

Creating diagrams for chess problems

Version 1.6

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Abstract

It have been more than ten years now, since we last published a documented version of the `diagram.sty`, which is mainly intended to be used for typesetting chess problems. Since 1994 I (Stefan Höning) made a couple of enhancements to the sourcecode of the style, without publishing and putting this into the documentation. We also needed to upgrade to L^AT_EX 2 ϵ . The major change is the documentation language, which is english now.

The style itself tries to collect very detailed information about a chess problem by providing a lot of commands, which you may use to specify the necessary information. There are different reasons for this. One idea was to enable people to read L^AT_EX-diagrams into databases with information as detailed as possible. Otherwise it should be easy to change the layout of a diagram by applying a changed style - not by changing the source.

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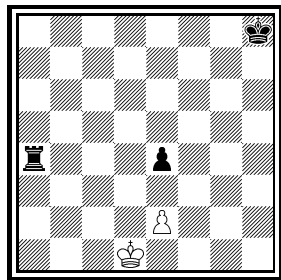
1 Creating diagrams

1.1 An introductory example

Let us first take a look at a simple example which should only show what you have to type into your \LaTeX -code to get nice looking diagrams.

1

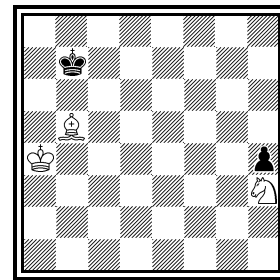
Thomas Brand
Problemkiste 1992
Elmar Bartel gew.



h#7 C- (2+3)

2

Thomas Brand
Problemkiste 1992



h#5 C- (3+2)

1) Thomas Brand:

1.Ta3 Kc2!, 2.Tf3 e×f3, 3.e3 f4, 4.e2 f5, 5.e1T f6, 6.Th1! (Te7?) f7, 7.Th7 f8D#

2) Thomas Brand:

1.Ka8 Sg1, 2.h3 Ka5, 3.h2 Kb6, 4.h×g1L+ Kc7, 5.La7 Lc6#

To use the package you have to make it available to \LaTeX using `\usepackage{diagram}` inside the preamble of your document.

Then you may use the `diagram` environment to create the diagrams. For the above example I had to type the following:

```
\begin{diagram}
\author{Brand, Thomas}
\source{Problemkiste} \year{1992}
\dedic{Elmar Bartel gew.}
\pieces[2+3]{wKd1, wBe2, sKh8, sBe4, sTa4}
\stip{h\#7}
\sol{1.Ta3 Kc2!, 2.Tf3 e\x f3, 3.e3 f4, 4.e2 f5, 5.e1T f6,
6.Th1! (Te7?) f7, 7.Th7 f8D\#}
\end{diagram}
%
\hfill
%
\begin{diagram}
\author{Brand, Thomas}
\source{Problemkiste} \year{1992}
\pieces[3+2]{wKa4, wLb5, wSh3, sKb7, sBh4}
\stip{h\#5}
\sol{1.Ka8 Sg1, 2.h3 Ka5, 3.h2 Kb6, 4.h\x g1L+ Kc7, 5.La7 Lc6\#}
\end{diagram}

\putsol
```

diagram Any information which belongs to a problem should be put between `\begin{diagram}` and `\end{diagram}`. The above examples contains information for *authors*, *source*, *year of publication*, *stipulation*, *solution* and (in diagram 1) a *dedication*.

This information is shown around a chessboard except the solution, which is collected and put into the output using the `\putsol` command.

1.2 Elements of a diagram

This section describes the elements which may be used inside a **diagram** environment. For most of these elements there is no sense using them between `\begin{diagram}` and `\end{diagram}`. Some of them will not work outside of the environment (like `—`). In case you use these switches anywhere outside you will specify the information for all problems in your surrounding environment (which may be the complete document).

1.2.1 Collecting the problem information

The following information is typically given with a problem:

- \author**
 - With the `\author` tag you specify one author or a list of authors. If you specify more than one author, you must separate them with `”;` `”`. Normally an author is given as *”surname, givenname”*. You may change the way, how the name is interpreted by L^AT_EX using `\normalnames` and `\reversednames`. This `\author` command does only overwrite the default behaviour when used inside a diagram environment.
- \Dr**
 - Within the Authors command you should use the commands `\Dr`, `\Prof` and `\ProfDr` to specify these academic titles. So one may switch of the display of these titles — like it is generally done inside *Die Schwalbe*.
- \Prof**
- \ProfDr**
- \pieces**
 - With `\pieces` you specify the position to be displayed on the board. For each kind of piece you may specify a list of fields. Different lists of fields are separated by `”`, `”`. So the general syntax for specifying the position of a specific piece is:
`[color][piece]{rotation of piece}[list of squares];`
 e. g. `wTa1h1` should be clear, `nKa4` is a neutral king on a4
`w s n` may be used to specify the color of the piece.
`K D T L S B` may be used to specify the piece.
`R U L` may be used to specify an optional rotation: right, upside-down, left. So you may use `sDUc7` for a grasshopper on c7 — displayed as an upsidedown queen.
 The characters used to specify color, piece and rotation may be changed using the `\DefinePieces` command.
 You may also optionally specify the number of pieces in your diagram, which then will be used to control your input automatically.
 There is also support for an imitator, which is typically displayed as a black filled circle. So `sCf4` will produce the symbol of an imitator. This is shown in diagram 3.

<code>\stipulation</code> <code>\stip</code>	<ul style="list-style-type: none"> • is used to specify the stipulation of the problem, e.g. <code>\stipulation{\#2}</code> may be used to specify a <i>mate in two</i>. There is also an abbreviation <code>\stip</code> for this macro.
<code>\city</code>	<ul style="list-style-type: none"> • may be used to specify the city and country, where the author or the authors live. I use this inside the original section of <i>Die Schwalbe</i>. You should separate multiple cities (for multiple authors) with <code>;</code>. There is also a boolean switch <code>showcity</code>, which controls, whether this information is displayed.
<code>\specialdiagram</code>	<ul style="list-style-type: none"> • May be used to suppress the default diagram numbering (which uses a counter) and instead directly providing a diagram "number" which may be an arbitrary text.
<code>\sourcenr</code>	<ul style="list-style-type: none"> • May be used to specify the number which was used for the problem inside an originals section.
<code>\source</code>	<ul style="list-style-type: none"> • May be used to specify the book or magazine where the problem was issued first.
<code>\issue</code>	<ul style="list-style-type: none"> • May be used to specify e.g. the issue of a magazine where the problem was issued.
<code>\pages</code>	<ul style="list-style-type: none"> • May be used to specify the page (or pages) where the problem was issued.
<code>\day</code> <code>\month</code> <code>\months</code> <code>\year</code>	<ul style="list-style-type: none"> • May be used to specify the different parts of the date of publication of the problem. (E.g. for problems issued in the german magazine <i>Die Schwalbe</i> you will typically only specify the <code>\month</code> and the <code>\year</code>. For problems issued in <i>feenschach</i> you may specify a period of months like <code>\months{7-10}</code>.)
<code>\tournament</code> <code>\award</code>	<ul style="list-style-type: none"> • May be used to specify an award and a tournament for the problem.
<code>\dedication</code> <code>\dedic</code>	<ul style="list-style-type: none"> • May be used to specify a dedication which was given by the author of the problem.
<code>\condition</code> <code>\cond</code>	<ul style="list-style-type: none"> • May be used to specify the fairy conditions of a problem. Different conditions should be separated with <code>;</code>.
<code>\twins</code>	<ul style="list-style-type: none"> • May be used to specify the different twins of a problem. Different twins should be separated with <code>;</code>.
<code>\remark</code> <code>\rem</code>	<ul style="list-style-type: none"> • May be used to specify remarks to the problem. I typically use this to explain fairy pieces on the board. You may also use the abbreviation <code>\rem</code>.
<code>\solution</code> <code>\sol</code>	<ul style="list-style-type: none"> • <code>\solution</code> may be used to specify the solution of the problem. Normally this information is not used while displaying the board but it is only collected and may be put into your text using <code>\putsol</code>. There is also an abbreviation <code>\sol</code>.
<code>\judgement</code>	<ul style="list-style-type: none"> • May be used to describe the judgement given for a problem, e.g. when you are working on an award or when you are selecting problems for a "best of ..." book.

- `\comment` • May be used to specify some comment on the problem (e.g. the authors original comment.)
- `\themes` • May be used to specify themes displayed in the problem. Different themes should be separated with "; ". When creating a theme index, the themes will automatically be used to create the register.

There are some commands which not only collect information but normally direct result in a change of the diagram. These are:

- `\verticalcylinder` • does not display the outer vertical lines to symbolize a verticalcylindric board.
- `\horizontalcylinder` • does not display the outer horizontal lines to symbolize a horizontalcylindric board.
- `\noframe` • does completely suppress the outer frame e. g. to symbolize a torus board.
- `\noinnerframe` • sometimes you need to suppress the inner frame instead of the outer frame which is achieved by using `\noinnerframe`. You may not use this together with `\noframe`.
- `\gridchess` • displays lines to separates fieldsections for gridchess.

1.2.2 Modifying the layout of the diagram (and the solution)

There are a couple of switches which control the layout of the diagrams. These are typically used more generally, so you may specify these switches outside the `diagram` environment or use them in your own style, which depends on `cpd.sty`.

There are some switches which control the layout of the information which is displayed above a diagram:

- `\diagleft` • displayes the information left aligned
 - `\diagcenter` • displayes the information centered
 - `\diagright` • displayes the information right aligned
 - `\widedias` • is like `\diagcenter` but the information shown above the diagram may span the whole width of the page. So \LaTeX will not wrap long author names.
- `\dianamestyle` Using `\dianamestyle` (or `\solnamestyle`) you may specify how author-names are written above the boards (or before the solutions). You may use this only if you use `\reversednames` (which is the default). Otherwise it is not possible to distuingish between firstname and sirname. You must specify one of the following options as parameter to `\dianamestyle` (or `\solnamestyle`):

fullname Writes the authorname as *firstname sirname*. This is the default.

sirname Writes the *sirname* only.

short Writes an abbreviation of the *firstname* and the *sirname*. The abbreviation is calculated as follows:

- The first letter of the *firstname* will be used.
`\author{Brand, Thomas}` will be displayed as **T. Brand**
- When there is a combined *firstname* separated with a hyphen, each first letter will be used. (see below)
`\author{Reich, Hans-Peter}` will be displayed as **H.-P. Reich**
- When specifying the author name, you may provide the abbreviation for the firstname using the form *surname, firstname/abbreviation*.
`\author{Brand, Thomas/Th.}` will be displayed as **Th. Brand**

noname displays nothing

\diagnumbering The same way you may specify **\pagenumbering** you may specify the format the diagrams are numbered using **\diagnumbering** and **\pagenumbering** you may specify **arabic**, **Roman**, **roman**, **Alph** or **alph**. The default used is **arabic**. This command also switches the display for diagram numbers on.

