Introduction and Goal of Time Chess

Time chess uses a standard board and the standard starting positions, however you may want to gather as many additional pieces as you can.

In its simplest form: Time Chess is regular-styled chess with a key difference: pieces can travel through time. In a single move, a player can make a move on the standard x and y axis, or they can choose to move through a z-axis representing time.

Since time chess is only played on a single chess board, the piece will disappear from play and reappear somewhere else on the board, a specified number of turns later.
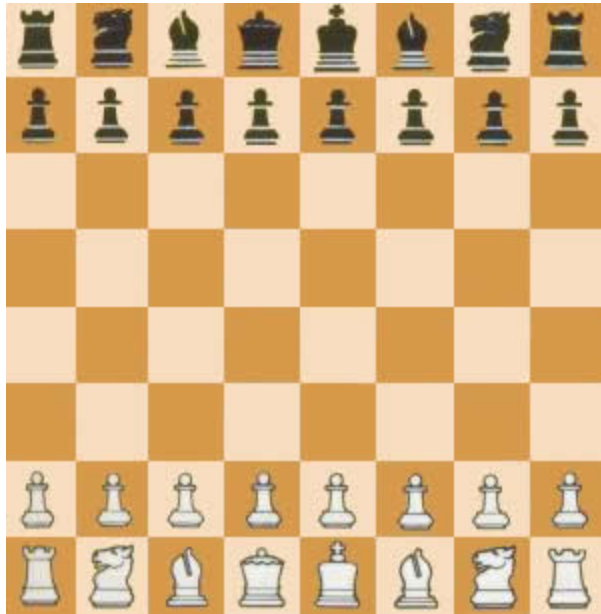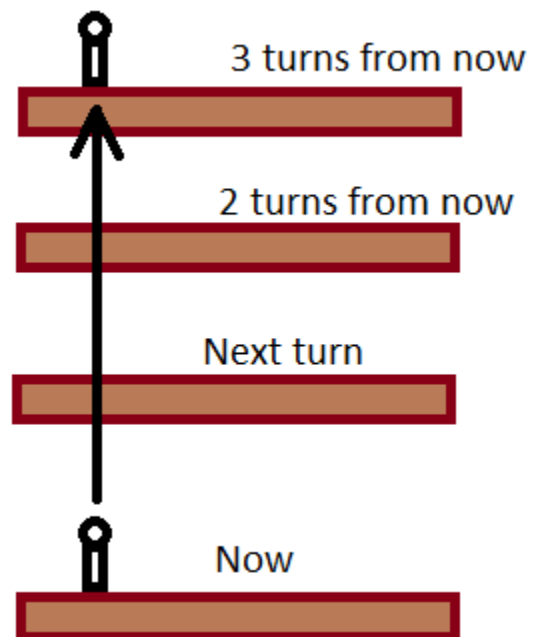
There are two goals in time chess: checkmate your opponent's king as per standard chess rules or force your opponent into a time paradox.

A time paradox occurs when a piece moves through time, but performs some action that would be illegal to standard chess rules. For example: if a King were to move one turn into the future, and your opponent was to move a piece such that when your king appears back onto the board it will be in check, you have committed a time paradox because a king cannot move himself into check. At this point, you would lose the game.

Taking a Turn and Moving Through Time

As a summary, here is a brief finite automata describing what you can do during your turn:
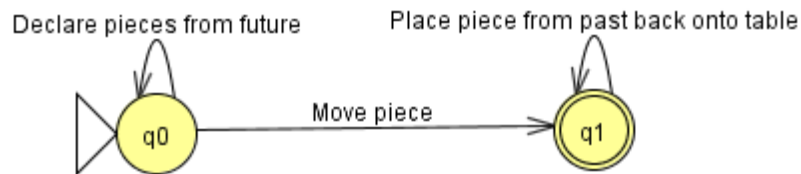
Move Piece

During this phase of your turn, you may move your piece normally, as per standard chess rules, or you can move your piece through time.

