Project -3 Writeup

Path: We took the Co-operative Path mode which will focus on gathering resources, so that here we'll know what we are competing against in the environment.

MinimaxAgent:

The function getNextMove will get game and checks the class of the game, if its 2D version or 3D version of the Tic-tac-toe game

Based on the Class we got, the getNextMove of that version is called to get the best move .for the current player in that particular environment.

For each possible open move on the game board, a move is simulated for the current player.

For each move, the method uses the miniMaxRecursiveAlgorithm3D or 2D's version function to evaluate how that move scores in further moves using the depth if the recursive depth reaches 3 or higher, it returns a score of 0

The move with the highest score, representing the best possible outcome for the current player, is selected as the best move.

Finally, getNextMove method finally returns the best move either from the 2D or 3D method to the caller.

AlphaBetaPriningAgent:

The function getNextMove will get game and checks the class of the game, if its 2D version or 3D version of the Tic-tac-toe game

Based on the Class we got, the getNextMove of that version is called to get the best move .for the current player in that particular environment.

For each possible open move on the game board, a move is simulated for the current player.

For each move, the method uses the AlphaBetaPruningAlgorithm3D or 2D's version function to evaluate how that move scores in further moves using the depth if the recursive depth reaches 3 or higher, it returns a score of 0. Here Minimax algorithm used in decision-making and Alpha Beta pruning method will be used to use to reduce the computation than using only MiniMax.

The difference are the alpha and beta updating based on the max and min of the current board evaluation value and the pruning by doing early stopping if the condition met.

The move with the highest score, representing the best possible outcome for the current player, is selected as the best move.

Finally, getNextMove method finally returns the best move either from the 2D or 3D method to the caller.