\setmonthstyle You may also specify the way a month is displayed using **\setmonthstyle**. There are some boolean switches, which control whether a specific information is displayed. These are as follows:

piececounter • This is a L^AT_EX boolean, which is used to specify whether the number of pieces is displayed below the board. So you may change its value using **\setboolean{piececounter}{true}** or **\setboolean{piececounter}{false}**.

showcomputer • There is a boolean value **computer**, which controls whether the information about a computer proof is displayed or not. This value may be changed using **\setboolean{showcomputer}{true}** or **\setboolean{showcomputer}{false}**
\nocomputer For backwards compatibility we support the macros **\nocomputer** and **\showcomputer**.

showcity • This is a boolean switch, which controls whether the informed gathered using the **\city** command is displayed. The default of this value is **false**.

showacademictitle • This is a boolean switch, which controls whether academic titles **\Dr**, **\Prof** or **\ProfDr** — typically used within the **\author** command — are displayed. The default is **true**.

\notcomputerproofedsymbol You may specify the text, which is used indicate, whether a problem is
\computerproofedsymbol proofed by a computer. To specify the symbol for a problem, which is proofed, is created by **\computerproofedsymbol**. To specify the symbol for a problem, which is not computer proofed, is created by **\notcomputerproofedsymbol**. You may redefine these commands by standard L^AT_EX means (**\renewcommand**).

\selectelchfont You may specify which font is used for the chesspieces. There are two possible fonts:

pk for the font which was originally used in the german magazine *Problemkiste* ♔♚♛♜♝♞♟♠♡♢♣♤♥♦♧♨♩

fs for the font which was first used (and was created for) the magazine *feenschach* ♔♚♛♜♝♞♟♠♡♢♣♤♥♦♧♨♩

\diagramx In analogy to the defaults for fontsizes of a document you may specify sizes
\diagramxi of the fonts used in a diagram. The default will be set according to the fontsize
\diagramxii specified as the **\documentclass** option.

1.2.3 Other commands

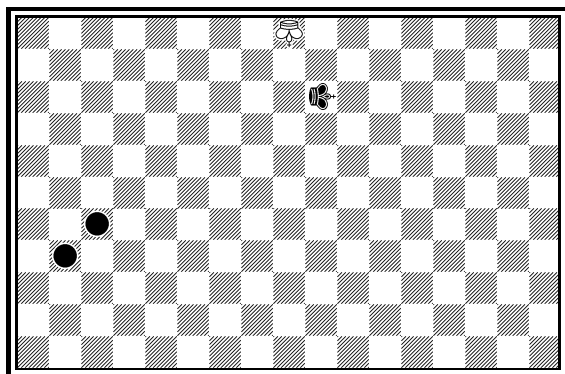
- `\label` • This overrides the normal `\label` definition such that the diagram number is displayed when using `\ref` instead of the page number.
- `\diagramnum` • This macro expects a number as a parameter. The number will be used to (re-)initialize the diagram number counter. With this command the output of diagram numbers also is switched on. It must be used outside the `diagram` environment.

1.3 Special boards

1.3.1 Changing the boardsize

`diagram[]` Instead of using a boardsize of 8×8 some fairy problems need smaller or larger boards. This can be achieved by specifying the rows and columns as an optional parameter to the `\begin{diagram}` environment. You first have to specify the lines and then the rows as the following examples shows.

3



C- (1+1)

is created by

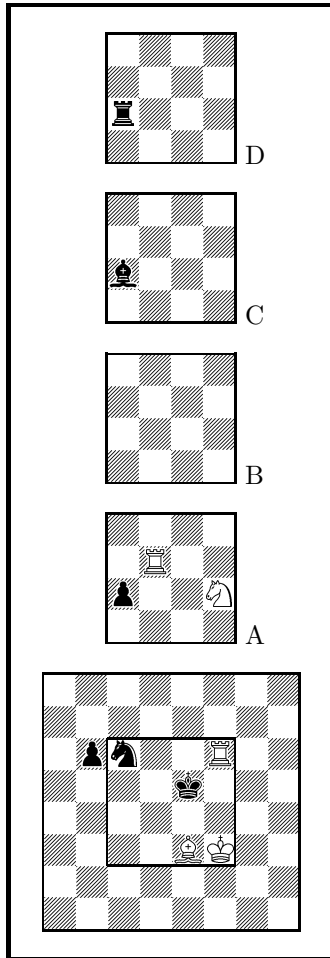
```
\begin{diagram}[17x11]
\label{bigdia}
\pieces{wKU{i11}, sKRj9, sCc5b4}
\end{diagram}
```

As you can see in the example, pieces are set using the `\pieces` macro. When using boards with more than 8 lines you have to continue with characters **i, j, k, ...**. In a board with more than 9 rows you have to specify the rows in curly braces `{ }` as shown in the example.

1.3.2 Stereo- and Space-Chess-Diagrams

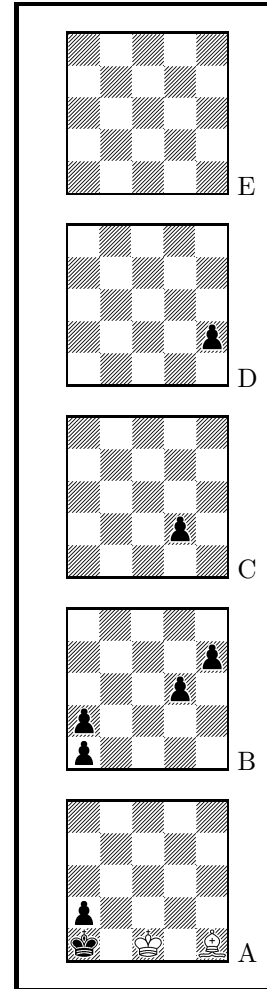
`stereodiagram` Other boards which are used from time to time are stereo chess or space chess boards (although there are quite few people which really have such boards!). To create these boards you just have to use either the `stereodiagram` or `spacediagram` environment instead of the normal `diagram` environment. Here is an example:

4
 Gerhard W. Jensch
 3104. *feenschach* 1980
 Preis



#9 C- (5+6)

5
 T. R. Dawson
 6595. *Fairy Chess*
 Review 12/1945



#2 C- (2+8)

These diagrams have been produced by the following code:

```
\begin{stereodiagram}
\author{Jensch, Gerhard W.}
\sourcenr{3104.}
\source{feenschach}
\year{1980}
\award{Preis}
\pieces{wKf3, wTf6d5A, wLe3, wSf4A, sKe5, sTc4D, sLc4C, sSc6, sBb6c4A}
\stip{\#9}
\end{stereodiagram}
\hfill
\begin{spacediagram}
\author{Dawson, T. R.}
\sourcenr{6595}.
```

```

\source{Fairy Chess Review}
\month{12}
\year{1945}
\pieces{wKc1A, wLe1A, sKa1A, sBa2Aa1Ba2Bd3Be4Bd2Ce2D}
\stip{\#2}
\end{spacediagram}

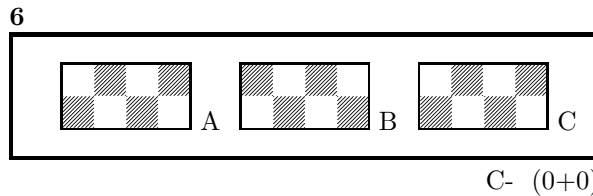
```

The main change is within the notation of the pieces, but people knowing space- or stereo-chess problems see that the notation is just one would expect.

`\spacelayout` Sometimes one would like show the different planes of a space diagram from left to right. This may be switched using the `\spacelayout` command, which takes one parameter:

vertical for planes organized bottom up

horizontal for planes organized left to right



Is produced by

```

\begin{spacediagram}[4x2x3]
\spacelayout{horizontal}
\end{spacediagram}

```

1.3.3 Cylindric boards / suppressing frames

`\horizontalcylinder` To stylize a cylindric board one typically does not show parts of the frame. `\verticalcylinder` When using `\verticalcylinder` the horizontal lines of the outer frame will not be drawn. `\horizontalcylinder` suppresses the drawing of the vertical lines of the outer frame. Using `\noframe` completely suppresses the outer frame. `\noinnerframe` suppresses the inner frame. In case of stereo- or space-chess-diagrams `\verticalcylinder`, `\horizontalcylinder` and `\noframe` suppresses the inner frame.

1.3.4 figurine Notation

figurine Instead of using the `diagram`, `stereodiagram` or `spacediagram` environment one may use the **figurine** environment. This suppresses the diagram output and produces a figurine notation inside the current text.

1.3.5 Changes within the board

`\nofields` You may remove single fields by using the `\nofields` or `\nosquares` command. `\nosquares` Using this command does make sense for empty black fields only. This command expects a list of squares separated by `"'`, `"'`. You may also use this command within a stereo- or space-diagram. In this case you must specify the fields the same way you do it inside the `\pieces` command.

`\fieldframe` You may specify single fields, which should be surrounded by a frame. This is possible using the `\fieldframe` command. You must specify the list of fields which should have frames the same way you specify fields within the `\nofields` command.

`\gridlines` A more general form of lines within diagrams is possible by using the `\gridlines` command. You may specify a list of horizontal or vertical lines within the diagram. Different lines should be separated by `''`, `''`. A single line must be specified as:

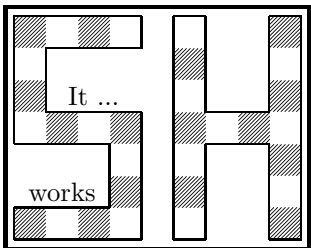
[plane](v or h)(x-coordinate)(y-coordinate)(length in squares)

You must specify a plane in case of stereo- or space-chess only. For a vertical line starting at the lower left corner of `''c2''` ending at the upper left corner of `''c8''` the command to use is: `\gridlines{v217}`. Concerning the coordinates and length specifications you should pay attention to put values greater 9 in curly braces `{ }`.

`\fieldtext` Sometimes you need to show text on some squares. This is done using the `\fieldtext` command. The syntax for a single text is: `{Text}(x-coordinate)(y-coordinate)`

Now an example how to use `\gridlines`, `\nofields` and `\fieldtext` to create some *''Letter-Board''* with text inside.