Moving a Piece Through Time

A good way of visualizing the kinds of moves you can make is to extend the board in three dimensions, which each z dimension space, or "up," representing a single turn in the future. Thus, any piece that can move straight forward can also travel forward through time, by moving straight "up." This piece would disappear from the board for the same number turns as you have moved spaces "up." After those turns have elapsed, you would place the piece back onto the table during the "Place Piece from past back onto table" part of your turn, as described above.
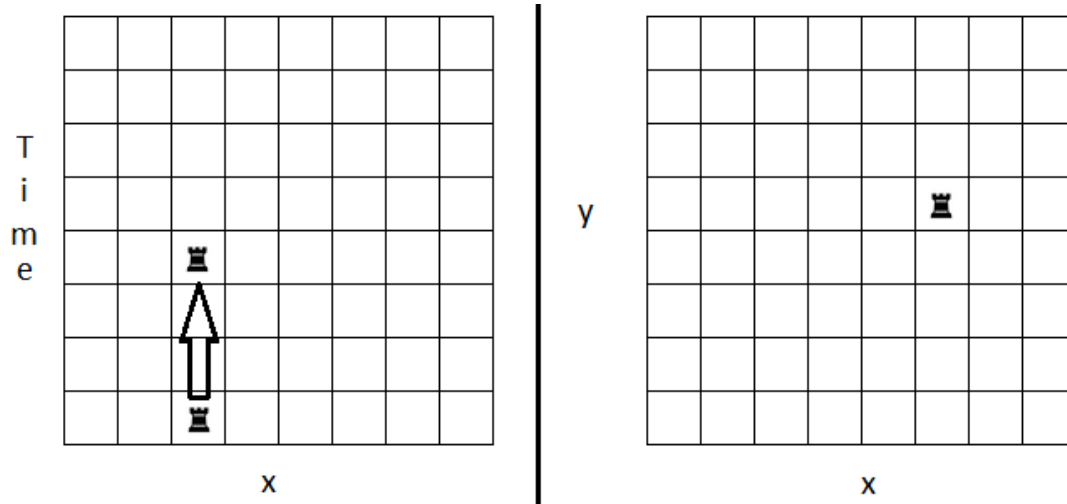

In this picture, a rook advances three turns into the future. The left side of this picture is a visual representation of the piece 'travelling' through time. On the actual board, the piece wouldn't move at all. You would declare that the piece is moving three turns into the future, take the piece off the board, and play would continue normally until three turns later when the piece is returned to the same spot that it was taken off of.

Since the chessboard is of limited size and the maximum number of squares a piece can move on the x/y plane is limited by that size, the maximum number of turns into the future a piece can move is 7[1].

Pieces that can move diagonally have a bit of a caveat to them. Notice that in order for a piece

to move diagonally through time, it has to move some number of squares on the x/y plane, as well as through time. This is represented by having the piece disappear normally, but then appear some number of spaces away from the square that it disappeared on equalling the number of turns into the future the piece has moved.

T
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y

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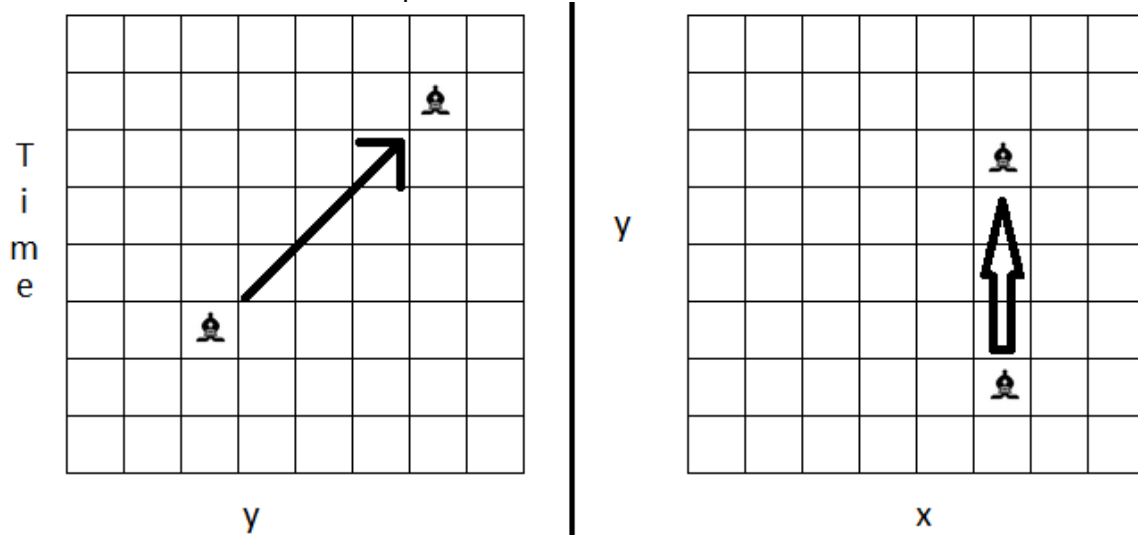
In this picture, a bishop moves diagonally through time. In gameplay terms, the bishop would disappear from the board and the player would declare that he is moving 4 turns into the future. After 4 turns have elapsed, the bishop would be placed 4 squares away from the initial position he took the bishop off of.

