REPORT

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Title: Program to suggest the next best move for player in Game Pichu
Accepts three arguments in command line 1. current player-b/w 2. State of board 3. time limit (in sec)

Assumption
1. Encoding of start state: R...K...RNBQKBNRPPPPPPPP.....pppppppprnbqkbnr

Abstraction
1. Initial state: As per given input
2. Final state: Next best move for player
3. Successor function: Find all possible moves for each piece on board in given input state
4. Set of states: Every possible position of every possible piece
5. Evaluation function: 200(K-K') + 9(Q-Q')+5(R-R')+3(B-B' + N-N')+1(P-P')+0.1(M-M') referred https://chessprogramming.wikispaces.com/Evaluation

Used min max algorithm with alpha beta pruning as the algorithm for solving this problem.
Approach:
1. For all types of pieces: P,Q,R,B,N,K(p,q,r,b,n,k) wrote functions which calculates all possible moves for that location of piece, considering if it is black's move or white's.
2. Created a function which takes the state as input and finds all possible moves for all the pieces in that state.
3. Applied min max algorithm with alpha beta pruning to increase performance.
4. To handle time, We first searched for depth=1 , then depth=2 and so on. As soon as time limit exceeds, program stops. The last entry is the best possible move in given time limit.