7



C- (0+0)

```

\begin{diagram}[9x7]
\noinnerframe
\nofields{a2, b2, c2, a3, b3, c3, %
b5, c5, d5, b6, c6, d6, %
e1, e2, e3, e4, e5, e6, e7, %
g1, h1, h2, h2, g3, h3, g5, h5, g6, h6, g7, h7}
\gridlines{h004, h013, h033, h143, h163, h074, %
v001, v034, v142, v312, v404, v461, %
h501, h571, h632, h642, h801, h871, %
v507, v603, v643, v803, v843, v907}
\fieldtext{{It ...}c5, {works}b2}
\end{diagram}

```

1.4 Misc

1.4.1 Chess pieces within normal text

Sometimes you may need symbols of chess pieces within your normal text, e.g. to show the *Viele-Väter-Stellung* ♖c8, ♗b6, ♘a8, ♙a7. This is possible by `{\wK}c8`, `{\wB}b6`, `{\sK}a8`, `{\sB}a7`. Additionally you may use some of these symbols:








`\swL` ♖ a white bishop on a black square

`\ssL` ♜ a black bishop on a black square

`\wNr` ♞ a white nightrider

`\nNr` ♞ a neutral nightrider

`\sNr` ♞ a black nightrider

`\wGh`  a white grashopper
`\nGh`  a neutral grashopper
`\sGh`  a black grashopper
`\Imi`  an imitator, you may also use the **Circle** notation:
`\wC`  a white circle
`\nC`  a neutral circle
`\sC`  a black circle

1.4.2 Other often used symbols

The style also defines commands for other symbols, which are often used within the declaration of twins or when writing a solution:




`\set` * setplay
`\ra` \rightarrow a left to right arrow
`\lra` \leftrightarrow a double ended arrow
`\OO` **0-0** king side castling
`\OOO` **0-0-0** queen side castling
`\x` \times for "takes"
`\any` \sim for any move (you may not simply use a \sim within your text because \TeX handles this as a protected space)

1.4.3 Internationalization

`\DefinePieces` This part is relevant for people who do not like the german notation for pieces and therefore want to change this within their sources. Using the german notation, you specify the color of a piece as **w**, **s** or **n**, the type of a piece as **K**, **D**, **T**, **L**, **S**, **B** and a possible rotation of a piece as **L**, **R** or **U**. To use another notation you may use the `\DefinePieces` command which takes 3 parameters.

1. the letters used to specify the colors of the pieces using the order white, black, neutral
2. the letters used to specify the type of a piece using the order king, queen, rook, bishop, knight, pawn. You may not use a capital **C**, because this is used for circles.
3. the letters used to specify an optional rotation using the order left-turned, right-turned, upside-down. You must use capital letters for this.

When using a `\DefinePieces` command, the commands are changed to its next usage (or to the end of the document). The command not only changes the pieces you may use within the `\pieces` command but also defines commands to be used within normal text, as the following example shows:

`\DefinePieces{wbn}{KQRBNP}{LRU}`
`\wDU\bKR\bWB`
 creates   

1.4.4 When writing books

`\develop` To simplify your writings you may use the macro `\develop`. This will create the following additional information during development:

- when you use `\label` in your diagrams the label will be shown at the left upper corner of the diagram.
- The given label will also be shown inside the solution and also in any register entry.
- when you have specified a `\judgement` this information will be put into the solution.

Most books on chessproblems contain registers for authors, sometimes also on themes and sources. As you already collect all these information very detailed within the `diagram` environment the generation of registers is very simple.

`\makeaindex` To create a registers of authors you need to put the `\makeaindex` command
`\authorindex` inside the preamble of your document. This instructs latex to write an intermediate file containing information about authors and the numbers of the diagrams.¹ After a first `LATEX` run on your document, you need to convert the intermediate file. This may be done with the `makeindex` program, which will typically called like

```
makeindex -o <filename>.and <filename>.adx
```

The resulting register may be put into your document using the `\authorindex` command.

`\makesindex` Like an index for authors you may also create indices for sources and/or
`\sourceindex` themes. For an source register you need to put `\makesindex` into your document
`\maketindex` preamble; for a theme register the command is `\maketindex`. The conversion
`\themeindex` commands for the intermediate files are

```
makeindex -o <filename>.snd <filename>.sdx
```

for the source register and

```
makeindex -o <filename>.tnd <filename>.tdx
```

for the theme register.

The source register is inserted into the text using `\sourceindex` and the theme register using `\themeindex`.

1.4.5 Other useful stuff

`\solpar` In some environments — like `window` — the use of `\par` leads to unwanted effects. Therefore we use the command `\solpar` inside the definition of `\@dia@solution`, which is used to display a single solution when using `\putsol`. You may use `\renewcommand{\solpar}` to provide another definition of `\solpar` in such situations.

2 The documentation driver

The following code will generate the documentation. Since it is the first piece of code in the file, the documentation can be obtained by simply processing the file with `LATEX 2ε`.

¹Normally registers contain page numbers but with chess problems normally people refer to the diagram numbers.

```

1 <(*driver)
2 \documentclass[a4paper]{article}
3 \usepackage{doc}
4 \usepackage{diagram}
5 \EnableCrossrefs
6 \CodelineIndex
7 \RecordChanges
8 \begin{document}
9 \DocInput{diagram.dtx}
10 \end{document}
11 </driver>

```

3 The implementation of the style

Specifies the preamble of our style file.

```

12 <(*style)
13 \ProvidesPackage{diagram}[2011/06/04]
14 \DeclareOption{10pt}{\AtBeginDocument{\diagramx}}
15 \DeclareOption{11pt}{\AtBeginDocument{\diagramxi}}
16 \DeclareOption{12pt}{\AtBeginDocument{\diagramxii}}
17 \ExecuteOptions{10pt}
18 \ProcessOptions
19 \RequirePackage{ifthen}
20 \RequirePackage{calc}

```

Now we declare some constants to unify its usage within the style file.

```

21 \chardef\f@ur=4
22 \chardef@ight=8
23 \newcount\elchfont
24
25 \chardef@pkelch=0
26 \chardef@fselch=1
27
28 \newcount\dia@type
29
30 \newif\if@textproblem\@textproblemfalse
31 \def\textproblem{\@textproblemtrue\let\dia@stipulation=\relax}
32
33 \newif\if@solafterdiagram\@solafterdiagramfalse
34 \def\solafterdiagram{\@solafterdiagramtrue\ignorespaces}
35
36 \newif\if@vframe\@vframetrue
37 \newif\if@hframe\@hframetrue
38 \newif\if@leaveOuter\@leaveOutertrue
39
40 \newif\if@shortform
41
42 \newif\ifspace@vertical
43 \def\spacehorizontal{\space@verticalfalse}
44
45 \newif\ifdi@no
46 \newcounter{board@nr}
47 % \newif\iffigcnt

```

```

48 \newboolean{piececounter}
49 \newcount\r@w
50 \newcount\lin@
51 \newcount\pl@ne
52 \newcount\current@plane
53
54 \newcount\w@cnt
55 \newcount\b@cnt
56 \newcount\n@cnt
57 \newboolean{showcity}
58 \setboolean{showcity}{false}
59 \newboolean{showacademictitle}
60 \setboolean{showacademictitle}{true}

```

We have counters for each color to count the pieces on the board.

```

61 \newboolean{cpd@checkPieceCounts}
62 \newcounter{cpd@defWhitePieces}
63 \newcounter{cpd@defBlackPieces}
64 \newcounter{cpd@defNeutralPieces}
65
66 \newcounter{cpd@whitePieces}
67 \newcounter{cpd@blackPieces}
68 \newcounter{cpd@neutralPieces}
69
70 \newcommand{\cpd@stepcounterWhite}{\stepcounter{cpd@whitePieces}}
71 \newcommand{\cpd@stepcounterBlack}{\stepcounter{cpd@blackPieces}}
72 \newcommand{\cpd@stepcounterNeutral}{\stepcounter{cpd@neutralPieces}}
73 \global\let\cpd@stepcounterPieces\relax
74
75 \newcount\help@a
76 \newcount\help@b
77
78 \newbox\dia@box
79 \newbox\@cnt@box
80 \newdimen\@cnt@wd
81 \newbox\@stip@box
82
83 \newdimen\topdist\topdist\z@
84 \newbox\@test@box
85 \newdimen\@test@dimen
86 \newif\if@left
87
88 \newcount\brd@ff
89
90 \newdimen\dia@lineskip
91
92 \newdimen\board@width
93 \newdimen\bd@width
94 \newdimen\head@width
95 \newdimen\sq@width
96
97 \newdimen\grid@width
98 \newdimen\inner@frame
99 \newdimen\outer@frame
100 \newdimen\space@frame

```

```

101 \newdimen\v@frame@dist
102 \newdimen\h@frame@dist
103 \newdimen\space@frame@dist
104 \newdimen\v@space@dist
105 \newdimen\h@space@dist
106
107 \newbox\square@box
108 \newbox\plane@box

```

We need a lot of token registers to register the information from within the `diagram` environment. These token registers are defined here. Initially each token register is defined to contain `\relax`, which serves as an *end-marker* when parsing lists.

```

109 \newtoks\typis@tk\typis@tk={\relax}
110 \newtoks\label@tk\label@tk={\relax}
111 \newtoks\sol@tk\sol@tk={\relax}
112 \newtoks\number@tk\number@tk={\relax}
113 \newtoks\aut@tk\aut@tk={\relax}
114 \newtoks\city@tk\city@tk={\relax}
115 \newtoks\sourcenr@tk\sourcenr@tk={\relax}
116 \newtoks\source@tk\source@tk={\relax}
117 \newtoks\day@tk\day@tk={\relax}
118 \newcount\from@month\from@month=\z@
119 \newcount\to@month\to@month=\z@
120 \newtoks\year@tk\year@tk={\relax}
121 \newtoks\issue@tk\issue@tk={\relax}
122 \newtoks\pages@tk\pages@tk={\relax}
123 \newtoks\tournament@tk\tournament@tk={\relax}
124 \newtoks\award@tk\award@tk={\relax}
125 \newtoks\after@tk\after@tk={\relax}
126 \newtoks\version@tk\version@tk={\relax}
127 \newtoks\correction@tk\correction@tk={\relax}
128 \newtoks\dedic@tk\dedic@tk={\relax}
129 \newtoks\fidealalbum@tk\fidealalbum@tk={\relax}
130 \newtoks\theme@tk\theme@tk={\relax}
131 \newtoks\twins@tk\twins@tk={\relax}
132 \newtoks\judgement@tk\judgement@tk={\relax}
133 \newtoks\comment@tk\comment@tk={\relax}
134 \newtoks\computer@tk\computer@tk={-}
135 \newtoks\nofields@tk\nofields@tk={\relax}
136 \newtoks\fieldframe@tk\fieldframe@tk={\relax}
137 \newtoks\gridlines@tk\gridlines@tk={\relax}
138 \newtoks\pieces@tk\pieces@tk={\relax}
139 \newtoks\fieldtext@tk\fieldtext@tk={\relax}
140 \newtoks\text@tk\text@tk={\relax}
141 \newtoks\stipulation@tk\stipulation@tk={\relax}
142 \newtoks\condition@tk\condition@tk={\relax}
143 \newtoks\remark@tk\remark@tk={\relax}