Notice that a piece moving diagonally through time can only move horizontally or vertically on the game board (x,y axis). Since a diagonal move can be considered an equal amount of x and y moves, a player may substitute either the x moves or the y moves for z moves. It would be unfair to be able to move through all three planes at the same time[2].

Capturing through time

If a piece comes back into play and an opponent's piece is currently on the tile that your piece is supposed to occupy, it counts as a standard capture. If one of your own pieces captures another one of your own pieces through this method, it creates a time paradox since you are not allowed to capture your own pieces[3].

Pawns

Pawns are of interesting note because they may only capture if they move diagonally. In Time Chess, this rule also applies when moving through time. This allows pawns to capture pieces directly in front of them, but be warned: Pawns may only move diagonally if they capture a piece. If the pawn completes its move diagonally through time and does not capture a piece, it has created a time paradox.

Temporal Check

Since it is possible to move and capture pieces through time, it should also be possible to put the King into check through time. When this happens, the game changes state into 'temporal check.' While under temporal check, a player adheres to standard check rules with one key difference. If it turns out that the player is in 'temporal checkmate' i.e. when the piece

moving through time arrives at its square the game is in a state of checkmate, the game is not necessarily over. A player under temporal checkmate may opt to wait his turn and move none of his pieces. This forces his opponent to make moves, even if they are trivial 'back-and-forth' moves.

A player may also break temporal check by moving his King through time. Be warned that if the King, upon re-entering the board, ends up in check a time paradox will be created. This is because a King cannot move himself into check.

It should also be noted that pieces cannot capture a King. So, if a piece travelling through time lands on a square occupied by a king it causes a time paradox.
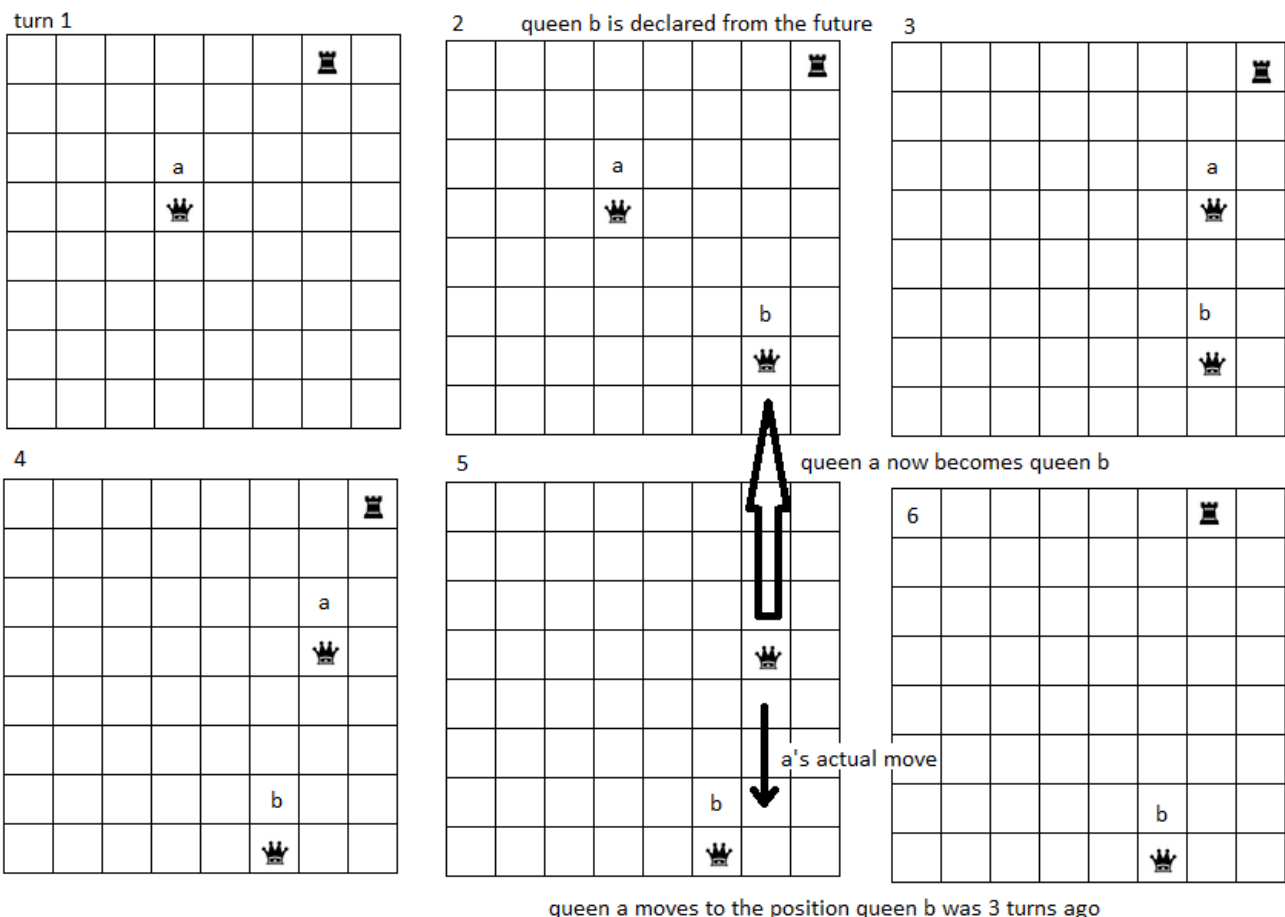
Declare pieces from future

