

Abstract

There are at least 44 routes of Bandung public transportation (angkot), both within the city itself and between its neighboring cities. When people want to travel by this angkot, those large number of routes frequently confusing especially for those who not familiar with the angkot routes of Bandung such as tourist or newcomers.

A searching method that often used in shortest path cases is the A* algorithm. However, when implemented on a large problem space A* requires a large storage memory as well. Iterative Deepening A* (IDA*) is a modification of the A* algorithm that is able to overcome this memory problem. But for the searching done iteratively, IDA* must generate the same nodes repeatedly, thus saving memory should be paid to waste the time of execution. With the disadvantages and advantages of each, the two algorithms is not appropriate when applied to mobile devices that have a variety of limited resources. By doing a search of two directions ie forward and backward, Bidirectional IDA* (BIDA*) consumes less memory than A* and in terms of execution time BIDA* is faster than IDA*.

The end result of this research is to BIDA* complete but may not be optimal. Of the 50 tests there are 5 sub-optimal solution paths with the differences that still acceptable distance. But in terms of effectiveness BIDA* consumes much less memory than A* with execution time which is much faster than IDA*, so it can be concluded BIDA* is able to overcome these shortcomings for the two algorithms can be implemented on mobile devices.

Key words: A*, IDA*, BIDA*, heuristic, memory, time of execution