```

To remember, which information has been specified, we define `TEX`-booleans for each command.

```

144 \newif\if@label\@labelfalse
145 \newif\if@number\@numberfalse
146 \newif\if@special\@specialfalse
147 \newif\ifauth@r\auth@rfalse

```



```

148 \newif\if@city\@cityfalse
149 \newif\if@sourcenr\@sourcenrfalse
150 \newif\if@source\@sourcefalse
151 \newif\if@date\@datefalse
152 \newif\if@day\@dayfalse
153 \newif\if@year\@yearfalse
154 \newif\if@issue\@issuefalse
155 \newif\if@pages\@pagesfalse
156 \newif\if@tournament\@tournamentfalse
157 \newif\if@award\@awardfalse
158 \newif\if@after\@afterfalse
159 \newif\if@version\@versionfalse
160 \newif\if@correction\@correctionfalse
161 \newif\if@dedication\@dedicationfalse
162 \newif\if@fidealbum\@fidealbumfalse
163 \newif\if@twins\@twinsfalse
164 \newif\if@theme\@themefalse
165 \newif\if@computer\@computerfalse
166 \newif\if@judgement\@judgementfalse
167 \newif\if@comment\@commentfalse
168 \newif\if@pieces\@piecesfalse
169 \newif\if@fieldtext\@fieldtextfalse
170 \newif\if@nofields\@nofieldsfalse
171 \newif\if@gridlines\@gridlinesfalse
172 \newif\if@fieldframe\@fieldframefalse
173 \newif\if@stdgrid\@stdgridfalse
174 \newboolean{showcomputer}\setboolean{showcomputer}{true}%
175 \newcommand*{\computerproofedsymbol}{C+}
176 \newcommand*{\notcomputerproofedsymbol}{C-}
177 % \newif\if@show@computer\@show@computertrue
178 \newif\if@stipulation\@stipulationfalse
179 \newif\if@condition\@conditionfalse
180 \newif\if@remark\@remarkfalse
181 \newif\if@typis\@typisfalse
182 \newif\if@widedias\@widediasfalse
183 \newif\ifx@twins\x@twinsfalse
184 \newif\ifx@cond\x@condfalse
185 \newif\ifimitator\imitatorfalse
186 \newif\ifnormal@names\normal@namesfalse
187 \newif\ifs@lu
188 \newif\if@develop\@developfalse
189 \newif\if@notfirst
190 \newif\if@first

191 \newwrite\s@lfd
192 \let\below@newline=\relax
193 % These are used by the "old" board creating mechanism
194 \newcount\@lines
195 \newcount\@rows
196 \newcount\lines@max
197 \newcount\rows@max
198 \newcount\planes@max

```

The following counters are used when creating the diagram itself.

```

199 \newcounter{cpd@rowsmax}

```

```

200 \newcounter{cpd@linesmax}
201 \newcounter{cpd@current@row}
202 \newcounter{cpd@current@line}
203 \newcounter{cpd@maxsquare}
204 \newcounter{cpd@helper}
205 \newcounter{cpd@current@square@index}
206 \newcounter{cpd@current@square@value}

```

Some boolean T_EX-switches used whithin stereo- or spacechess diagrams.

```

207 \newif\if@stereo\@stereofalse
208 \newif\if@space\@spacefalse

```

These boolean switches are used to control the output of registers.

```

209 \newif\if@aindex\@aindexfalse
210 \newif\if@sindex\@sindexfalse
211 \newif\if@tindex\@tindexfalse
212 \newif\if@label

```

`\diagram` Defines the code executed in `\begin{diagram}`. In case no optional size is given,
`\@diagram` a normal 8×8 board is generated.

```

213 \def\diagram{%
214   \begingroup%
215   \@ifnextchar [{\@diagram}{\@diagram[\@ight x\@ight]]}%
216 }
217
218 \def\@diagram[#1x#2]{%
219   \lines@max=#1%
220   \rows@max=#2%
221   \setcounter{cpd@linesmax}{#1}%
222   \setcounter{cpd@rowsmax}{#2}%
223   \setcounter{cpd@maxsquare}{\value{cpd@rowsmax}*\value{cpd@linesmax}}%
224   \pl@ne=\z@%
225   \current@plane=\z@%
226   \let\put@sqs=\put@sqs@normal%
227   \let\read@plane=\read@plane@normal%
228   \@start@diagram%
229 }
230
231 \def\stereodiagram{%
232   \begingroup%
233   \@stereotrue%
234   \let\put@sqs=\put@sqs@stereo%
235   \let\read@plane=\read@plane@stereo%
236 }
237
238 \def\spacediagram{%
239   \begingroup%
240   \@spacetrue%
241   \@ifnextchar [{\@spacediagram}{\@spacediagram[5x5x5]]}%
242 }
243
244 \def\@spacediagram[#1x#2x#3]{%
245   \lines@max=#1%
246   \rows@max=#2%
247   \planes@max=#3%

```

```

247 \let\put@sqs=\put@sqs@space%
248 \let\read@plane=\read@plane@space%
249 \@start@diagram%
250 }
251 \def\@start@diagram{%
252 \init@vars%
253 \let\author=\ds@author%
254 \let\day=\ds@day%
255 \let\month=\ds@month%
256 \let\year=\ds@year%
257 \let\label=\ds@label%
258 \ignorespaces%
259 }
260
261 \def\showtypis#1{%
262 \@typisttrue%
263 \typis@tk={#1}%
264 \ignorespaces%
265 }
266
267 \def\enddiagram{%
268 \let\author=\orig@author%
269 \let\day=\orig@day%
270 \let\month=\orig@month%
271 \let\year=\orig@year%
272 \let\label=\orig@label%
273 \if@number%
274 \else%
275 \refstepcounter{board@nr}% so \label and \ref work properly
276 \fi%
277 %
278 % Now \label@tk should be set, if wanted, so
279 % we can generate the index entries
280 %
281 \@aindex%
282 \@sindex%
283 \@tindex%
284 %
285 % Now \@currentlabel will be set right, so we can use
286 % the original label
287 \if@label%
288 \expandafter\@set@label\the\label@tk;%
289 \fi%
290 %
291 % Now we know, if we have frames so we can setup our dimensions
292 %
293 \global\squarewidth=\fontdimen\tw@\chessfont%
294 \if@stereo%
295 \bd@width=\@ight\squarewidth%
296 \board@width=\@ight\squarewidth%
297 \ifdim\h@frame@dist<\squarewidth%
298 \h@frame@dist=\squarewidth%
299 \fi%
300 % We do already skip with \v@space@dist

```

```

301      % So we use the additional skip \space@frame@dist here
302      \v@frame@dist=\space@frame@dist%
303      \ifdim\space@frame>\outer@frame%
304          \outer@frame=\space@frame%
305      \fi%
306      \advance\bd@width\tw@\inner@frame%
307      \advance\board@width\tw@\inner@frame%
308      \advance\board@width\tw@\h@frame@dist%
309      \advance\board@width\tw@\outer@frame%
310  \else\if@space%
311      \ifdim\h@frame@dist<1.5\sq@width%
312          \h@frame@dist=1.5\sq@width%
313      \fi%
314      % We do already skip with \v@space@dist
315      % So we use the additional skip \space@frame@dist here
316      \v@frame@dist=\space@frame@dist%
317      \ifdim\space@frame>\outer@frame%
318          \outer@frame=\space@frame%
319      \fi%
320      \ifspace@vertical%
321          \bd@width=\lines@max\sq@width%
322          \board@width\bd@width%
323          \advance\bd@width\tw@\inner@frame%
324          \advance\board@width\tw@\inner@frame%
325          \advance\board@width\tw@\h@frame@dist%
326          \advance\board@width\tw@\outer@frame%
327      \else%
328          \bd@width=\lines@max\sq@width%
329          \advance\bd@width\tw@\inner@frame%
330          \ifdim\h@space@dist<1.5\sq@width%
331              \h@space@dist=1.5\sq@width%
332          \fi%
333          %\h@space@dist=0.7\sq@width%
334          % Now we can compute the width of the complete board
335          \board@width\bd@width%
336          \advance\board@width\h@space@dist%
337          \multiply\board@width\planes@max%
338          \advance\board@width\h@space@dist%
339          \advance\board@width\tw@\outer@frame%
340      \fi%
341  \else%
342      \bd@width=\lines@max\sq@width%
343      \ifnum\lines@max>\@ight%
344          % Make the board wider
345          \board@width=\lines@max\sq@width%
346      \else%
347          % Make a normal width
348          \board@width=\@ight\sq@width%
349      \fi%
350      \advance\bd@width\tw@\inner@frame%
351      \advance\board@width\tw@\inner@frame%
352      \advance\board@width\tw@\h@frame@dist%
353      \advance\board@width\tw@\outer@frame%
354  \fi\fi%

```

```

355 \if@widedias%
356 \head@width=\textwidth%
357 \else%
358 \head@width=\board@width%
359 \fi%
360 %
361 % Now we should build the diagram itself
362 %
363 \if@textproblem%
364 % Put the stipulation into the \sq@box
365 \setbox\sq@box=\hbox{\vbox to \board@width{\hsize\board@width%
366 \stipfont%
367 \raggedright%
368 \sloppy%
369 \the\stipulation@tk%
370 \vfil%
371 }}%
372 \else%
373 \put@sq% This builds up the \sq@box
374 % Check, if the given number of pieces is reached
375 \ifthenelse{\boolean{cpd@checkPieceCounts}}{%
376 \ifthenelse{\value{cpd@defWhitePieces}=\value{cpd@whitePieces}}{%
377 {\errmessage{Wrong number of white pieces}}%
378 \ifthenelse{\value{cpd@defBlackPieces}=\value{cpd@blackPieces}}{%
379 {\errmessage{Wrong number of black pieces}}%
380 \ifthenelse{\value{cpd@defNeutralPieces}=\value{cpd@neutralPieces}}{%
381 {\errmessage{Wrong number of neutral pieces}}%
382 }{}%
383 \fi%
384 %
385 \global\setbox\dia@box=\hbox{\vbox{%
386 \parindent\z@%
387 \parskip\z@%
388 \baselineskip11\p@\advance\baselineskip\dia@lineskip%
389 \hsize\head@width%
390 \centering%
391 % diagram header
392 \vskip\topdist%
393 \vbox{\hsize\board@width\hbox{%
394 \if@develop\if@label%
395 \noindent\raggedright\llap{\labelfont\the\label@tk\ }%
396 \fi\fi%
397 \vbox{%
398 \he@dpos\dia@above%
399 }%
400 }}%
401 \vskip\tw@\p@%
402 % diagram itself
403 \vtop{\hsize\board@width%
404 \hbox to \head@width{\hss\vbox{%
405 \hsize\board@width%
406 \if@textproblem%
407 \box\sq@box%
408 \else%

```

```

409         \outer@henbox{\box\square@box}%
410         \fi%
411     }\hss}%
412     % diagram trailer
413     \hbox to \head@width{\hss\vtop{%
414         \hsize\board@width%
415         \parskip\z@%
416         \raggedright%
417         \put@count%
418         \dia@below%
419     }\hss}%
420     }%
421 }}% End of \dia@box
422 \do@dia@job%
423 \endgroup%
424 }
425
426 \def\put@count{%
427     % First we build the box with the figure count
428     \ifthenelse{\boolean{showcomputer}}{OR\boolean{piececounter}}{%
429         \global\setbox\@cnt@box=\hbox{%
430             \stipfont%
431             \ifthenelse{\boolean{showcomputer}}{%
432                 \ \ \if@computer\computerproofedsymbol\else\notcomputerproofedsymbol\fi%
433             }{}%
434             \ifthenelse{\boolean{piececounter}}{%
435                 \ \ (\arabic{cpd@whitePieces}+\arabic{cpd@blackPieces}%
436                 \ifthenelse{\value{cpd@neutralPieces}>0}{+\arabic{cpd@neutralPieces}}{ })%
437             }{}%
438         }%
439         \@cnt@wd=\wd\@cnt@box%
440         \hangindent-\@cnt@wd%
441         \hangafter\m@ne%
442         \noindent%
443         \hbox to \z@{%
444             \hbox to \board@width{\hfil\unhbox\@cnt@box}\hskip -\board@width%
445         }%
446     }{}%
447 }
448
449 \let\endstereodiagram=\enddiagram
450 \let\endspacediagram=\enddiagram
451 \def\figurine{%
452     \beginngroup%
453     \init@vars%
454     \let\author=\ds@author%
455     \let\day=\ds@day%
456     \let\month=\ds@month%
457     \let\year=\ds@year%
458     \let\label=\ds@label%
459 }
460
461 \def\endfigurine{%
462     \let\author=\orig@author%

```

```

463 \let\day=\orig@day%
464 \let\month=\orig@month%
465 \let\year=\orig@year%
466 \let\label=\orig@label%
467 \if@number%
468 \else%
469 \refstepcounter{board@nr}% so \label and \ref work properly
470 \fi%
471 %
472 % Now \label@tk should be set, if wanted, so
473 % we can generate the index entries
474 %
475 \@aindex%
476 \@sindex%
477 \@tindex%
478 %
479 % Now \@currentlabel will be set right, so we can use
480 % the original label
481 %
482 \if@label%
483 \expandafter\@set@label\the\label@tk;%
484 \fi%
485 %
486 \@show@figurine%
487 \endgroup%
488 }
489 %
490 \gdef\selectelchfont#1{%
491 \global\elchfont\csname @#1elch\endcsname\defaultelchfont%
492 }

```

Here we define commands to change fonts used for text above and below the diagram. You may redefine to adjust the fonts to your needs.

```

\authorfont
\cityfont 493 \newcommand*{\authorfont}{\bfseries}
\sourcefont 494 \newcommand*{\cityfont}{\slshape}
\awardfont 495 \newcommand*{\sourcefont}{\bfseries\itshape}
\dedicfont 496 \newcommand*{\awardfont}{\itshape}
\stipfont 497 \newcommand*{\dedicfont}{\itshape}
\remfont 498 \newcommand*{\stipfont}{\rmfamily}
\labelfont 499 \newcommand*{\remfont}{\rmfamily}
\boardfont 500 \newcommand*{\labelfont}{\rmfamily}
501 \newcommand*{\boardfont}{\rmfamily}

```

We have three different default sizes for diagrams. The following commands switch fontsizes used for the chessfonts to typeset the diagrams.

```

\diagramx
\diagramxi 502 \newcommand*{\diagramx}{
\diagramxii 503 \ifcase\elchfont\relax%
504 \font\chessfont=pk1ch12
505 \font\chtextfont=pk1ch10
506 \else%
507 \font\chessfont=fs1ch12

```

```

508     \font\chtextfont=fselch10
509     \fi%
510     \dia@lineskip\z@
511     \dia@type\z@
512 }
513
514 \newcommand*\diagramxi{%
515     \ifcase\elchfont\relax%
516         \font\chessfont=pkelch14
517         \font\chtextfont=pkelch11
518     \else%
519         \font\chessfont=fselch14
520         \font\chtextfont=fselch11
521     \fi%
522     \dia@lineskip\@ne\p@
523     \dia@type\@ne
524 }
525
526 \newcommand*\diagramxii{%
527     \ifcase\elchfont\relax%
528         \font\chessfont=pkelch16
529         \font\chtextfont=pkelch12
530     \else%
531         \font\chessfont=fselch16
532         \font\chtextfont=fselch12
533     \fi%
534     \dia@lineskip\tw@\p@
535     \dia@type\tw@
536 }

```

`\defaultelchfont` `\defaultelchfont` is used to define the fontsize used to typeset the diagrams depending on the documentsize.

```

537 \def\defaultelchfont{%
538     \ifcase\@ptsize\relax%
539         \diagramx\or%
540         \diagramxi\or%
541         \diagramxii%
542     \fi%
543 }
544 \def\dianamestyle#1{\def\@dianame{\csname @#1\endcsname}}
545 \def\solnamestyle#1{\def\@solname{\csname @#1\endcsname}}
546 \def\diagramnum#1{\c@board@nr=#1\advance\c@board@nr\m@ne}

```

`\ra` Now we define a couple of abbreviations and special symbols often used when
`\lra` setting problem chess documents.

```

\rla 547 \def\ra{\mbox{$\rightarrow$}}
\lra 548 \def\lra{\mbox{$\leftrightharpoonup$}}
\set 549 \let\rla=\lra
\OO 550 \def\x{\mbox{\ifmmode\times\else$\times$\fi}}
\OOO 551 \def\set{\kern -.05em\raise .1ex\hbox{*}}
\any 552 \def\OO{0\raise.25ex\hbox{-}\kern -.1em\relax}
\OOO 553 \def\OO{\OO}
\OOO 554 \def\OOO{\OO\OO}

```



```

555 \def\any{\ifmmode\sim\else$\sim$\fi}
556 \def\further{\ifmmode\rightarrow\else$\rightarrow$\fi\ \ignorespaces}

557 \def\spacelayout#1{\csname space@#1\endcsname}
558 \def\nodiagnumbering{\global\di@nofalse}
559 \def\diagnumbering#1{%
560   \di@nottrue\diagnum{\@ne}%
561   \gdef\thediag{\csname @#1\endcsname\c@board@nr}%
562 }

```

\diagcenter The macros **\diagcenter**, **\diagleft** and **\diagright** simply define the macro **\he@dpos** to the corresponding paragraph alignment.

```

\diagleft \he@dpos{\centering}
\diagright 563 \def\diagcenter{\def\he@dpos{\centering}}
564 \def\diagleft{\def\he@dpos{\raggedright}}
565 \def\diagright{\def\he@dpos{\raggedleft}}

```

\setmonthstyle The implementation of **\setmonthstyle** does **\diagnumbering** define a command which uses the given parameter as a part of the command name.

```

566 \def\setmonthstyle#1{\def\write@month{\csname @#1\endcsname}}

567 \def\specialdiagnum#1{%
568   \@specialtrue%
569   \number@tk={#1}\@numbertrue\def\thediag{#1}\def\@currentlabel{#1}%
570   \ignorespaces%
571 }

```

\ds@label The macros **\ds@label** and **\ds@author** are defined internally and are made public within **\begin{diagram}**. This is because the macros **\label** and **\author** are normal L^AT_EX-macros and I want to avoid to redefine these globally.

```

572 \def\ds@label{%
573   \ifstar{\ds@labelfalse\ds@xlabel}{\ds@labeltrue\ds@xlabel}%
574 }
575 \def\ds@author#1{%
576   \aut@tk={#1}\auth@rtrue%
577   \ignorespaces%
578 }

```

\ds@academictitle

```

\Dr 579 \def\ds@academictitle#1{\ifthenelse{\boolean{showacademictitle}}{#1~}{\ignorespaces}
\Prof 580 \newcommand{\Dr}{\ds@academictitle{Dr.}}
\ProfDr 581 \newcommand{\Prof}{\ds@academictitle{Prof.}}
582 \newcommand{\ProfDr}{\ds@academictitle{Prof.\,Dr.}}

583 \def\city#1{%
584   \city@tk={#1}\@citytrue%
585   \ignorespaces%
586 }
587 \def\sourcenr#1{%
588   \sourcenr@tk={#1}\@sourcenrtrue%
589   \ignorespaces%
590 }
591 \def\source#1{%
592   \source@tk={#1}\@sourcetrue%
593   \ignorespaces%

```

```

594 }
595 \def\ds@day#1{%
596     \day@tk={#1}\@daytrue\@datetrue%
597     \ignorespaces%
598 }
599 \def\ds@month#1{%
600     \from@month=#1\@datetrue%
601     \ignorespaces%
602 }
603 \def\months#1{%
604     \@months#1;%
605     \ignorespaces%
606 }
607 \def\ds@year#1{%
608     \year@tk={#1}\@yeartrue\@datetrue%
609     \ignorespaces%
610 }
611 \def\issue#1{%
612     \issue@tk={#1}\@issuetrue%
613     \ignorespaces%
614 }
615 \def\pages#1{%
616     \pages@tk={#1}\@pagetrue%
617     \ignorespaces%
618 }
619 \def\tournament#1{%
620     \tournament@tk={#1}\@tournamenttrue%
621     \ignorespaces%
622 }
623 \def\award#1{%
624     \award@tk={#1}\@awardtrue%
625     \ignorespaces%
626 }
627 \def\version#1{%
628     \version@tk={#1}\@versiontrue%
629     \ignorespaces%
630 }
631 \def\after#1{%
632     \after@tk={#1}\@aftertrue%
633     \ignorespaces%
634 }
635 \def\correction#1{%
636     \correction@tk={#1}\@correctiontrue%
637     \ignorespaces%
638 }
639 \def\dedication#1{%
640     \dedic@tk={#1}\@dedicationtrue%
641     \ignorespaces%
642 }
643 \def\fidealbum#1{%
644     \fidealbum@tk={#1}\@fidealbumtrue%
645     \ignorespaces%
646 }
647 \def\pieces{%

```

```

648 \@ifnextchar[%
649 {\x@pieces}%
650 {\@pieces}%
651 }
652 \def\x@pieces[#1]{%
653 % We should parse the given piececounts
654 \setboolean{cpd@checkPieceCounts}{true}%
655 \@parseWhiteAndBlackCount#1+\e@list
656 \@pieces%
657 }
658 \def\@parseWhiteAndBlackCount#1+#2+{%
659 \setcounter{cpd@defWhitePieces}{#1}%
660 \setcounter{cpd@defBlackPieces}{#2}%
661 \futurelet\n@xt\cpd@checkNeutral%
662 }
663 \let\cpd@nextproc=\relax%
664 \def\cpd@checkNeutral{%
665 \if\n@xt\relax%
666 \let\cpd@nextproc=\relax%
667 \else%
668 \let\cpd@nextproc=\@parseNeutralCount%
669 \fi%
670 \cpd@nextproc%
671 }
672 \def\@parseNeutralCount#1+{%
673 \setcounter{cpd@defNeutralPieces}{#1}%
674 }
675 \def\@pieces#1{%
676 \pieces@tk={#1}\@piecestrue%
677 \ignorespaces%
678 }
679 \def\fieldtext#1{%
680 \fieldtext@tk={#1}\@fieldtexttrue%
681 \ignorespaces%
682 }
683 \def\nofields#1{%
684 \nofields@tk={#1}\@nofieldstrue%
685 \ignorespaces%
686 }
687 \let\nosquares\nofields
688 \def\gridlines#1{%
689 \gridlines@tk={#1}\@gridlinestrue%
690 \ignorespaces%
691 }
692 \def\fieldframe#1{%
693 \fieldframe@tk={#1}\@fieldframetrue%
694 \ignorespaces%
695 }
696 \def\stipulation#1{%
697 \stipulation@tk={#1}\@stipulationtrue%
698 \ignorespaces%
699 }
700 \def\condition{%
701 \ifstar\x@condtrue\@condition{\@condition}%

```

```

702 }
703 \def\@condition#1{%
704     \condition@tk={#1}\@conditiontrue%
705     \ignorespaces%
706 }
707 \def\twins{%
708     \@ifstar{\x@twinstrue\twins}{\@twins}%
709 }
710 \def\@twins#1{%
711     \twins@tk={#1}\@twinstrue%
712     \ignorespaces%
713 }
714 \def\remark#1{%
715     \remark@tk={#1}\@remarktrue%
716     \ignorespaces%
717 }
718 \def\Co#1{%
719     \ifx#1+\@computertrue\computer@tk={+}\fi%
720     \ignorespaces%
721 }
722 \long\def\solution#1{%
723     \sol@tk={#1}\global\s@luttrue%
724     \ignorespaces%
725 }
726 \def\themes#1{%
727     \theme@tk={#1}\@themetrue%
728     \ignorespaces%
729 }
730 \long\def\comment#1{%
731     \comment@tk={#1}\@commenttrue%
732     \ignorespaces%
733 }
734 \long\def\judgement#1{%
735     \judgement@tk={#1}\@judgementtrue%
736     \ignorespaces%
737 }
738 \def\noframe{%
739     \@vframefalse\@hframefalse%
740     \ignorespaces%
741 }
742 \def\noinnerframe{%
743     \@leaveOuterfalse\@vframefalse\@hframefalse%
744     \ignorespaces%
745 }
746 \def\verticalcylinder{%
747     \@vframefalse%
748     \ignorespaces%
749 }
750 \def\horizontalcylinder{%
751     \@hframefalse%
752     \ignorespaces%
753 }
754 \def\stdgrid{%
755     \@stdgridtrue%

```

```

756 \ignorespaces%
757 }

\gridchess Here we define some abbreviations and synonyms for other macros.
\magic 758 \let\gridchess=\stdgrid
\tourn 759 \let\magic=\fieldframe
\dedic 760 \let\tourn=\tournament
\stip 761 \let\dedic=\dedication
\cond 762 \let\stip=\stipulation
\rem 763 \let\cond=\condition
\sol 764 \let\rem=\remark
765 \let\sol=\solution

766 \def\develop{%
767 \@developtrue%
768 \ignorespaces%
769 }
770 \def\showcomputer{%
771 \setboolean{showcomputer}{true}%
772 \ignorespaces%
773 }
774 \def\nocomputer{%
775 \setboolean{showcomputer}{false}%
776 \ignorespaces%
777 }
778 \def\putsol{\immediate\closeout\s@lfd\input\jobname.sol\cl@arsol}
779 \def\widedias{\@widediastrue\diagcenter}
780 \def\nowidedias{\@widediasfalse}
781 \def\normalnames{\normal@namestrue}
782 \def\reversednames{\normal@namesfalse}
783 \def\makeaindex{%
784 \@dia@index%
785 \newindex[thediag]{author}{adx}{and}{Autorenverzeichnis}%
786 \@aindextrue\reversednames%
787 }
788
789 \def\makesindex{%
790 \@dia@index%
791 \newindex[thediag]{source}{sdx}{snd}{Quellenregister}%
792 \@sindextrue%
793 }
794
795 \def\maketindex{%
796 \@dia@index%
797 \newindex[thediag]{theme}{tdx}{tnd}{Themenregister}%
798 \@tindextrue%
799 }
800
801 \def\authorindex{\let\@idxitem\@aidxitem\printindex[author]}
802 \def\sourceindex{\printindex[source]}
803 \def\themeindex{\printindex[theme]}
804 \def\DefinePieces#1#2#3{%
805 \@setPieceColor#1\@setPieceSpec#2\@setPieceRotation#3%
806 \loop@rotation%

```

```

807 \expandafter\xdef\csname\ds@black\ds@white\ds@bishop\endcsname{%
808 \noexpand\ch@fig{20}%
809 }%
810 \expandafter\xdef\csname\ds@black\ds@black\ds@bishop\endcsname{%
811 \noexpand\ch@fig{32}%
812 }%
813 \expandafter\xdef\csname\ds@white F\endcsname{\chessfont\ }
814 \expandafter\xdef\csname\ds@black F\endcsname{\chessfont\char144}}
815 \expandafter\xdef\csname\ds@white Nr\endcsname{%
816 \noexpand\ch@fig{109}%
817 }%
818 \expandafter\xdef\csname\ds@neutral Nr\endcsname{%
819 \noexpand\ch@fig{115}%
820 }%
821 \expandafter\xdef\csname\ds@black Nr\endcsname{%
822 \noexpand\ch@fig{121}%
823 }%
824 \expandafter\xdef\csname\ds@white Gh\endcsname{%
825 \noexpand\ch@fig{112}%
826 }%
827 \expandafter\xdef\csname\ds@neutral Gh\endcsname{%
828 \noexpand\ch@fig{118}%
829 }%
830 \expandafter\xdef\csname\ds@black Gh\endcsname{%
831 \noexpand\ch@fig{124}%
832 }%
833 \expandafter\xdef\csname\ds@white C\endcsname{%
834 \noexpand\ch@fig{145}%
835 }%
836 \expandafter\xdef\csname\ds@neutral C\endcsname{%
837 \noexpand\ch@fig{151}%
838 }%
839 \expandafter\xdef\csname\ds@black C\endcsname{%
840 \noexpand\ch@fig{157}%
841 }%
842 }
843 \def\Imi{\ch@fig{157}}

```

\dia@above The content of the box above a diagram is controlled by the macro \dia@above. It just delegates the information to a couple of other macros, which then generate the displayed information above the diagram.

```

844 \def\dia@above{%
845 \dia@number%
846 \dia@authors%
847 \dia@city%
848 \dia@after%
849 \dia@version%
850 \dia@source%
851 \dia@correction%
852 \dia@tournament%
853 \dia@award%
854 \dia@dedic%
855 \dia@fidealbum%
856 }

```

`\dia@below` As before, the macro `\dia@below` creates the displayed information below the chessboard - forwarding to a couple of other macros.

```

857 \def\dia@below{%
858   \bgroup%
859   \if@stipulation%
860     \dia@stipulation%
861   \fi%
862   \ifx@cond\else%
863     \dia@condition%
864   \fi%
865   \ifx@twins\else%
866     \dia@twins%
867   \fi%
868   \dia@remark%
869   \if@solafterdiagram%
870     \below@newline%
871     \the\sol@tk%
872   \fi%
873   \noindent\hbox{}\newline\hbox{}\}%
874   \egroup%
875 }
```

`\dia@number` The `\dia@number` macro simply creates the diagram number in a single paragraph.

```

876 \def\dia@number{%
877   {\authorfont\thediag\par}%
878 }
```

`\dia@authors` This macro is used to create the list of authors specified within the `\author` macro inside the `diagram` environment. Depending on the `TeX`-boolean `normal@names` we either simply display the registered author or parse the list of authors by using the generic `\parseTokenList` macro.

```

879 \def\dia@authors{%
880   \ifauth@r%
881     \bgroup%
882     \authorfont%
883     \ifnormal@names%
884       \the\aut@tk%
885     \else%
886       {\def\name@sep{\par}%
887        \@notfirstfalse%
888        \let\@action=\dia@writename% Parse the list of authors
889        \@parseTokenlist\aut@tk;}
890     \fi%
891     \egroup%
892   \fi%
893 }

894 \def\@show@city#1;{\if@notfirst\ \slash\ \else\@notfirsttrue\fi#1}
895
896 \def\p@rsecity#1; {\@show@city#1;\l@klist}
897
898 \def\dia@city{%
```

```

899 \ifthenelse{\boolean{showcity}}{\fi%
900     \if@city%
901         \bgroup%
902         \cityfont\@notfirstfalse%
903         \let\@action=\p@rsecity\@parseTokenlist\city@tk;%
904         \par%
905         \egroup%
906     \fi%
907 }{\}%
908 }
909
910 \def\@dia@after{%
911     \if@after%
912         \bgroup%
913         \dedicfont\the\after@tk\par%
914         \egroup%
915     \fi%
916 }
917
918 \def\@dia@version{%
919     \if@version%
920         \bgroup%
921         \dedicfont\the\version@tk\par%
922         \egroup%
923     \fi%
924 }
925
926 \def\@dia@date{%
927     \ifnum\from@month>\z@%
928         \if@day%
929             \the\day@tk.\write@month\from@month%
930         \else%
931             \write@month\from@month%
932         \fi%
933     \ifnum\to@month>\z@--\write@month\to@month\fi%
934     \if@day.\else/\fi%
935     \fi%
936     \if@year\the\year@tk\fi%
937 }
938
939 \def\@dia@source{%
940     \if@source%
941         \bgroup%
942         \sourcefont%
943         \if@sourcenr\the\sourcenr@tk\ \fi
944         \the\source@tk%
945         \if@date\ \fi\@dia@date%
946         \if@issue\ \the\issue@tk\fi%
947         \if@pages ,\ \the\pages@tk\fi%
948         \par%
949         \egroup%
950     \else%
951         \if@tournament\else\if@date%
952             \bgroup%

```



```

953         \sourcefont%
954         \@dia@date%
955         \par%
956         \egroup%
957     \fi\fi%
958 \fi%
959 }
960
961 \def\@dia@correction{%
962     \if@correction%
963         \bgroup%
964         \dedicfont\the\correction@tk%
965         \par%
966         \egroup%
967     \fi%
968 }
969
970 \def\@dia@tournament{%
971     \if@tournament
972         \bgroup%
973         \awardfont%
974         \the\tournament@tk
975         \if@source\else\if@date%
976             \ \ \@dia@date%
977         \fi\fi%
978         \par%
979         \egroup%
980     \fi%
981 }
982
983 \def\@dia@award{%
984     \if@award%
985         \bgroup%
986         \awardfont\the\award@tk%
987         \par%
988         \egroup%
989     \fi%
990 }
991
992 \def\@dia@dedic{%
993     \if@dedication%
994         \bgroup%
995         \dedicfont\the\dedic@tk%
996         \par%
997         \egroup%
998     \fi%
999 }
1000
1001 \def\@show@album#1/#2;{#1 FIDE-Album #2}
1002
1003 \def\@dia@fidealalbum{%
1004     \if@fidealalbum%
1005         \expandafter\@show@album\the\fidealalbum@tk;%
1006         \par%

```

```

1007   }\fi%
1008 }
1009
1010 \def\@twinskip{\ \ }
1011
1012 \def\@dia@stipulation{%
1013   \if@stipulation%
1014     \bgroup%
1015     \stipfont%
1016     \the\stipulation@tk%
1017     \ifx@twins%
1018       \let\below@newline\@twinskip%
1019       \@dia@twins%
1020     \else\ifx@cond%
1021       \let\below@newline\@twinskip%
1022       \@dia@condition%
1023     \fi\fi%
1024     \egroup%
1025     \let\below@newline\newline%
1026   \else%
1027     \x@twinsfalse%
1028     \x@condfalse%
1029     \let\below@newline\relax%
1030   \fi%
1031 }
1032
1033 \def\x@write@twin#1; {%
1034   \hskip1em#1%
1035   \@lefttrue\let\below@newline\newline%
1036   \let\@action\write@twins%
1037   \l@klist%
1038 }
1039
1040 \def\write@twins#1; {%
1041   \setbox\@test@box=\hbox{#1\if@left~~\fi}%
1042   \ifdim\wd\@test@box>4\sq@width%
1043     \below@newline%
1044     \@lefttrue%
1045     #1%
1046   \else%
1047     \if@left%
1048       \below@newline%
1049     \fi%
1050     \noindent\hbox to 4\sq@width{#1\hfil}%
1051     \if@left%
1052       \@leftfalse%
1053     \else%
1054       \@lefttrue%
1055     \fi%
1056   \fi%
1057   \let\below@newline\newline%
1058   \l@klist%
1059 }
1060

```

```

1061 \def\@dia@twins{%
1062   \if@twins%
1063     \bgroup%
1064     \@lefttrue%
1065     \remfont%
1066     \ifx@twins%
1067       \let\@action=\x@write@twin%
1068     \else%
1069       \let\@action=\write@twins%
1070     \fi%
1071     \@parseTokenlist\twins@tk;%
1072     \egroup%
1073     \let\below@newline\newline%
1074   \fi%
1075 }
1076
1077 \def\@dia@condition{%
1078   \if@condition%
1079     \bgroup%
1080     \@lefttrue%
1081     \remfont%
1082     \ifx@cond%
1083       \let\@action=\x@write@twin%
1084     \else%
1085       \let\@action=\write@twins%
1086     \fi%
1087     \@parseTokenlist\condition@tk;%
1088     \egroup%
1089     \let\below@newline\newline%
1090   \fi%
1091 }
1092
1093 \def\@dia@remark{%
1094   \if@remark%
1095     \bgroup%
1096     \@lefttrue%
1097     \remfont\let\@action=\write@twins%
1098     \@parseTokenlist\remark@tk;%
1099     \egroup%
1100     \let\below@newline\newline%
1101   \fi%
1102 }
1103
1104 \def\parse@params#1{%
1105   \ifcase\help@a\relax
1106     \label@tk={#1}\ifx\relax#1\else\@labeltrue\fi\or%
1107     \number@tk={#1}\ifx\relax#1\else\@numbertrue\fi\or%
1108     \aut@tk={#1}\ifx\relax#1\else\auth@rtrue\fi\or%
1109     \city@tk={#1}\ifx\relax#1\else\@citytrue\fi\or%
1110     \sourcenr@tk={#1}\ifx\relax#1\else\@sourcenrtrue\fi\or%
1111     \source@tk={#1}\ifx\relax#1\else\@sourcetrue\fi\or%
1112     \day@tk={#1}\ifx\relax#1\else\@daytrue\fi\or%
1113     \from@month=#1\or%
1114     \to@month=#1\or%

```

```

1115 \year@tk={#1}\ifx\relax#1\else\@yeartrue\fi\or%
1116 \issue@tk={#1}\ifx\relax#1\else\@issuetrue\fi\or%
1117 \pages@tk={#1}\ifx\relax#1\else\@pagetrue\fi\or%
1118 \tournament@tk={#1}\ifx\relax#1\else\@tournamenttrue\fi\or%
1119 \award@tk={#1}\ifx\relax#1\else\@awardtrue\fi\or%
1120 \after@tk={#1}\ifx\relax#1\else\@aftertrue\fi\or%
1121 \version@tk={#1}\ifx\relax#1\else\@versiontrue\fi\or%
1122 \correction@tk={#1}\ifx\relax#1\else\@correctiontrue\fi\or%
1123 \dedic@tk={#1}\ifx\relax#1\else\@dedicationtrue\fi\or%
1124 \theme@tk={#1}\ifx\relax#1\else\@themetrue\fi\or%
1125 \twins@tk={#1}\ifx\relax#1\else\@twinstrue\fi\or%
1126 \computer@tk={#1}\or%
1127 \comment@tk={#1}\ifx\relax#1\else\@commenttrue\fi\or%
1128 \judgement@tk={#1}\ifx\relax#1\else\@judgementtrue\fi\or%
1129 \sol@tk={#1}%
1130 \fi%
1131 \advance\help@a \one%
1132 \l@@klist%
1133 }
1134
1135 \def\split@param#1{%
1136 \@labelfalse\@numberfalse\auth@rfalse\@cityfalse%
1137 \@sourcetruefalse\@sourcefalse\@dayfalse\@yearfalse%
1138 \@issuefalse\@pagesfalse\@tournamentfalse\@awardfalse%
1139 \@afterfalse\@versionfalse\@correctionfalse\@dedicationfalse%
1140 \@themefalse\@twinsfalse\@commentfalse\@judgementfalse%
1141 \help@a=\z%
1142 \let\@action=\parse@params\l@@klist#1\@list%
1143 }
1144 \newcommand{\solpar}{\par}
1145 \def\@dia@solution{%
1146 \bgroup%
1147 \parindent\z%
1148 \parskip\tw@p%
1149 {\bfseries%
1150 \noindent\if@label\showlabel{\the\label@tk}\fi%
1151 \the\number@tk) %
1152 \ifauth@r%
1153 \ifnormal@names%
1154 \the\aut@tk%
1155 \else%
1156 {\@notfirstfalse% We are the first one
1157 \def\name@sep{,}%
1158 \let\@action=\@sol@writename%
1159 \@parseTokenlist\aut@tk;}%
1160 \fi%
1161 \newline%
1162 \fi%
1163 }%
1164 \if@develop\if@judgement\the\judgement@tk\solpar\fi\fi%
1165 \the\sol@tk\solpar%
1166 \if@comment\the\comment@tk\solpar\fi%
1167 \egroup%
1168 }

```

```

1169 \grid@width=0.6\p@
1170 \inner@frame=0.6\p@
1171 \outer@frame=1.2\p@
1172 \space@frame=\outer@frame
1173 \v@frame@dist=\tw@\p@%
1174 \h@frame@dist=\tw@\p@%
1175 \space@frame@dist=\z@
1176 \v@space@dist=1em
1177 \def\@show@figurine{%
1178     \noindent%
1179     \@figurine@number%
1180     \@figurine@author%
1181     \@figurine@city%
1182     \@figurine@after%
1183     \@figurine@correction%
1184     \@figurine@version%
1185     \@figurine@source%
1186     \@figurine@tournament%
1187     \@figurine@award%
1188     \@figurine@dedic%
1189     \@figurine@pieces%
1190     \@figurine@stip%
1191     \@figurine@twins%
1192     \@figurine@conditions%
1193     \@figurine@remarks%
1194     \@figurine@computer%
1195 }
1196 \def\@figurine@number{{\authorfont\thediag}}
1197
1198 \def\p@rseauthor@figurine#1,#2; {%
1199     \if@notfirst, \else\@notfirsttrue\fi#2 #1%
1200     \l@tklist%
1201 }
1202
1203 \def\@figurine@author{%
1204     {\ifauth@r%
1205         \authorfont\@notfirstfalse%
1206         \let\@action=\p@rseauthor@figurine%
1207         \@parseTokenlist\aut@tk;%
1208         \ \ %
1209     \fi}%
1210 }
1211
1212 \def\@figurine@city{%
1213     {\if@city%
1214         \cityfont\@notfirstfalse%
1215         \let\@action=\p@rsecity\@parseTokenlist\city@tk;%
1216         \ \ \ %
1217     \fi}%
1218 }
1219
1220 \def\@figurine@after{\if@after{\dedicfont\ \ \the\after@tk}\fi}
1221
1222 \def\@figurine@correction{%