A slightly complicated and often daring move in Time Chess involves how pieces can move into the past.

It does not make sense to simply let players move pieces into the past without any additional preparation because these pieces could not be accounted for in the turns you have already taken without re-taking the turns. A game based around this notion of travelling into the past would be annoying[4].

To solve this while still allowing pieces to move into the past, the player must first declare that a specific piece is moving from the future into the present. This may occur arbitrarily during a player's turn, but before he has made a move. When this occurs, a copy of the piece being declared from the future is placed onto the board in any position the player likes. It is now the original piece's job to move itself in such a way so that it can successfully move into the past when the copy was declared. If the piece fails to make the move, perhaps because the original was captured before it could travel into the past and become the copy, then a time paradox is created and the player who failed to return their piece to the past loses. It should be noted that this means all moves into the past must be to the moment when a player declared a piece is coming from the future.

An example of declaring a piece from the future and successfully replacing it in the time continuum is diagrammed below:

turn 1

2   queen b is declared from the future   3

queen a now becomes queen b

4

5

a's actual move

6

queen a moves to the position queen b was 3 turns ago

During turn 1, the player makes a move using his rook. During his next turn, but before making another move he declares that a queen shall come from the future onto an arbitrary spot on the board. To help us keep track of the two queens on the board, the newly declared queen is now known as queen b and the original queen is now known as queen a. After two more moves, the player decides that it is time to move his queen back into the past, and his queen makes a single move into the past, completing the opening in the time continuum. If at any point between turns 2-5 the white player was able to capture queen a, a time paradox would be created since queen a would no longer be able to go back into the past and become the queen b from the future.

Tips, Tricks, & Strategies

- If you are playing Time Chess with a physical chessboard and pieces, get a pencil and some paper and keep track of the moves both players make on it. This game can become very taxing on the brain attempting to keep track of multiple pieces in the time continuum and where they should be and need to be in order to prevent paradoxes.
- While there is a strict limit on how many moves into the future you can make (1 per turn), there is much looser limit on how many pieces you can recall or declare from the future (the number of empty tiles on the board). While it is certainly an intimidating move to instantly fill the board with queens, do remember that your opponent need only capture a maximum of 2 of the queens in order to cause a time paradox. It's also impossible to return such an absurd number of queens to their post positions unless variation 1, described below, is put into effect. The greatest number of pieces you can put down

while still being able to return them all to the past is 7, although this move is not in your best favor since your next 7 turns will be spent making sure that all the pieces can be returned to the past and if any one of them, except the 'last' one, is captured or cannot make it to their position in the past in a single move, it causes a time paradox.
- While your opponent is in temporal check, it is always safe for your pieces to time travel. Just be sure that your opponent is still in temporal check when that piece is due to return to the board.
- Don't immediately move your King through time in order to escape a temporal check or checkmate. If you can wait a few turns to see if your opponent will move his pieces into a more favorable position, you should do so.

