# Assignment 4: Tracing 3 simple runs of your code

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Please submit these 2 pages together with your paper submission.  Remember even if you decide not to do part II of the assignment, you still have to implement the mentioned simple heuristic (that always returns 0 except that it returns a high value for a state where 1 wins, a low value for a state where 2 wins).

1. **Testing your code with MiniMax**: Trace your code on test cases 1 to 3 (provided in `testboards.pl`) using the MiniMax algorithm when using the depth bound 5, by doing the following:

    `testBoard1(St), mmeval(2,St,Val,BestMv,5,SeF)`

    this will bind SeF to the number of states searched, and BestMv to the computed move for board1. Repeat this for testBoard2 and testBoard3. Write down the results in the following table.

    | Test Boards | regular MiniMax | |
    |---|---|---|
    | | # Expanded Nodes | Applied Move [X,Y] |
    | Test Board 1 | 62285 | [0,1] |
    | Test Board 2 | 148642 | [0,4] |
    | Test Board 3 | 84129 | [0,4] |

2. **Testing alpha-beta prunning**: Trace your code on test cases 1 to 3 (provided in `testboards.pl`) using the alpha-beta algorithm when using the depth bound 5, by doing the following (assuming you have named alpha-beta predicate `abmmeval`):

    `testBoard1(St), abmmeval(2,St,Val,BestMv,5,SeF)`

    This will bind SeF to the number of states searched, and BestMv to the computed move for board1. Repeat this for testBoard2 and testBoard3. Write down the results in the following table.

    | Test Boards | $\alpha$-$\beta$ pruning | |
    |---|---|---|
    | | # Expanded Nodes | Applied Move [X,Y] |
    | Test Board 1 | | |
    | Test Board 2 | | |
    | Test Board 3 | | |

3. Write down one or two paragraphs comparing the results on the two tables.

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