# Report on Implementation of Intelligent Agent for Mancala Game

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* In this assignment I implemented Minimax algorithm with alpha beta pruning.
* Six Heuristics are used for evaluating utility function of terminal node or leaf nodes (when depth is limited).
* Moves are shuffled randomly before calling minimax function to child nodes.
* If there are multiple moves results same peak utility, then tie is broken by the following procedure:
  + - 1. Capture1 := maximum stone be captured by move1
      2. Capture2 := maximum stone be captured by move2
      3. If capture1 != capture2

Return move associated with maximum capture

* + - 1. If capture1 != 0

Return randomly from move1 and move2

* + - 1. If both move1 and move2 is bonus move

Return move with larger index

* + - 1. Else if any of move is bonus

Return move associated with bonus move

* + - 1. Else

Return move randomly from move1 and move2

* Iterative deepening search on Minimax algorithm can be used when computation time is limited for getting next move
* Performance of different heuristics is attached here

Table

Description automatically generated