Variations

Passive-Aggressive Time Chess: In this variation of time chess, a time paradox does not create a winner and a loser. When a time paradox occurs, both players lose. This allows players using time-based moves to get away with otherwise suicidal moves because both players want to maintain a possibility of a win condition for themselves. However, once a player feels it is impossible for them to win, they may attempt to create a time paradox in order to insure that the other player goes down with them. If you ever wanted to play chess while under the influence of the Prisoner's Dilemma, this is an interesting variation to play by.

	Player 1 plays normally	Player 1 attempts time paradox
Player 2 plays normally	Normal game of chess, assuming equal skill level 50% chance of winning for both players	Player 1 wins, because Player 2 avoids creating time paradoxes giving Player 1 the edge
Player 2 attempts time paradox	Player 2 wins, because Player 1 avoids creating time paradoxes giving Player 2 the edge	Time paradox achieved, both players lose.

[1]   Since time should extend into infinite in both z directions, an interesting variation is to instead of declaring how many turns into the future or past a piece moves, simply stating that a piece has moved "into the future" an arbitrary number of turns. It is up to the player to decide when that piece comes back, which can make for some interesting 'traps' and other tactical decisions. It should be noted that when the game ends there are no more turns. If you have arbitrarily sent a piece into the future and have not recalled it back onto the board by the time the game ends, you have committed a time paradox because no more turns may come to pass. Even if the game is supposed to end in a victory for you by some other means, you will have lost because of the time paradox. Under this variation, if enough pieces are sent arbitrarily into the future by one player, it could be possible for the other player to win by purposefully trying to lose. If the first player is quick to place the second player into checkmate without first recalling his pieces

[2]   If for some reason you feel the queen is underpowered, allow the queen to make diagonal moves while also moving through time. This makes moving the queen a bit simpler, as

it allows the queen to move normally while disappearing from the board the same number of turns as the number of squares she has moved. This also sets a more interesting and more intuitive hierarchy when it comes to how pieces move through time:

- Rooks only move in straight lines

Rooks can only move through time OR through space, but not both.

- Bishops only move in diagonal lines

Bishops may only move diagonally on the x/y plane OR through time AND space, but they cannot move only through time.

- The Queen can move in both straight and diagonal lines

The Queen, under this variation, may move "freely" through time and space. She can make any standard chess move a queen can make while also moving the same number of turns through time, albeit breaking the original dimensionality.

Note that when moving through time and space, one must move the same number of spaces through time as they did through space. While a Queen may move diagonally and move through time, she cannot move 2 spaces into the future while moving 3 spaces on the board.

[3]   If you like to add a factor of chance into your chess game and have a spare 8-sided die lying around, the rules could be modified to say when you capture your own piece, roll the 8-sided die and move the 'captured' piece onto the corresponding tile on the bottom-left diagram. This variation allows for some interesting 'behind enemy lines' moments where pieces (typically knights) attempt to stand next to as many other pieces as possible without being captured, and then wait for 'reinforcements' to push them onto another piece in order to capture it.

1	2	3
4	♞	5
6	7	8

♟	2	3
4	♞	♙
6	7	8

♙	2	3
4	♝	♞
6	7	8

Starting with the above-right middle, a black bishop moves to capture the knight and the 8-sided die landed on 5, the above-right diagram would be the result, with the white pawn that was in that square being captured by the knight.

Notice that when the variation is used, the game is no longer 'solvable.' While the rest of the rules are put into place to create a balanced game with closed loops, this one introduces a random element into the mix, and thus ruins any attempts at solvability.

[4]   Annoying, but not impossible. If you are keeping good track of your moves on a turn by turn basis, it would be easy to declare a piece be moved into the past at any time during play.

You could then place all the pieces back in the positions they were in during that turn and resume play. However, this can be annoying because a player may simply declare that his piece travels back to the first turn of the game, effectively restarting the game itself.