**CCA Assessment Write-Up:**

Time taken (s)

\*Both AIs pick exactly the same move when at the same Ply and therefore have the same win-loss ratios

**Conclusion:**

Both AIs make exactly the same moves at the same ply (when no randomness is added), however, the one with alpha-beta pruning implemented makes turns much faster, especially on larger plies (as more moves can be pruned.) This is because the alpha-beta AI simply does not calculate moves that it knows will not be chosen if both players play optimally. This leads to it having equal win-rates to that of the standard minimax AI, always winning when going first, and always losing when going second.

In a tournament, the obvious choice would be the alpha-beta AI due to its higher speed with no negative effect on performance. The optimal ply would probably be 3 or 4 as any higher gets so exponentially towards lengths of time that would probably not be allowed (the first turn with the Alpha-beta AI at 5 ply takes 13 seconds.)