

Abstract

One of Artificial Intelligence problem solving technique is known as planning. In solving problems of planning, search algorithms can be used. Iterative Deepening A* (IDA*) is one of the search algorithms that promises a complete and optimal solution. Unfortunately, IDA* Algorithm needs a longer processing time because of nodes-revisit problems that occurs in the Algorithm. Seeing that, here we will propose one of IDA* Algorithm's expansion known as IDA*SNC that in principle have a vision of decreasing the node expansion compared to IDA* Algorithm.

In this final project, IDA* and IDA*SNC Algorithms in Backward Planning with the use of additive heuristic as a cost-estimate to be used to solve planning problems in the Blocks World domain.

From this final project research, it is proved that implementing IDA* and IDA*SNC Algorithms in the Backward Planning strategy can solve any problems in the Blocks World domain. The use of IDA*SNC Algorithm proved to reduce node expansion processes towards IDA* Algorithm despite the insignificancy. The solutions obtained from algorithms IDA* and IDA*SNC are optimal when compared to the solutions obtained using Graphplan.

Keywords: IDA*, IDA*SNC, additive heuristic, artificial intelligence, planning, Backward Planning, blocks world, node expansion, goal state, initial state, Graphplan.