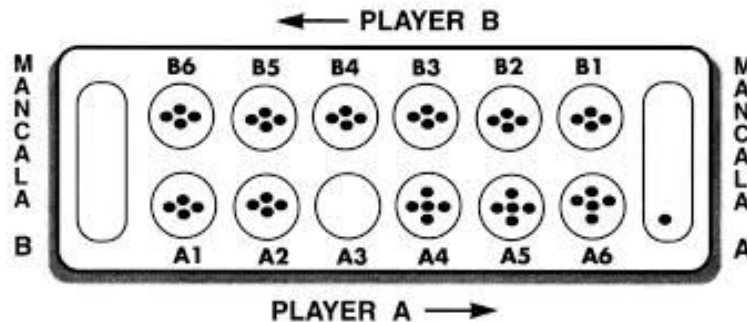


CSE-404: Task-3 (Group: B1)

Two Player Game: Mancala using Alpha-Beta Pruning

Two Player Game - Mancala



Before going into the details of the assignment please look at the rules here: https://www.scholastic.com/content/dam/teachers/blogs/alycia-zimmerman/migrated-files/mancala_rules.pdf.

And definitely play the game here: <https://www.mathplayground.com/mancala.html>

You have to implement this game using Alpha-beta pruning algorithm.

Pseudocode for Alpha-Beta Pruning

```
/**
returns the move/action of the agent from current state
*/
function ALPHA-BETA-SEARCH(state, depth)
    v <- MAX-VALUE(state, depth, -Inf, +Inf)
    return the move which results in value v

function MAX-VALUE(state, alpha, beta, depth) returns a utility value
    if state is terminal return Utility(state)
    if depth == 0 return Evaluate(state)
    v = -Inf
    for each possible action a possible from state do
        v = Max(v, MIN-VALUE(RESULTS(state,a),alpha, beta, depth-1))
        if v >= beta return v
        alpha = MAX(alpha, v)
    return v

function MIN-VALUE(state, alpha, beta, depth) returns a utility value
    if state is terminal return Utility(state)
    if depth == 0 return Evaluate(state)
    v = +Inf
    for each possible action a possible from state do
        v = MIN(v, MAX-VALUE(RESULTS(state,a),alpha, beta, depth-1))
        if v <= alpha return v
        beta = MIN(beta, v)
    return v
```