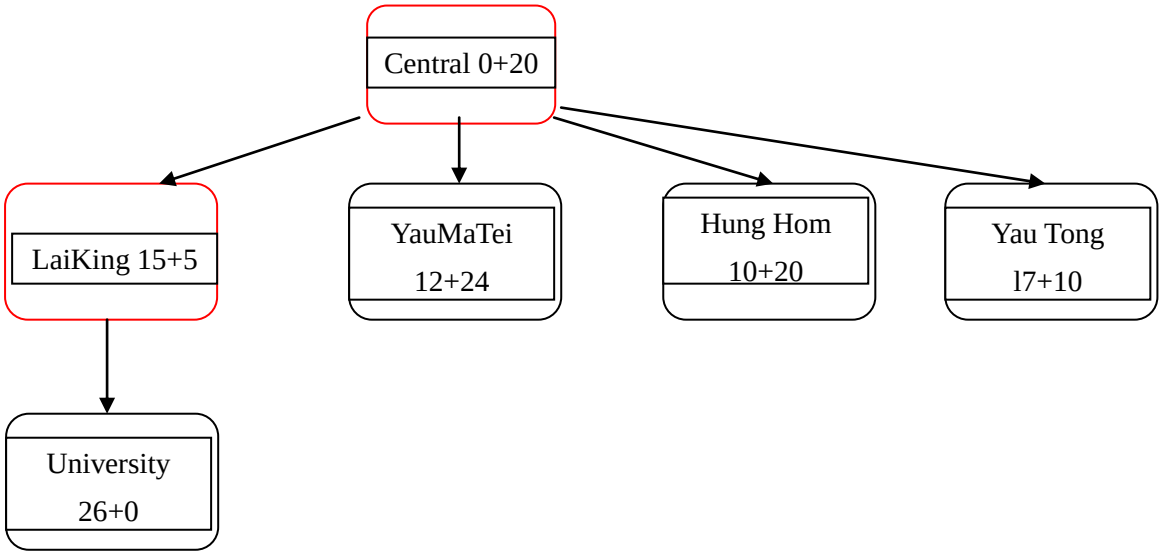
Any similar ideas are accepted. [25 marks]

A* search:

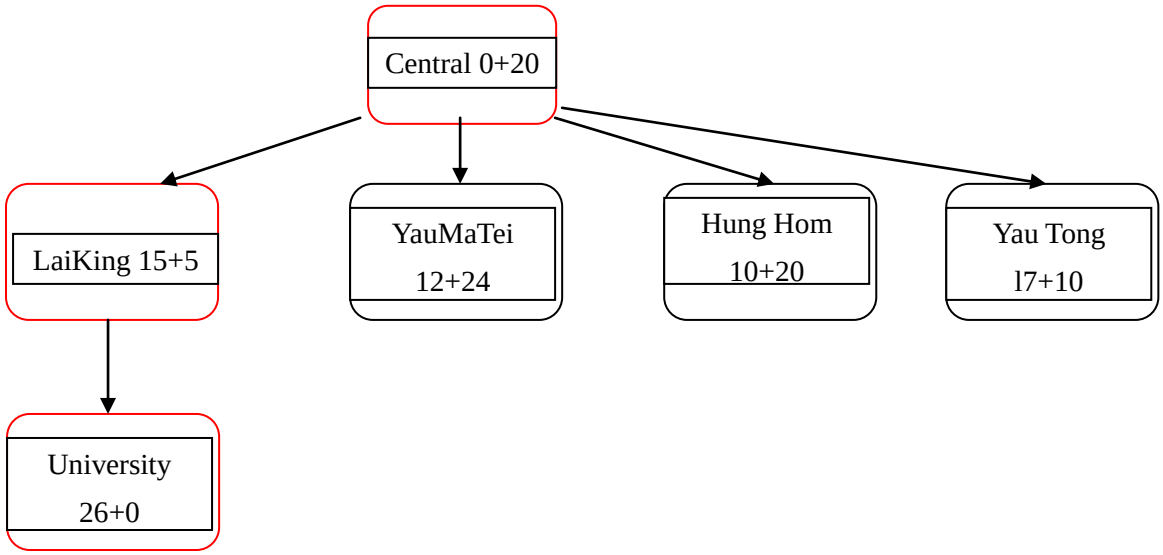
Step 1:Expand Central



Step 2:Expand LaiKing



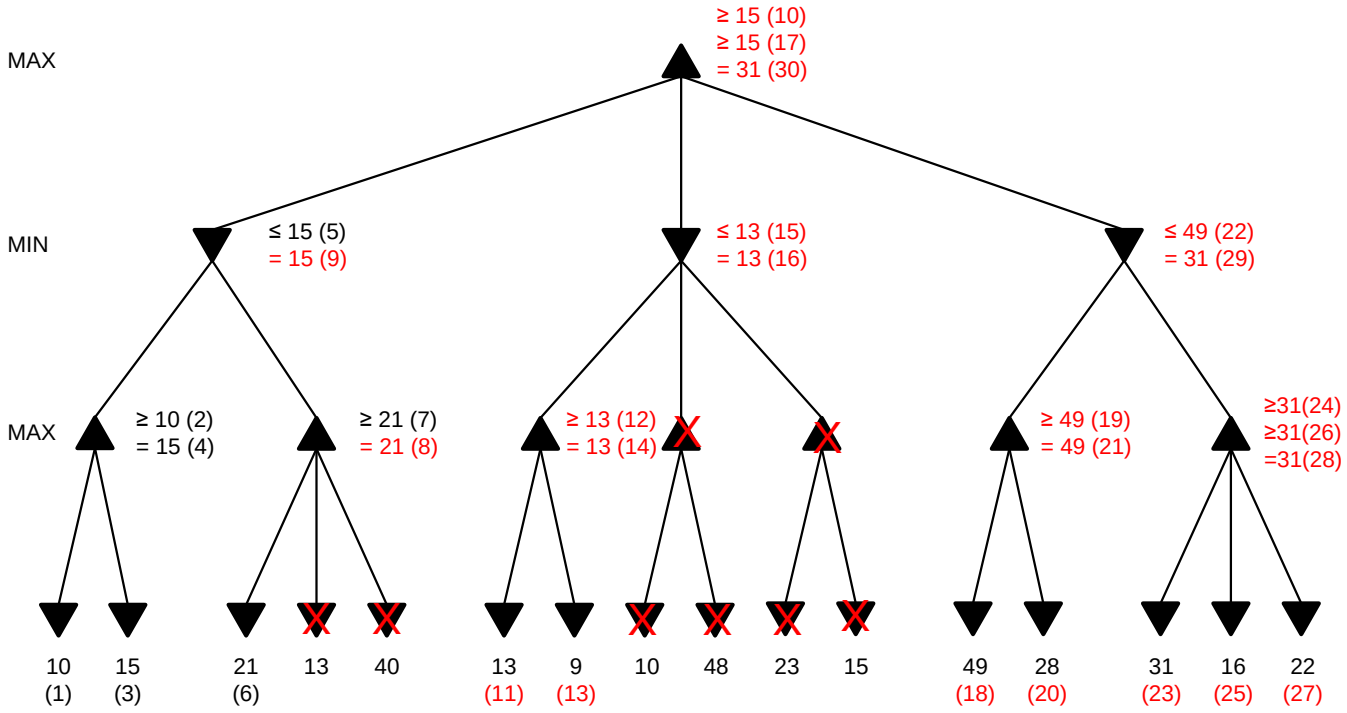
Step 3:Expand University



Any similar ideas are accepted. [25 marks]

(b) Three-play game trees with minimax algorithm.

Answer



Any similar ideas are accepted. [50 marks]