Assignment 3 - Alvis

Task:

Representing and checking the validity of the alpha-beta algorithm on a game tree using ALVIS tool

Colouring Schema:

1. Explored but not yet evaluated nodes are coloured red during the runtime
2. Evaluated nodes are coloured green
3. Pruned nodes (subtree) are coloured light blue
4. Cutoff edges are left uncoloured
5. Trace of the path from where the minimax value comes is coloured white

Display:

1. The nodes are labelled in a level order traversal increasing from 0, ie root node.
2. The value of the leaf node is displayed after the node turns green
3. The alpha and beta node values are displayed whenever their evaluation is complete while executing the algorithm
4. Cutoffs are also displayed with the type when they occur

Notes:

1. Performed Alpha-Beta pruning
2. A Search algorithm seeks to decrease the number of nodes that are evaluated by the minimax algorithm in its search tree.
3. It stops evaluating a move when at least one possibility has been found that proves the move to be worse than a previously examined move. It essentially prunes such nodes in the search tree.
4. Evaluated Min-Max algorithm for the same game tree and verified it with values obtained by our algorithm

Result Diagrams for different Branching Factor and Depth: