Chess Game

Description:

This is a source code for Chess Game (In text format without graphics). The program sets up a chess board using 8 by 8 character array. The horizontal axis of the board is represented by alphabets from **'a'** to **'h'** while the vertical axis is represented by numbers from **1** to **8**. This program allows the two players (Big/White and Small/Black) to make alternate moves, check for invalid entered positions, check for invalid moves, and detect special conditions such as Check, Checkmate, Stalemate, Castling, En-Passant, Pawn Promotion, etc from the state of the board. The game can be played in Classical, Rapid, or Blitz modes. The program has additional capabilities of saving and loading a game. Allowing a player to 'Resign' from the game. Allowing both players to 'Handshake'.

Features:

- **The game can be played in classical, rapid, or blitz modes:**

Classical ('untimed' mode): unlimited time given to both players. For a player to win in this case, they can either checkmate their opponent, or the opponent resigns. Stale mate is considered draw. A 'Handshake' is also a draw. Total times taken by the players are maintained (and displayed) nonetheless and the player with less overall time is said to have the 'Advantage' in case of a draw.

Rapid: total time of 10 minutes per player, with a 10 sec increment (extra time) after a move is made. For a player to win in this case, they can either checkmate their opponent, or the opponent resigns, or the opponent runs out of time before they do. Draws occur with stale mate and Handshake.

Blitz: Similar to Rapid, but total 5 minutes per player and no increments.

- **The program has additional capabilities of saving and loading a game:**

```
Do you want to Resume the last Game:

Press y: For Yes.
Press n: For No.
```

Press **'P'** to pause and save the game at any time.

```
For White Player: R = Rook, N = Knight, B = Bishop, Q = Queen, K = King, P = Pawn.
For Black Player: r = Rook, n = Knight, b = Bishop, q = Queen, k = King, p = Pawn.

Press p: To Pause and Save the Game.
Press s: For Handshake.
Press r: To Resign.

    a b c d e f g h
   _____
8   r n b q k b n r   8
7   p p p p p p p p   7
6   _ _ _ _ _ _ _ _   6
5   _ _ _ _ _ _ _ _   5
4   _ _ _ _ _ _ _ _   4
3   _ _ _ _ _ _ _ _   3
2   P P P P P P P P   2
1   R N B Q K B N R   1
   _____
    a b c d e f g h

Player Big/White Turn:

Enter the Position of Element you want to move (x,y): p
```

- **The program sets up a chess board, allows the two players to make alternate moves:**

```
For White Player: R = Rook, N = Knight, B = Bishop, Q = Queen, K = King, P = Pawn.
For Black Player: r = Rook, n = Knight, b = Bishop, q = Queen, k = King, p = Pawn.

Press p: To Pause and Save the Game.
Press s: For Handshake.
Press r: To Resign.

    a b c d e f g h
   _____
8   r n b q k b n r   8
7   p p p p p p p p   7
6   _ _ _ _ _ _ _ _   6
5   _ _ _ _ _ _ _ _   5
4   _ _ _ _ _ _ _ _   4
3   _ _ _ _ _ _ _ _   3
2   P P P P P P P P   2
1   R N B Q K B N R   1
   _____
    a b c d e f g h

Player Big/White Turn:

Enter the Position of Element you want to move (x,y):
```

The game starts with the Player Big/White turn. First enter the position of the element you want to move.

```
For White Player: R = Rook, N = Knight, B = Bishop, Q = Queen, K = King, P = Pawn.
For Black Player: r = Rook, n = Knight, b = Bishop, q = Queen, k = King, p = Pawn.

Press p: To Pause and Save the Game.
Press s: For Handshake.
Press r: To Resign.

    a b c d e f g h
    ----------------
8   r n b q k b n r   8
7   p p p p p p p p   7
6   - - - - - - - -   6
5   - - - - - - - -   5
4   - - - - - - - -   4
3   - - - - - - - -   3
2   P P P P P P P P   2
1   R N B Q K B N R   1
    ----------------
    a b c d e f g h

Player Big/White Turn:

Enter the Position of Element you want to move (x,y): a2
```

If the position is correct, then it will ask for the position where you want to move. Otherwise, it will again ask to enter the position of the element you want to move.

```
For White Player: R = Rook, N = Knight, B = Bishop, Q = Queen, K = King, P = Pawn.
For Black Player: r = Rook, n = Knight, b = Bishop, q = Queen, k = King, p = Pawn.

Press p: To Pause and Save the Game.
Press s: For Handshake.
Press r: To Resign.

    a b c d e f g h
    ----------------
8   r n b q k b n r   8
7   p p p p p p p p   7
6   - - - - - - - -   6
5   - - - - - - - -   5
4   - - - - - - - -   4
3   - - - - - - - -   3
2   P P P P P P P P   2
1   R N B Q K B N R   1
    ----------------
    a b c d e f g h

Player Big/White Turn:

Enter the Position of Element you want to move (x,y): a3
INVALID POSITION, Try again.
Enter the Position of Element you want to move (x,y): |
```

```
For White Player: R = Rook, N = Knight, B = Bishop, Q = Queen, K = King, P = Pawn.
For Black Player: r = Rook, n = Knight, b = Bishop, q = Queen, k = King, p = Pawn.

Press p: To Pause and Save the Game.
Press s: For Handshake.
Press r: To Resign.

    a b c d e f g h
    ----------------
8   r n b q k b n r   8
7   p p p p p p p p   7
6   - - - - - - - -   6
5   - - - - - - - -   5
4   - - - - - - - -   4
3   - - - - - - - -   3
2   P P P P P P P P   2
1   R N B Q K B N R   1
    ----------------
    a b c d e f g h

Player Big/White Turn:

Enter the Position of Element you want to move (x,y): a2
Enter the Position you want to move (x,y): a4
```

```
For White Player: R = Rook, N = Knight, B = Bishop, Q = Queen, K = King, P = Pawn.
For Black Player: r = Rook, n = Knight, b = Bishop, q = Queen, k = King, p = Pawn.

Press p: To Pause and Save the Game.
Press s: For Handshake.
Press r: To Resign.

    a b c d e f g h
    ----------------
8   r n b q k b n r   8
7   p p p p p p p p   7
6   _ _ _ _ _ _ _ _   6
5   _ _ _ _ _ _ _ _   5
4   P _ _ _ _ _ _ _   4
3   _ _ _ _ _ _ _ _   3
2   _ P P P P P P P   2
1   R N B Q K B N R   1
    ----------------
    a b c d e f g h


Player Small/Black Turn:

Enter the Position of Element you want to move (x,y): |
```

- **Detects special conditions such as check, checkmate, stalemate, castling, En passant, pawn promotion, etc from the state of the board:**

```
For White Player: R = Rook, N = Knight, B = Bishop, Q = Queen, K = King, P = Pawn.
For Black Player: r = Rook, n = Knight, b = Bishop, q = Queen, k = King, p = Pawn.

Press p: To Pause and Save the Game.
Press s: For Handshake.
Press r: To Resign.

    a b c d e f g h
    ----------------
8   r n b _ k b n r   8
7   p p p p _ p p p   7
6   _ _ _ _ _ _ _ _   6
5   _ _ _ _ p _ _ _   5
4   _ _ _ _ _ _ P q   4
3   _ _ _ _ _ P _ _   3
2   P P P P P _ _ P   2
1   R N B Q K B N R   1
    ----------------
    a b c d e f g h

It's a CheckMate!
The Game is over, Player Small/Black Won!

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ed with code 1.
Press any key to close this window . . .|
```

- **Allowing a player to 'Resign' from the game. Allowing both players to 'Handshake':**

```
For White Player: R = Rook, N = Knight, B = Bishop, Q = Queen, K = King, P = Pawn.
For Black Player: r = Rook, n = Knight, b = Bishop, q = Queen, k = King, p = Pawn.

Press p: To Pause and Save the Game.
Press s: For Handshake.
Press r: To Resign.

    a b c d e f g h
    ----------------
8   r n b q k b n r   8
7   P P P P _ p p p   7
6   _ _ _ _ p _ _ _   6
5   _ _ _ _ _ _ _ _   5
4   P _ _ _ _ _ _ _   4
3   _ _ _ _ _ _ _ _   3
2   _ P P P P P P P   2
1   R N B Q K B N R   1
    ----------------
    a b c d e f g h


Player Big/White Turn:

Enter the Position of Element you want to move (x,y): s

Player Small/Black Turn:
Press y: For Handshake.
y
The Game is Draw!
White player took more time (202 seconds) than Black player (27 seconds) overall.

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Press any key to close this window . . .
```

```
For White Player: R = Rook, N = Knight, B = Bishop, Q = Queen, K = King, P = Pawn.
For Black Player: r = Rook, n = Knight, b = Bishop, q = Queen, k = King, p = Pawn.

Press p: To Pause and Save the Game.
Press s: For Handshake.
Press r: To Resign.

    a b c d e f g h
    ----------------
8   r n b q k b n r   8
7   p p p p p p p p   7
6   _ _ _ _ _ _ _ _   6
5   _ _ _ _ _ _ _ _   5
4   _ _ _ _ _ _ _ _   4
3   _ _ _ _ _ _ _ _   3
2   P P P P P P P P   2
1   R N B Q K B N R   1
    ----------------
    a b c d e f g h

Player Big/White Turn:

Enter the Position of Element you want to move (x,y): r
The Game is over, Player Small/Black Won!

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Press any key to close this window . . .
```