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**Why is improved Estimation function better than the one provided in handout?**

The improved estimation function is better than the estimation function provided in the handout.

For open game, the new estimation function used is (board.getNumberOfPieces(pType.*W*) + *getNoOfPotentialMills*(pType.*W*, board) - board.getNumberOfPieces(pType.*B*))

Similarly for mid-end game, we have

1000\*(noOfWhitePiece - noOfBlackPiece + noOfPotentialMills) - numBMoves

Here as we can see, along with the number of white pieces and number of black pieces present on the board, number of potential mills a white(winning) candidate can make with the move is also considered. As we know, higher the number of mills higher the pieces of opponents removed. Thus considering number of mills a candidate can make will have higher impact than the one without it.

**Sample test cases:**

MINIMAX GAME

i/p: WWxWWBBBBxxxBxxWxWxxxxx

o/p:

BoardPosition: WWXWWBBBBXXXBXWXXWXXXXX

Positions Evaluated: 138

MINIMAX estimate: 993

MINIMAX GAME BLACK

i/p: WWxWWBBBBxxxBxxWxWxxxxx

o/p:

BoardPosition: WWXWWBBBXBXXBXXWXWXXXXX

Positions Evaluated: 144

MINIMAX estimate: 985

MINIMAX GAME IMPROVED

i/p: WWxWWBBBBxxxBxxWxWxxxxx

o/p:

BoardPosition: WWXWWBBBBXXXBXWWXXXXXXX

Positions Evaluated: 138

MINIMAX estimate: 7994

AB GAME

i/p:WWxWWBBBBxxxBxxWxWxxxxx

o/p:

BoardPosition: WWXWWBBBBXXXBXWXXWXXXXX

Positions Evaluated: 38

MINIMAX estimate: 993

MINIMAX OPENING

i/p: BBxWWBWWBxxxBxxWxWxBxxx

o/p:

BoardPosition: XBXWWBWWBWXXBXXWXWXBXXX

Positions Evaluated: 536

MINIMAX estimate: 1

MINIMAX OPENING BLACK

i/p:BBxWWBWWBxxxBxxWxWxBxxW

o/p:

BoardPosition: BBXWWBWWBBXXBXXWXWXBXXW

Positions Evaluated: 508

MINIMAX estimate: 1

MINIMAX OPENING IMPROVED

i/p: BBxWWBWWBxxxBxxWxWxBxxx

o/p:

BoardPosition: BBXWWBWWXXXXBXWWXWXBXXX

Positions Evaluated: 536

MINIMAX estimate: 4

AB OPENING:

i/p:BBxWWBWWBxxxBxxWxWxBxxx

o/p:

BoardPosition: XBXWWBWWBWXXBXXWXWXBXXX

Positions Evaluated: 80

MINIMAX estimate: 1