TEXmate 2: User's manual

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Contents

1 Introduction

Since the appearance last year of TEXmate in its first version, the LATEX-chess community has been very active. Now there are new versions of Torben Hoffmann's **skak** and of its fonts. There are new packages of immense scope and utility: Ulrike Fischer's **chessfss** and **chessboard**.

To an important degree, all these efforts have grown together. And TEXmate now incorporates the chess-playing capabilities of **skak**, somewhat achieving what back in the day was a dream of having the best of both worlds, a dream that arose from the enthusiastic reception of the first TEXmate. Now TEXmate uses **skak** to follow the game, helping to catch input mistakes, and, above all, drawing the diagram of the current position automatically. In addition, font handling is completely delegated to **chessfss**, and for now all packages appear to be satisfactorily compatible.

My thanks then to Ulrike and Torben, but also Ulrich Dirr, for their constant interest and feedback. I am indebted for the final encouragement to Frank Mittelbach as well.

Future plans include a PGN-to-TEX translator. As for TEXmate, it's probably too early to know where it's going, but one thing seems clear: TEXmate might interfere with other complicated packages. The problem lies in the change of category codes for some characters. This is certainly something to look into. (Quick and dirty try, though: modify `\@nochesscodes` according to the other packages you are loading. . .)

2 Basic usage

2.1 A short game

```
|1 e4 e5 Nf3 Nc6 Bc4 Bc5 0-0 d6 d3 Nf6 Bg5
h6 Bh4 g5 Bg3 h5 Nxg5 h4 Nxf7 hxg3
Nxd8 Bg4 Qe1 Nd4 Nc3 Nf3+ gxf3 Bxf3|
```

This input stream gives TEXmate the moves of a beautiful miniature (probably home-prepared, though) by Steinitz.

The only two conventions are the inclusion of all moves between two |'s ("chess mode"), and the separation of moves by spaces. Beyond that, the user is free to add punctuation marks, as inconsistently as he wants, and TEXmate will always produce the same output. (In particular, PGN move notation is supported without any change.)

In normal conditions, the | is set by default to delimit chess mode. The user commands \makebarother and \makebarchesstoggle the meaning of that character between chess mode and nothing special.

\makebarchess
\makebarother

However, if TEXmate finds that another package has a special use for |, it will refrain from using it. In that case, chess mode should be entered with through an alternative (which is always available, in any case): the texmate environment (\begin{texmate}–\end{texmate}). Even then, a \makebarchess (by the user) will make | open and close chess mode.

With default settings, the result of the quoted input is:

1. e4 e5 2. ♘f3 ♘c6 3. ♗c4 ♗c5 4. d3 ♘f6 5. ♗g5 d6 6. 0–0 h6 7. ♗h4 g5 8. ♗g3 h5 9. ♘×g5 h4 10. ♘×f7 h×g3 11. ♘×d8 ♗g4 12. ♕e1 ♘d4 13. ♘c3 ♘f3+ 14. g×f3 ♗×f3

And White cannot avoid being mated.

2.2 Game title

The game was played between Dubois and Steinitz in London in 1862. So:

```
\whitename{Dubois}
\blackname{Steinitz}
\chessevent{London 1862}
```

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```
\ECO{C50}
\chessopening{Giucco Pianissimo}
```

\welo   (\chessevent is a safer command name than 'place,' and for games
\belo   of chess, they are usually interchangeable.) All these commands are
         not required, and there are two more: \welo and \belo for ratings or
         other information about the players.

\makegametitle   Now, before the game is input, we can issue \makegametitle. If in
\resigns   addition we type \resigns when its White's turn (so the game input
         is |1 e4 e5 Nf3...Bxf3 \resigns|), the result is:

☐ **Dubois**	London 1862
■ **Steinitz**	Giucco Pianissimo – **C50**

**1. e4 e5 2. ♘f3 ♘c6 3. ♗c4 ♗c5 4. d3 ♘f6 5. ♗g5 d6 6. 0–0
h6 7. ♗h4 g5 8. ♗g3 h5 9. ♘×g5 h4 10. ♘×f7 h×g3 11. ♘×d8
♗g4 12. ♕e1 ♘d4 13. ♘c3 ♘f3 14. g×f3 ♗×f3   0 : 1**

\newgame \makegametitle includes the all-important command \newgame, that
         sets the stage for TEXmate (and skak) to start a game afresh. It is the
         safest way to start from scratch (for example, for quoting a related
         game in commentary) if there is no interest in the game title as defined
         in TEXmate. (See also sections 3.6 and 4.)

2.3 Basic Annotations

Here we will add more things:

Symbols after the moves: !, ?, etc. These pose no complication at
     all—TEXmate treats them as part of moves, just as if they were
     letters. The same applies to chess symbols like \betteris, or
     \onlymove.

\threat **Simple threats** with the command \threat<⟨*threat*⟩>. TEXmate
     inserts the symbol △ and typesets the ⟨*threat*⟩ without regard
     to move numbers, etc.

[**Variations** with the 'commentary' markers [and].

```
|1 e4 e5 Nf3 Nc6 Bc4 Bc5 d3 Nf6 Bg5?! [Nc3]
d6 O-O?! h6 Bh4 g5 Bg3 h5! Nxg5 h4! Nxf7 hxg3!!
Nxd8 [Nxh8 Qe7! \threat<Qh7> Nf7 Bxf2+ Rxf2
gxf2+ Kxf2 Ng4+ Kg3 Qf6 Qf3 Qg7\BBetter] Bg4
Qe1 Nd4 Nc3\onlymove [h3 Ne2+ Kh1 Rxh3+ gxh3
Bf3\#] Nf3+! gxf3 Bxf3 \resigns|
```

| □ **Dubois**	London 1862
■ **Steinitz**	Giucco Pianissimo – **C50**

1. e4 e5 2. ♘f3 ♘c6 3. ♗c4 ♗c5 4. d3 ♘f6 5. ♗g5?! [5. ♘c3]
**5. . . d6 6. 0–0?! h6 7. ♗h4 g5 8. ♗g3 h5! 9. ♘×g5 h4! 10. ♘×f7
h×g3!! 11. ♘×d8** [11. ♘×h8 ♕e7! △♕h7 12. ♘f7 ♗×f2+ 13. ♖×f2
g×f2+ 14. ♔×f2 ♘g4+ 15. ♔g3 ♕f6 16. ♕f3 ♕g7−+] **11. . . ♗g4
12. ♕e1 ♘d4 13. ♘c3□** [13. h3 ♘e2+ 14. ♔h1 ♖×h3+ 15. g×h3
♗f3#] **13. . . ♘f3+! 14. g×f3 ♗×f3**   **0 : 1**

2.4   Diagrams

TeXmate 2 makes use of the chess engine of the package skak to 'follow'
the game as it is input, so that it can, at any point, insert a diagram
with the current position. This can be done simply by skak's command
\showboard. At this very moment, the final position of the game is
in memory, so, in a paragraph by itself, the command will produce:
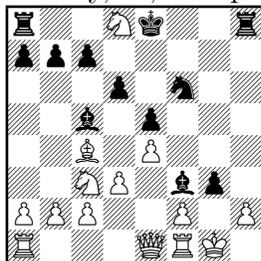
All skak commands apply. For example, \showonlypanws\showboard
produces:
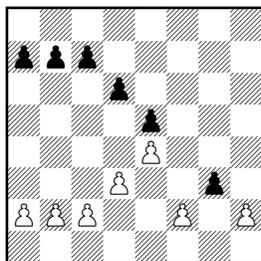
\toD   TEXmate provides tools for the handling of diagrams. \toD (meaning something like "refer to Diagram") inserts '*(D)*' in the chess text, \makediagrams and saves the position in memory. Many positions (by default 3, but extendable) can be held in memory, and they are actually typeset by the command \makediagrams.

\toD has an argument: the last move. TEXmate will typeset the last move and put it (by default) below the diagram. Note that it will *not* typeset the move directly in the running chess text (thus the move can be different in running text—where it can have annotation symbols—and in the diagram).

Adding this to the game, the complete input is:

```
\whitename{Dubois}
\blackname{Steinitz}
\chessevent{London 1862}
\ECO{C50}
\chessopening{Giucco Pianissimo}

\makegametitle
|1 e4 e5 Nf3 Nc6 Bc4 Bc5 d3 Nf6 Bg5?! [Nc3]
d6 O-O?! h6 Bh4 g5 Bg3 h5! Nxg5 h4! Nxf7 hxg3!!
\toD{hxg3!!} Nxd8 [Nxh8 Qe7! \threat<Qh7> Nf7 Bxf2+
Rxf2 gxf2+ Kxf2 Ng4+ Kg3 Qf6 Qf3 Qg7\BBetter] Bg4
Qe1 Nd4 Nc3\onlymove [h3 Ne2+ Kh1 Rxh3+ gxh3
Bf3\#] Nf3+! gxf3 Bxf3 \toD{Bxf3} \resigns|

\begin{figure}[h]
\makediagrams
\end{figure}
```
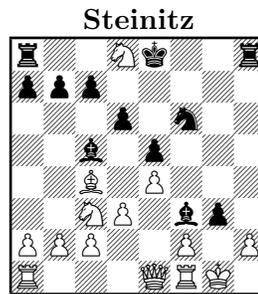
And the complete output is:

Steinitz

Dubois

10. . . h×g3!!

Steinitz

Dubois

14. . . ♝×f3

☐ **Dubois**	London 1862
■ **Steinitz**	Giucco Pianissimo – **C50**

---

1. e4 e5 2. ♘f3 ♘c6 3. ♗c4 ♗c5 4. d3 ♘f6 5. ♗g5?! [5. ♘c3] **5. . . d6 6. 0–0?! h6 7. ♗h4 g5 8. ♗g3 h5! 9. ♘×g5 h4! 10. ♘×f7 h×g3!!** (D) **11. ♘×d8** [11. ♘×h8 ♛e7! △♛h7 12. ♘f7 ♗×f2+ 13. ♖×f2 g×f2+ 14. ♚×f2 ♘g4+ 15. ♚g3 ♛f6 16. ♛f3 ♛g7−+] **11. . . ♗g4 12. ♛e1 ♘d4 13. ♘c3☐** [13. h3 ♘e2+ 14. ♚h1 ♖×h3+ 15. g×h3♗f3#] **13. . . ♘f3+! 14. g×f3 ♗×f3** (D) **0 : 1**

This will insert the diagrams at a reasonable (in LATEX-insertion scales) place. The appearance of the diagrams can be customized to some extent, as treated in section 3.5. \makediagrams will center the diagrams automatically, so \begin{center} is not necessary.

\toD*   On the other hand, the starred \toD*⟨last move⟩ will not insert "(D)", but will otherwise do the same as \toD.

\preparediagram   There is an alternative way of preparing a diagram for typesetting:

\preparediagram{⟨diagram header⟩}{⟨diagram footer⟩}

sends the current position into diagram cache, not with the usual header and footer (which by default are the players' names and the last move, as explained in section 3.5), but with those set directly by the user. This can be done at any point, but it is useful particularly in connection with \position (section 2.10).

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2.5 Text and chess

Regular, running text can be inserted at any point into a game, by simply exiting chess mode and entering it before the game resumes.

```
\whitename{Dubois}
\blackname{Steinitz}
\chessevent{London 1862}
\ECO{C50}
\chessopening{Giucco Pianissimo}

\makegametitle
|1 e4 e5 Nf3 Nc6 Bc4 Bc5 d3 Nf6 Bg5?! [Nc3]
d6 O-O?!| Black has not yet castled, so he can storm with the
Kingside pawns, taking advantage of the aggressive but
unfortunate position of White's bishop. |h6 Bh4 g5 Bg3 h5!
Nxg5 h4! Nxf7 hxg3!! Nxd8 [Nxh8 Qe7! \threat<Qh7> Nf7 Bxf2+
Rxf2 gxf2+ Kxf2 Ng4+ Kg3 Qf6 Qf3 Qg7\BBetter] Bg4 Qe1 Nd4
Nc3\onlymove [h3 Ne2+ Kh1 Rxh3+ gxh3 Bf3\#] Nf3+! gxf3
Bxf3\resigns|
```

☐ **Dubois**   London 1862
■ **Steinitz**   Giucco Pianissimo – **C50**

1. e4 e5 2. ♘f3 ♘c6 3. ♗c4 ♗c5 4. d3 ♘f6 5. ♗g5?! [5. ♘c3] **5. . . d6 6. 0–0?!** Black has not yet castled, so he can storm with the Kingside pawns, taking advantage of the aggressive but unfortunate position of White's bishop. **6. . . h6 7. ♗h4 g5 8. ♗g3 h5! 9. ♘×g5 h4! 10. ♘×f7 h×g3!! 11. ♘×d8** [11. ♘×h8 ♛e7! △♛h7 12. ♘f7 ♗×f2+ 13. ♖×f2 g×f2+ 14. ♚×f2 ♘g4+ 15. ♚g3 ♛f6 16. ♛f3 ♛g7−+] **11. . . ♗g4 12. ♛e1 ♘d4 13. ♘c3**□ [13. h3 ♘e2+ 14. ♚h1 ♖×h3+ 15. g×h3 ♗f3#] **13. . . ♘f3+! 14. g×f3 ♗×f3**   **0 : 1**

2.6 Text and annotation

When text and annotation (chess variations that are not the main line of the game) are used at the same time, the symbol '[', inserted by default for variations, can be redundant. We don't want something like "**5. ♗g5?!** [The development of the Knight with 5. ♘c3 is more

urgent.] **5. . . d6**." But exiting and re-entering chess mode is not enough, for TEXmate needs to know that this is a variation (otherwise it will typeset |Nc3| as belonging to the game, and skak will try to update the board and get confused).

The solution is to open the annotation not with the commentary \\[character, but with the commentary *control sequence*: \\[. Thus:

```
|e4 e5 Nf3 Nc5 Bc4 Bc5 d3 Nf5 Bg5?! \[| The
development of the Knight with |Nc3| is more
urgent. |\] d6...|
```

which produces:

1. e4 e5 2. ♘f3 ♘c5 3. ♗c4 ♗c5 4. d3 ♘f5 5. ♗g5?! The development of the Knight with 5. ♘c3 is more urgent. **5. . . d6**. . .

2.7   Variations and subvariations

Variations and subvariations, marked by either [⟨*variation*⟩] or \\[⟨*variation*⟩\\], can be nested (however, [should always be closed by], and \\[by \\]). TEXmate has four levels of variation (the first being the main game itself), each with its own conventions of font, signs, etc.

So, for example, here is a deeper annotation to White's move 11, achieved by nesting variations (the relevant input is "Nxd8 [Nxh8 Qe7! [Bg4? Qd2 Nd4 Nc3 Qe7 Qh6\\WBetter] Nf7 Bxf2+ Rxf2 gxf2+ Kxf2 Ng4+ Kg3 Qf6 Qf3 Qg7\\BBetter] Bg4"):

| □ **Dubois** | London 1862 |
| ■ **Steinitz** | Giucco Pianissimo – **C50** |

---

1. e4 e5 2. ♘f3 ♘c6 3. ♗c4 ♗c5 4. d3 ♘f6 5. ♗g5?! [△5. ♘c3] **5. . . d6 6. 0–0?! h6 7. ♗h4 g5 8. ♗g3 h5! 9. ♘×g5 h4! 10. ♘×f7 h×g3!! 11. ♘×d8** [11. ♘×h8 ♛e7! (11. . . ♗g4? 12. ♛d2 ♘d4 13. ♘c3 ♛e7 14. ♛h6+−) 12. ♘f7 ♗×f2+ 13. ♖×f2 g×f2+ 14. ♔×f2 ♘g4+ 15. ♔g3 ♛f6 16. ♛f3 ♛g7−+] **11. . . ♗g4 12. ♛e1 ♘d4 13. ♘c3□** [13. h3 ♘e2+ 14. ♔h1 ♖×h3+ 15. g×h3 ♗f3#] **13. . . ♘f3+! 14. g×f3 ♗×f3** **0 : 1**

2.8 Other tools for annotation

When you open a commentary (whether by [or by \[), TEXmate 'undoes' the last move (assuming that the commentary will offer alternatives to it). Therefore the first move in the commentary will feature the same move number, and be played by the same side, that the last move in the main game (or in the mother variation). Sometimes, however, you open a commentary to talk about what the answer can be to that last move. For those occassions, TEXmate 2 has the command \ahead.

\ahead

A good illustration is the last move of our Dubois–Steinitz game (see diagram).

Steinitz

Dubois

14... ♗xf3
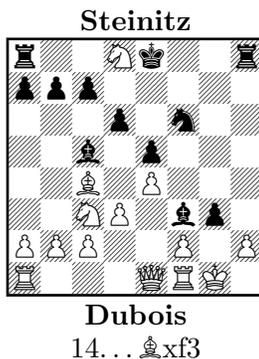
The point is that Black threatens mate with the g3 pawn on h2; White could try to avoid it by taking the pawn, but then the rook mates on h1. What we want for the last move is '♗×**f3** △g×h2#', and if now 15. h×g3 ♖h1#'. I just typed it manually, but because I know the move numbers, etc. The \ahead mechanism provides automation:

```
|... Bxf3 \threat<gxh2\#>\[|, and if now
|\ahead hxg3 Rh1\#\]\resigns|
```

1. e4 e5 2. ♘f3 ♘c6 3. ♗c4 ♗c5 4. d3 ♘f6 5. ♗g5?! [△5. ♘c3] **5... d6 6. 0–0?! h6 7. ♗h4 g5 8. ♗g3 h5! 9. ♘×g5 h4! 10. ♘×f7 h×g3!! 11. ♘×d8** [11. ♘×h8 ♕e7! (11... ♗g4? 12. ♕d2 ♘d4 13. ♘c3 ♕e7 14. ♕h6+−) 12. ♘f7 ♗×f2+ 13. ♖×f2 g×f2+ 14. ♔×f2 ♘g4+ 15. ♔g3 ♕f6 16. ♕f3 ♕g7−+] **11... ♗g4 12. ♕e1 ♘d4 13. ♘c3**□

[13. h3 ♘e2+ 14. ♔h1 ♖×h3+ 15. g×h3 ♗f3#] **13... ♘f3+! 14. g×f3 ♗×f3** △g×h2#, and if now 15. h×g3 ♖h1# **0:1**

We can also refine the comment to moves 12 by Black and 13 by White with the specification of the threat. This could not have been done with `\threat` (section 2.3), because the threat involves a whole vari-

\Threat   ation, not simply a move. With `\Threat<⟨threatened variation⟩>`, TEXmate will typeset the ⟨threatened variation⟩ with appropriate move numbers, etc. Unlike `\threat`, `\Threat` does not include the △ sign, but this can be added to the first move if necessary. Sometimes a space must be forced—the idea is that `\Threat` can be used in connection with running text, so nothing is rigidly added. (On the other hand, since this is not a real variation playable on the board, skak is turned off.)

So, by saying '`Nd4 \Threat<\ \withidea Ne2+ Kh1 Rxh3+ gxh3 Bf3\#] Nc3\onlymove`' we get '**12... ♘d4** △13... ♘e2+ 14. ♔h1 ♖×h3+ 15. g×h3 ♗f3# **13. ♘c3**□14. ♗d5', a better option for these moves than we have had so far.

\dummy   On the other hand, the commands `\dummy` and `\ddummy` make
\ddummy   TEXmate advance half a move or a complete move (that is, a movement by both players). They can be used in commentary to talk about what is to come, and they are in some senses more flexible than `\ahead`. But they remain in TEXmate 2 mainly for compatibility. Their main drawback is that they confuse skak (that is following the game, so that the moves have to make sense, and the move numbers have to be consistent). In TEXmate 2, therefore, they immediately turn skak off: for the remainder of the variation (or sub-variation), skak will not try to follow the game. The main consequence of this is that the variation cannot be automatically diagrammed.

\white   Similarly, the old commands `\white` and `\black`, that force
\black   TEXmate to take the next move as one done by the indicated side, have to turn skak off.

2.9   Multiple variations

In complicated games, a commentator will often need to examine several alternatives in a given position. The tools given so far are not

satisfactory for this. In old TEXmate it could be achieved by handling groups properly, but this is not exactly trivial for the user (who is thinking of variations that are already complicated as it is!). In addition, this approach puts skak off the game, and will create strange results.

So, TEXmate 2 provides an additional tool for this, that turns out to be very powerful and useful. It is the family of environments `{variations}`.

Again, the final position of Dubois–Steinitz provides illustration. White could also try *advancing* the pawn. So, having two alternatives for White's 14, let's discuss the different `{variations}` environments.

variations   The regular

\var   `[\begin{variations}`
`\var` ⟨*variation*⟩
`\var`⟨*variation*⟩
⋮
`\end{variations}]`

is designed for running commentary (not a lot of text). It makes the first move of each variation bold, and puts a ';' between variations:

14. . .♝×**f3** △g×h2# [If now **15. h×g3** ♖h1#; **15. h3** ♖×h3 △♖h1#]   **0 : 1**

was produced by:

```
Bxf3 \threat<gxh2\#>[|If now |\ahead\begin{variations}
\var hxg3 Rh1\#%
\var h3 Rxh3\threat<Rh1\#>\end{variations}]\resigns
```

\var*   The starred `\var*` forgoes any formatting (no bold, no semicolon). It is useful when one of the variations is embedded in text. You can always force the bold first move by saying `\var*\bfseries`. In general, font can be set immediately after `\var` or `\var*`, and it will apply to the first move of the variation only.

variations*   `\begin{variations*}` creates a list of variations where no variation has formatting (thus giving a shorthand for many `\var*`'s). Of course it has to be closed by `\end{variations*}`.

On the other hand, `\begin{variations}` has a very different behavior when it appears in a 'text commentary' (i.e., one open with `\[`

rather than [). Then it invokes another environment (usually a list, by default an {itemize}), where each \var is an \item. (The starred variations*, however, behaves as in non-text commentary.)

So, a more explicit commentary to the final position of our game is:

```
...Bxf3\[| threatening mate on h2. If now
|\ahead\begin{variations}
\var hxg3 Rh1\#
\var h3 Rxh3\threat<Rh1\#>\end{variations}|
In view of that, White resigned.|\]\resigns|
```

14...♗×f3 threatening mate on h2. If now

- 15. h×g3 ♖h1#

- 15. h3 ♖×h3 △♖h1#
In view of that, White resigned.   **0 : 1**

\VariationsEnvironment   List environments defined by other packages (paralist, enumerate, etc.) can be used. For example:

```
\VariationsEnvironment
    {\begin{enumerate}[a)]}
    {\end{enumerate}
```

Different {variations} environments can be nested one into another, at least in some combinations (that is, sometimes there are problems, but it's been hard to understand why). It seems that the main requirement is that they don't appear at the same level of commentary. Here is a full analysis from a game that actually calls for commentary this deep. This is the input:

```
|Bd4!! f5\onlymove Bxg7+\onlymove Kxg7
[\begin{variations}
\var Kg8 Qg3! Bxd6 Bxc6 Qxc6 Qg6! Rf7\onlymove
    Bh6+ Kh8 Qxf7 Rg8 Bg5! Rg7\onlymove Qe8+ Bf8
    [Rg8 Bf6+ Nxf6 Qxc6] Re1\WBetter
\var Kh7 Qh3+ Kxg7 Qg3+| transposes to the
```

13

```
game|\end{variations}]
Qg3+ Kh7 [Kf6? Qg5\#] Rb3!!| (threatening mate
with |\Threat<Qh3+ Kg7 Rg3+ Kf6 Qh6\#>\[|) and now:
|\ahead\begin{variations}
\var Bxd6 \[| where I had calculated
    |\ahead\begin{variations*}\var Qh4+ Kg7 Rg3+ Kf7 Qh5+!
    Kf6 Rg6+ Kf7 Rh6+ Ke7 Rh7+|, but
    |\var Qg5!\end{variations*}\]|
    with mate is more elegant.
|\var Nf6 Qh3+ Kg7 Rg3+ Ng4 Rxg4+! fxg4 Qxg4+ Kh8
    Qh5+ Kg8 Qh7\#|.
|\var Rf6 Qh3+ Kg7 [Rh6 Bxf5! exf5 Qxf5 Rg6 Rh3+|
    and mate|] Rg3+ Rg6 Nxf5+! exf5 Rxg6+ Kxg6
    Qxf5+ Kf8 Qh6+ Kf7 Bd5+ Ke8 Qg6+ Kf8 Qf7\#|.
|\var Nce5! fxe5 Nxe5 Nxf5! exf5 Qxe5 Qf6 Bxf5+
    Qxf5 Qxe7+\WBetter|.
|\end{variations}\]|
```

This is the position:

Garcia–Winwood

After 33...♗e7
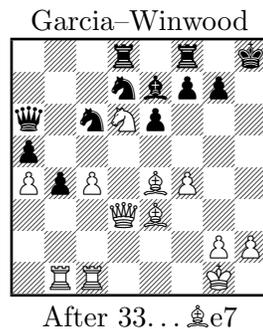
and this is the output:

34. ♗d4!! f5☐ 35. ♗×g7+☐ ♔×g7 [**35...♔g8** 36. ♕g3! ♗×d6 37. ♗×c6 ♕×c6 38. ♕g6! ♖f7☐ 39. ♗h6+ ♔h8 40. ♕×f7 ♖g8 41. ♗g5! ♖g7☐ 42. ♕e8+ ♗f8 (42...♖g8 43. ♗f6+ ♘×f6 44. ♕×c6) 43. ♖e1+−; **35...♔h7** 36. ♕h3+ ♔×g7 37. ♕g3+ transposes to the game] **36. ♕g3+ ♔h7** [36...♔f6? 37. ♕g5#] **37. ♖b3!!** (threatening mate with 38. ♕h3+ ♔g7 39. ♖g3+ ♔f6 40. ♕h6#) and now:

- 37...♗×d6 where I had calculated **38. ♕h4+** ♔g7 39. ♖g3+ ♔f7 40. ♕h5+! ♔f6 41. ♖g6+ ♔f7 42. ♖h6+ ♔e7 43. ♖h7+, but **38. ♕g5!** with mate is more elegant.

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- 37…♘f6 38. ♕h3+ ♔g7 39. ♖g3+ ♘g4 40. ♖×g4+! f×g4 41. ♕×g4+ ♔h8 42. ♕h5+ ♔g8 43. ♕h7#.

- 37…♖f6 38. ♕h3+ and now:

  - 38. ♖h6 ♗×f5! 39. e×f5 ♕×f5 40. ♖g6 ♖h3+ and mate, as in the game.
  - 38. ♖g3+ ♖g6 39. ♘×f5+! e×f5 40. ♖×g6+ ♔×g6 41. ♕×f5+ ♔f8 42. ♕h6+ ♔f7 43. ♗d5+ ♔e8 44. ♕g6+ ♔f8 45. ♕f7#.

- 37…♘ce5! 38. f×e5 ♘×e5 39. ♘×f5! e×f5 40. ♕×e5 ♕f6 41. ♗×f5+ ♕×f5 42. ♕×e7++−.

2.10 Setting up a position

\position With the command \position, you can set up the board to any given position. As in skak and old TEXmate, the position itself is indicated in FEN format: line by line, from top to bottom, lowercase for black pieces, uppercase for white, and numbers for empty squares—lines separated by /. For \position, the lines do not have to have all 8 squares: a / at the end of a line instructs TEXmate to 'fill in' the remaining places with empty squares.

It's much easier just to see one than to read the paragraph above:

```
\position{r1bq1rk/4bppp/p1p/1p1nR/%
    8/1BP/PP1P1PPP/RNBQ2K}
```

creates a position that can be visualized with skak's \showboard:
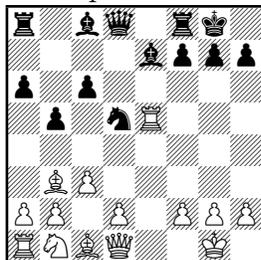
This is a Marshall-Attack position, and it's White's turn to make his eleventh move. If moves are going to be typeset for this diagram, we need TEXmate to know it's move 11 by white. That's easy enough

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with old commands (\white 11), but in TEXmate 2 we have to instruct skak as well.

In order to do that, \position has an optional argument, something like [b 19]—whose turn it is (w or b), and what move number it is. The diagram above should be created with

```
\position[w 11]{r1bq1rk/4bppp/p1p/1p1nR/%
    8/1BP/PP1P1PPP/RNBQ2K}
```

The position is now in memory, and will be upgraded with any new moves. It can be sent, at any point, to diagram memory with \toD.

\position is designed for quick diagram drawing (where it does not matter who can castle where, etc.). For complete FEN descriptions of positions (for example from an external source), skak's \fenboard{⟨FEN position⟩} can be used. It has been modified so that TEXmate will know who is to play and what the move number is.

\diagram The old TEXmate command \diagram, kept for compatibility, has the effect of \position followed by \showboard. It now accepts the optional argument (turn and move number) and passes it on to \position.

3   Customization

3.1   The input

\pieceinitials By default, input goes by the piece initials customary in English (Rook, kNight, Bishop, Queen, King). This can be changed, so that input can be though of (or copy-pasted in) other languages. Adding the Pawn at the beginning, and going left-to-right through the initial position, \pieceinitials{⟨new initials⟩} will change the initials.

The effects of this are:

- Input in chess mode uses the new initials for pieces.

- skak will also change. Even the commands that are not interfaced by TEXmate (notably \showonly{⟨pieces-to-show⟩}) will make use of the new initials.

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- Position setup with \position, \diagram, and \fenboard will use the new language.

- chessfss-directed output after \usetextfig will use the new language.

The architecture of the different programs even allows input in one language and output in another: issue \pieceinitials for the input language, and follow it immediately with chessfss's \setfigtextchars to set the output. (Of course, \usetextfig must be in place for the latter to have any consequences.)

There is no more customization to the input to be done: **castling** can be input either with zeroes or with O's. **Captures** can be input either with 'x' or with ':'—or not at all, hoping for skak to be OK with that (it often is). Of course, in the latter case you would lose any automatic formatting of captures. **Checks** are a '+' or nothing—no problem here. It is strongly recommended to input **Promotions** with the '=' sign ('g1=Q'), because skak will understand it.

So, the system is immediately ready to read PNG games (without commentary), as long as the input language (the piece initials) is not changed.

3.2   The output: signs

\Castle   If you want castles like "0–0–0", type \Castle0 (default). If you like them like "O–O–O", type \CastleO.

\takes   Predefined essentially as $\times$, you can \renewcommand\takes to substitute your favorite sign for captures (a colon? nothing?).

\checksign   Checks are \checksign ('+' by default). Mate is \# ('#') by
\#   default. There is a \mate sign in the informator fonts of skaknew, that looks like '#', and to use it you can \renewcommand\#{\mate}.

3.3   The output: punctuation

The material between moves and move numbers can be customized. The appropriate commands, their function, and their default, are in Table 1.

Command	Meaning	Default
\afterno	What comes between the move number and White's move	.~
\afterw	What comes between White's move and Black's	␣
\afterb	What comes between Black's move and the (immediately) following move number	␣
\beforeb	What comes before Black's move when the variation is resumed	\the\move\dots
\beforeno	What comes before the move number (always, sometimes after \afterb).	nothing

Table 1: Punctuation commands

3.4 The output: fonts and contexts

There are four levels of commentary in TEXmate, as summarized in Table 2.

Level no.	Context	Font	Delimiters
i	Main game	boldface	nothing
ii	Comm. level 1	normal	[and]
iii	Comm. level 2	normal	(and)
iv	Comm. level 3	italic	(and)

Table 2: Levels, default fonts and delimiters

`\...font`
`\...open`
`\...close`
Fonts and delimiters can be changed. Each level has commands for 'font,' 'open,' and 'close.' Those of level three, for example, are \iiiopen, \iiiclose, and \iiifont. These three are defined by default as follows:

```
\let\iiifont\normalfont
\newcommand\iiiopen{(}
\newcommand\iiiclose{\leavevmode\unskip)}
```

and the others are analogous. They can all be redefined. The \leavevmode\unskip in \iiiclose removes the space that is added by TEXmate after the last move.

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Similarly, the space before and after the delimiters is embedded in TEXmate. `\unskip`, or its safer version `\leavevmode\unskip` can be used to remove these spaces. For example, to use the em-dash as delimiter for the third level, the redefinitions should be

```
\renewcommand\iiiopen{\leavevmode\unskip---}
\renewcommand\iiiclose{\leavevmode\unskip---}
```

`\...opent`
`\...closet`

The delimiters work for commentaries open with `[`. For commentaries with `\[` ('text commentaries'), the commands are `\iopent` and `\icloset`, etc. ('t' for 'text'). In principle they are all defined as `\relax` (nothing), but they could be redefined so that, for example, all commentary at level ii starts on a new paragraph.

`\varfont`

The regular variations in a `{variations}` environment within a `[` commentary (not a `\[` one) make their first move bold by default. This is command `\varfont`, which is originally equivalent to `\bfseries`, but can be changed. This is invoked by `\var`, but not by `\var*`.

`\steplevel`
`\backlevel`

Levels can be arbitrarily traversed with commands `\steplevel` and `\backlevel`. This only affects fonts and typesetting uses, so there is no concern about getting skak confused. It might confuse the reader, though.

3.5 Diagrams

This section applies to intrinsic TEXmate diagram-drawing tools. The tools of both skak (notably `\showboard`, that typesets the current position) and chessfss (that provides commands for font, size, each piece on each kind of square, etc.), are kept independent, so that modularity is ensured.

In fact, TEXmate 2 does not have some possibilities of old TEXmate. Its diagrams are always 8×8 squares. chessboard provides excellently for less standard situations. This program works hand in hand with skak, which means that when TEXmate is used with this latter, there will be also communication with chessboard.[1]

---

[1] However, skak and chessboard do not pass information on to TEXmate.

3.5.1 Diagram font, size, etc.

TeXmate does not deal with these matters, which are delegated to the package chessfss. The latter's `\setboardfontsize{12pt}` is issued by TeXmate as a default, but there is no further handling. In addition, this latter default only has an effect when skak is not loaded, since otherwise skak's commands (`\tinyboard`, `\smallboard`, `\normalboard`) take precedence. TeXmate sets `\smallboard` by default.

3.5.2 Issuing the diagrams

Diagrams are *issued* at one point, and *printed* at another. This allows the typesetting of diagrams side by side without regard to what the current position.

`\diagramsign`   Issuing the diagrams is done by the commands explained in section 2.4, namely `\toD`, `\toD*`, and `\preparediagram`. The regular version `\toD` inserts the contents of (D), which by default is '(D)', but can be freely redefined. `\toD*` does not insert `\diagramsign`.

The diagrams are then put in memory—as LaTeX boxes—together with some accompanying material: player names, move number, etc. (Note that skak's `\showboard` or chessboard's `\chessboard` do not 'issue' a diagram in TeXmate's terms, but simply print the current or given position.) This section describes the basic customization of the diagram boxes. It actually tells some white lies, so section 3.5.5 below explains in full detail.

By default, diagrams:

- Are not numbered.

- Put Black's name (whatever was given by `\bname`) above the diagram, boldface.

- Put White's name (`\wname`) below, boldface.

- Typeset the last move (the argument to `\toD` or `\toD*`) below White's name.

- **Analysis** diagrams (diagrams issued within a commentary, i.e., between [and] or `\[` and`\]`) override the default behavior: instead of the players' names, the word 'Analysis' appears at the top of the diagram, and the last move appears at the bottom.

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\topdiagramnames	Players' names on top of the diagram. Like this: '**Dubois–Steinitz**'.
\bottomdiagramnames	Players' names at the bottom of the diagram.
\diagramnames	White's name at the bottom, Black's on top (default).
\nodiagramnames	No players' names.
\diagramnumber	Diagram number on the top of the diagram (above names, if any). The number is formatted by the current version of \TheDiagram—by default something like '*4*'. Regular (lower-case) \thediagram is intended for running-text reference.
\nodiagramnumber	No diagram numbers (default).
\leftdiagramturn	Turn marker at the left of the diagram.
\rightdiagramturn	Turn marker at the right of the diagram.
\nodiagramturn	No turn marker (default).
\diagrammove	Last move at the bottom (default).
\nodiagrammove	No last move.
\analysistop	What goes by default on top of analysis diagrams. Defined originally as 'Analysis'.

Table 3: Command for diagram information

The commands of Table 3 govern these defaults. They are user-modifiable with \renewcommand, with one warning: these commands (and in general non-chess stuff) should go *outside* chess mode.

\whiteturnmarker
\blackturnmarker
When a turn marker is requested, TEXmate will use the contents of either \whiteturnmarker or \blackturnmarker. These, by default, are defined as:

```
\newcommand*\whiteturnmarker{%
    \raisebox{.75\expandafter\ht\csname
    chessdiag\@roman\@tempcnta\endcsname}{%
    \textsl{W}}\ }
```

where the first part is responsible for raising the symbol to three-quarters the height of the diagram. Modification of the coefficient .75

and of the actual contents of the box should (or the space after it) should pose no problem.

\nextdiagramtop On the other hand, it is possible to set the top and the bottom of
\nextdiagrambottom one diagram (the one that is issued next, with `\toD` or `\toD*`) with `\nextdiagramtop{⟨header⟩}` and `\nextdiagrambottom{⟨footer⟩}`.

For example:

```
\nextdiagramtop{\wname--\bname}
\nextdiagrambottom{Final position after}
\toD*{Bxf3}
\makediagrams
```

produces

Dubois–Steinitz
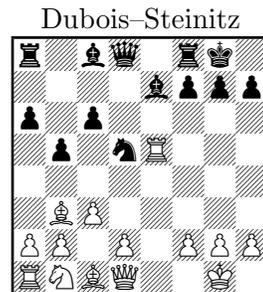
Final position after
10. . . ♗xf3

\diagramtop To set the top or bottom of *all* future (non-analysis) diagrams at once,
\diagrambottom the commands `\diagramtop` and `\diagrambottom` can be redefined
\wname with `\renewcommand`. For this, the commands `\wname` and `\bname`,
\bname which hold the player names (as given at the beginning of the game with `\whitename` and `\blackname`, as in section 2.2), might prove useful.

\makediagramsfont All the text typeset by `\makediagrams` is subject to `\makediagramsfont`. By default it means `\small`, but it can be changed at any point.

3.5.3   Printing the diagrams

The diagrams are actually typeset with the command `\makediagrams`. This command will typeset, in principle, all diagrams in memory, framed and separated by `\hfill`'s. (There is therefore no need for `\centering`, which in fact can disturb the resulting layout.)

An optional argument to `\makediagrams[`⟨*n*⟩`]` will tell T_EXmate to typeset only the first *n* diagrams in memory. The rest of the diagrams take then the memory positions of those that were typeset.

\DiagramCache   By default, the number of diagrams that can be held in memory is 3. It can be enlarged with the command `\DiagramCache{`⟨*number*⟩`}`. So, a page of nine diagrams like page 24 below can be composed thus (the counter is reset because previous diagrams in this document have stepped it):

```
\DiagramCache{9}
\setcounter{diagram}{0}
\tinyboard
\diagramnumber
\leftdiagramturn
\let\makediagramfont\footnotesize
 % First diagram
\position[w 22]{r1q4r/pp2bQ/2p2p1k/6pp/4N/6R/PPP2PPP/2KR}
\preparediagram{}{22.~?}\label{pageref}

 % Second diagram
\position[b 20]{r5k/1bpp1ppp/1p1b3r/pP2n1q/2PB/P3PPP/3QBR1P/R2N2K}
\preparediagram{}{{20\dots?}}

etc.

 Ninth diagram
\position[w 27]{2r1r1k/p1q2ppp/6n/1p1Q/2N1P/P3B2P/2R2PP/6K}
\preparediagram{}{27.?}

\begin{figure}[p]
\makediagrams[3]

\smallskip\makediagrams[3]

\smallskip\makediagrams[3]
\end{figure}
```

Almost all the layout parameters described in the previous section have an effect when the diagram is *issued*. However, the switches for

1

W

22. ?

2

B

20…?

3

W

13. ?

4

W

34. ?

5

B

13. ?

6

W

22…?

7

W

44…?

8

B

22…?

9

W

27.?
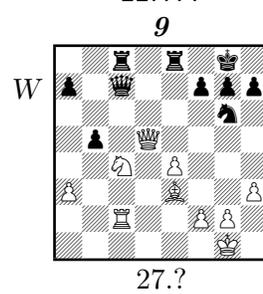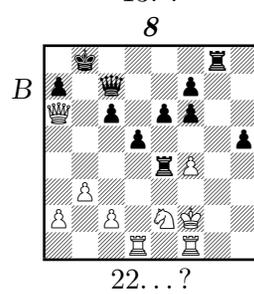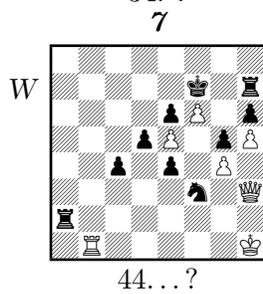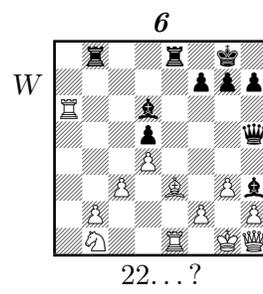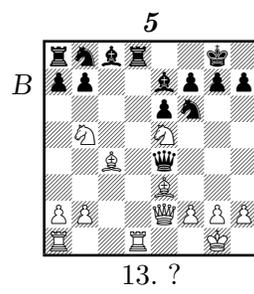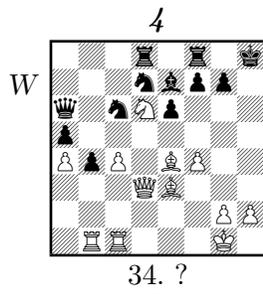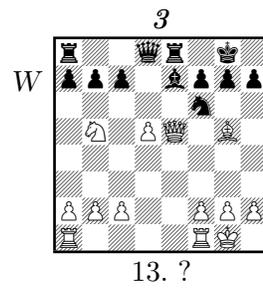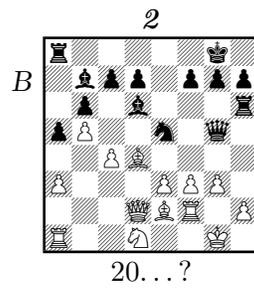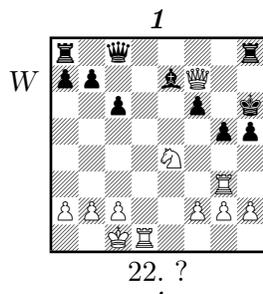
move number and last move (i.e., whether and where they should be put) are enforced at the moment of printing with `\makediagrams`.

3.5.4   Diagrams and cross refences

Diagrams are counted (whether the number is printed or not) with the `diagram` counter. When diagrams are printed with `\makediagrams`, this counter is `\refstep`'ped, i.e., a `\label` can be assigned to it for cross references. The mechanism is not completely implemented in TEXmate, not least because there is little of a 'standard' use. As it stands, the main problem is that the user cannot assign individual `\label`'s to diagrams that printed with the same `\makediagrams`. On the other hand, if the latter command is used for one diagram at a time, cross referencing is fully functional.

3.5.5   Detailed mechanism description

The commands described in the previous section are not intended to provide full control on diagram layout, but rather simple tools for the needs of most of the time. More extensive customization will require hands-on programming. The diagram mechanism in TEXmate 2 has been designed to make this task easier, should it arise. This section explains it.

As has been said, a diagram is *issued* first and *retrieved* later. The issuing commands (`\toD`, `\toD*`, and `\preparediagram`) build four LATEX boxes and one command containing the diagram and the accompanying information. The names of these boxes contain the diagram number in lowercase Roman numerals. If, for example, a diagram in the third memory position is being issued, the following boxes are created:

- `\chessdiagiii` holds the diagram itself—and it is a copy of either `\showboard` or (when skak is not loaded) TEXmate's own typesetting of the diagram with chessfss commands.

- `\chessdiagiiitop` holds whatever goes on the top of the diagram. It can be: *a*) with the `\...diagramnames` switches, the names of the players (or of Black); *b*) whatever was defined by

the user as \diagramtop; or *c*) the first argument of the user's \preparediagram.

- \chessdiagiiibottom holds whatever goes on the bottom of the diagram. Analogous.

- \chessdiagiiimove holds the typeset form of the argument to \toD or \toD. It is empty in the case of \preparediagram.

In addition, each diagram also has a command, \chessdiagiiiturn for the third diagram. This is set, according to whose turn it is when the diagram is issued, to expand to either \whiteturnmarker or \blackturnmarker.

The default \makediagrams (the command that is most likely to change in customization) is a fairly simple usage of these boxes and commands. Essentially, it follows the switches for diagram number, turn, and last move (\if@numbertop, \if@turnleft, \if@turnright, \if@movebottom) to typeset a \shortstack[c] containing, from top to bottom

<div align="center">

the diagram number
\chessdiagiiitop
\chessdiagiii
\chessdiagiiibottom
\chesdiagiiimove

</div>

For items to the left or the right, it builds 0-wide boxes (so that they don't affect centering and spacing) that contain \whiteturnmarker or \blackturnmarker.

The same applies for all diagrams, just replacing the inner iii by the Roman numeral (lowercase) of the position of the diagram in memory. Note that this number is not the diagram number, but its slot in memory. After using the boxes in that way, \makediagrams calls \@killdiagrams, that deletes the diagrams from memory (and moves any remaining diagrams to the first memory positions).

3.6   Cosmetics

There are other tools in TeXmate that are provided 'as is,' without complicated customization, because there is no standard. These

should be modified or directly replaced to follow individual preferences.

The game title is one of them. The pieces of information already implemented (with the user commands described in section 2.2) are: the players' names, held in `\wname` and `\bname`; their ratings, `\@welo`, `\@belo`; the event, `\@tourn`; the opening, `\@opening`; and the ECO code, held in `\@eco`. The latter is the only one that adds something to the user's input: `\def\@elo{ -- \textbf{#1}}`.

Then, `\makegametitle` simply uses these variables. Redefining it will not affect the program in any way.

`\result` Game result is also a 'cosmetic.' The current definition of `\result{⟨result⟩}` puts a boldface copy of its argument on the right margin of the current line, if it fits, or of the next one, if it doesn't. (When the command is encountered not in the main game, but in the commentaries, the argument is simply typeset.)

`\whitewins` `\whitewins` simply means `\result{1\,:\,0}`; `\blackwins` and
`\blackwins` `\drawn` are analogous. Finally, `\resigns` issues `\whitewins` if it's
`\drawn` Black's turn, or `\blackwins` if it's White's.
`\resigns`

4 TEXmate 2 and **skak**

The command `\showboard` in the package **skak** has been mentioned repeatedly in this manual. It can be used with TEXmate, and it provides total flexibility for the typesetting of the diagram, forgoing the automatic formatting that TEXmate performs.

Another important command, also mentioned before, is `\fenboard`.

But there are other commands from **skak** whose use might prove an extension to TEXmate's capabilities. This is mainly connected to saving and restoring positions in memory or disk. **skak**'s `\storegame{⟨key⟩}` saves a position in memory, to be restored by `\restoregame{⟨key⟩}`. With this tool, for example, it is possible to quote an independent game in commentary, and still have the capabilities of **skak**. All that is needed is to store the main game, type `\newgame`, quote the alternative game, issue any diagrams from it, and restore the main game when done. (**skak** also offers `\sidegame` for this purpose, but its use with TEXmate is not as straightforward.

`\SkakOff`
`\SkakOn`   If, for any reason, the capabilities of **skak** are an obstacle rather than a utility, **skak** can be turned off with `\SkakOff`. TEXmate will then typeset the moves as given, without passing them onto **skak**, and any potential problems and error messages caused by **skak** trying to follow the game will be avoided. `\SkakOn` turns all capabilities back on.

TEXmate 2 has a small tracing utility of **skak**'s workings: option `[diagnostics]` will type out messages with the moves that have been passed on to **skak**, helping understand where the latter stands respect to the typeset game and analysis.

5   Chess symbols

Chess symbols, as chess fonts, are delegated to **chessfss** in TEXmate 2. There are some differences with the output of TEXmate, for the latter used to modify some of the symbols (in size, in position, etc.). It has been decided, for the sake of modularity, to forgo these modifications in TEXmate 2. Table 4 lists the symbols (with TEXmate command names).

\wbetter	⩲
\bbetter	⩱
\wBetter	±
\bBetter	∓
\WBetter	+−
\BBetter	−+
\equal	=
\unclear	∞
\compensation	⯔
\development	↻
\spaceadv	○
\attack	→
\initiative	↑
\counterplay	⇆
\zugzwang	⊙
\onlymove	□
\withidea	△
\betteris	⌓
\boardfile	⇔
\boarddiagonal	⬈
\boardcenter	⊞
\kingside	≫
\queenside	≪
\weak	⤬
\ending	⊥
\bishops	⊡
\oppositebishops	⬒
\samebishops	⬓
\unitedpawns	∘∘
\separatedpawns	∘··∘
\doubledpawns	⚇
\passedpawn	⚇
\pawnsno	>
\timetrouble	⊕
\with	∟
\without	⌐
\chessetc	∥

Table 4: Chess symbols

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Index of user commands

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