```

```

1223 \if@correction{\dedicfont\ \ \the\correction@tk}\fi%
1224 }
1225
1226 \def\@figurine@version{%
1227 \if@version{\dedicfont\ \ \the\version@tk}\fi%
1228 }
1229
1230 \def\@figurine@source{%
1231 {\if@source%
1232 \sourcefont%
1233 \if@sourcenr\the\sourcenr@tk\ \fi%
1234 \the\source@tk%
1235 \if@year%
1236 \ \ %
1237 \if@day%
1238 \ifnum\from@month>\z@%
1239 \the\day@tk.%
1240 \write@month\from@month%
1241 \ifnum\to@month>\z@%
1242 -\write@month\to@month%
1243 \fi%
1244 .%
1245 \fi%
1246 \else%
1247 \write@month\the\from@month%
1248 \ifnum\to@month>\z@%
1249 -\write@month\the\to@month%
1250 \fi%
1251 /%
1252 \fi%
1253 \the\year@tk%
1254 \fi%
1255 \if@issue , \the\issue@tk\fi%
1256 \if@pages , \the\pages@tk\fi%
1257 \fi}%
1258 }
1259
1260 \def\@figurine@tournament{%
1261 \if@tournament{\awardfont\ \ \the\tournament@tk}\fi%
1262 }
1263
1264 \def\@figurine@award{%
1265 \if@award{\awardfont\ \ \the\award@tk}\fi%
1266 }
1267
1268 \def\@figurine@dedic{%
1269 \if@dedication{\awardfont\ \ \the\dedic@tk}\fi%
1270 }
1271 \def\show@squares#1\@list{\ch@fig{\the\help@a}#1, }
1272
1273 \def\@figurine@pieces{%
1274 {\if@pieces%
1275 \let\@action=\p@rsepieces%
1276 \let\piece@job\show@squares%

```

```

1277     \@parseTokenlist\pieces@tk,%
1278     \fi}%
1279 }
1280 \def\@figurine@stip{%
1281     \if@stipulation{\stipfont\ \ \the\stipulation@tk}\fi%
1282 }
1283
1284 \def\@figurine@conditions{%
1285     \if@condition{\remfont\ \ \the\condition@tk}\fi%
1286 }
1287
1288 \def\@figurine@twins{%
1289     \if@twins{\remfont\ \ \the\twins@tk}\fi%
1290 }
1291
1292 \def\@figurine@computer{%
1293     \ifthenelse{\boolean{showcomputer}}{%
1294         \if@computer\ \computerproofedsymbol\fi%
1295     }{}%
1296 }
1297
1298 \def\@figurine@remarks{%
1299     \if@remark{\stipfont\ \ \the\remark@tk}\fi%
1300 }
1301 \def\do@dia@job{\@write@sol\ifvmode\noindent\fi\unhbox\dia@box}
1302 \def\solhead#1{\split@param{#1}\@dia@solution}}
1303 \def\@write@sol{%
1304     \ifs@lu%
1305         \immediate\write\s@lfd{%
1306             \noexpand\solhead{%
1307                 {\the\label@tk}%
1308                 {\thediag}%
1309                 {\the\aut@tk}%
1310                 {\the\city@tk}%
1311                 {\the\sourcenr@tk}%
1312                 {\the\source@tk}%
1313                 {\the\day@tk}%
1314                 {\the\from@month}%
1315                 {\the\to@month}%
1316                 {\the\year@tk}%
1317                 {\the\issue@tk}%
1318                 {\the\pages@tk}%
1319                 {\the\tournament@tk}%
1320                 {\the\award@tk}%
1321                 {\the\after@tk}%
1322                 {\the\version@tk}%
1323                 {\the\correction@tk}%
1324                 {\the\dedic@tk}%
1325                 {\the\theme@tk}%
1326                 {\the\twins@tk}%
1327                 {\the\computer@tk}%
1328                 {\the\comment@tk}%
1329                 {\the\judgement@tk}%
1330                 {\the\sol@tk}%

```

```

1331         } %end of \solhead
1332     }%
1333     \fi
1334 }
1335 \def \@months#1-#2;{\from@month=#1\to@month=#2\@datetrue}
1336 \def \@dia@writename#1; {\sep@names@dianame#1; \l@@klist}
1337 \def \@sol@writename#1; {\sep@names@dianame#1; \l@@klist}
1338 \def \name@sep{, \ }
1339 \def \sep@names{\if@notfirst\name@sep\else\@notfirsttrue\fi}
1340 \def \@checkshort#1/#2#3;{%
1341     \@shortformtrue%
1342     \ifx#2\e@list\relax%
1343         \@shortformfalse%
1344     \fi%
1345 }
1346 \def \short@christian#1#2-{\%
1347     \if@notfirst -\else\@notfirsttrue\fi%
1348     #1.%
1349     \l@@klist%
1350 }
1351
1352 \def \@write@christian#1/#2;{#1}
1353
1354 \def \write@christian#1;{%
1355     \@checkshort#1/\e@list;%
1356     \if@shortform\@write@christian#1;\else#1\fi%
1357 }
1358
1359 \def \@write@short#1/#2;{#2}
1360
1361 \def \write@short#1;{%
1362     \@checkshort#1/\e@list;%
1363     \if@shortform%
1364         \@write@short#1;%
1365     \else%
1366         {\@notfirstfalse\let\@action\short@christian\l@@klist#1-\e@list}%
1367     \fi%
1368 }
1369 \def \@fullname#1, #2; {\hbox{\write@christian#2; #1}}
1370 \def \@surname#1, #2; {#1}
1371 \def \@short#1, #2; {\write@short#2;\ #1}
1372 \def \@noname#1, #2; {}
1373 \def \@normalname#1; {#1}
1374 \def \space@vertical{\space@verticaltrue}
1375 \def \space@horizontal{\space@verticalfalse}
1376 \def \cl@arsol{\immediate\openout\s@lfd=jobname.sol}
1377 \def \getc@lor#1{%
1378     \if#1\ds@white%
1379         \help@a\z@\global%
1380         \let\cpd@stepcounterPieces\cpd@stepcounterWhite%
1381     \else\if#1\ds@neutral%
1382         \help@a=6\global%
1383         \let\cpd@stepcounterPieces\cpd@stepcounterNeutral%
1384     \else\if#1\ds@black%

```



```

1385     \help@a=12\global%
1386     \let\cpd@stepcounterPieces\cpd@stepcounterBlack%
1387     \else\errmessage{invalid color!}%
1388     \fi\fi\fi%
1389     \getpi@ce%
1390 }
1391
1392 \def\get@text#1{\text@tk={#1}\read@square}
1393
1394 \def\getpi@ce#1{\if#1B\relax\else
1395   \if#1\ds@knight\advance\help@a\@ne%
1396   \else\if#1\ds@bishop\advance\help@a\tw@%
1397   \else\if#1\ds@rook\advance\help@a\thr@@%
1398   \else\if#1\ds@queen\advance\help@a\four%
1399   \else\if#1\ds@king\advance\help@a 5%
1400   \else\if#1C%
1401     % An imitator should not count for any color.
1402     \let\cpd@stepcounterPieces\relax
1403     \advance\help@a 145%
1404   \else%
1405     \errmessage{invalid piece!}%
1406   \fi\fi\fi\fi\fi\fi\fi%
1407   \futurelet\r@tate\chkr@tate%
1408 }
1409
1410 \def\chkr@tate{%
1411   \if\r@tate \ds@upside\advance\help@a 108\let\nextpr@c=\skipr@t\else%
1412   \if\r@tate \ds@left\advance\help@a 36\let\nextpr@c=\skipr@t\else%
1413   \if\r@tate \ds@right\advance\help@a 72\let\nextpr@c=\skipr@t\else%
1414   \let\nextpr@c\piece@job\fi\fi\fi\nextpr@c%
1415 }
1416 \def\skipr@t#1{\piece@job}
1417 \def\l@k{\futurelet\whatsnext\parsefi@lds}
1418 \def\parsefi@lds{%
1419   \if\whatsnext\@e@list%
1420     \let\nextpr@c\relax%
1421   \else
1422     \let\nextpr@c\read@square%
1423   \fi%
1424   \nextpr@c%
1425 }
1426
1427 \def\set@current@square@index#1#2{%
1428   \setcounter{cpd@current@square@index}{#1+\value{cpd@linesmax}*#2}%
1429 }
1430 \def\set@current@square@value#1{%
1431   \expandafter%
1432   \xdef\csname cpd@square@\roman{cpd@current@square@index}\endcsname{#1}%
1433 }
1434 \def\get@current@square@value{%
1435   \setcounter{cpd@current@square@value}%
1436   {\csname cpd@square@\roman{cpd@current@square@index}\endcsname}%
1437 }
1438 \def\set@piece{%

```

```

1439 \ifnum\pl@ne=\current@plane%
1440 \cpd@stepcounterPieces%
1441 \set@current@square@index\lin@\r@w%
1442 \get@current@square@value%
1443 \ifthenelse{\value{cpd@current@square@value}=\m@ne}
1444 {\set@current@square@value{\the\help@a}}%
1445 {\ifthenelse{\value{cpd@current@square@value}=144}%
1446 {\set@current@square@value{\the\help@a+18}}%
1447 {\errmessage{Trying to set a piece to an occupied square}}}%
1448 \fi%
1449 \l@@k%
1450 }
1451 \def\set@nofield, {%
1452 \ifnum\pl@ne=\current@plane%
1453 \set@current@square@index\lin@\r@w%
1454 \get@current@square@value%
1455 \ifthenelse{\value{cpd@current@square@value}=\m@ne}%
1456 {}% This is an empty white square, nothing to do
1457 {\ifthenelse{\value{cpd@current@square@value}=144}%
1458 {\set@current@square@value{\m@ne}}%
1459 {\errmessage{Trying to set a piece to an occupied square}}}%
1460 \fi%
1461 \l@@klist%
1462 }
1463 \def\set@frame, {%
1464 \ifnum\pl@ne=\current@plane%
1465 \@vGrid{\the\lin@}{\the\r@w}\@ne%
1466 \@hGrid{\the\lin@}{\the\r@w}\@ne%
1467 \advance\lin@\@ne%
1468 \@vGrid{\the\lin@}{\the\r@w}\@ne%
1469 \advance\lin@\m@ne\advance\r@w\@ne%
1470 \@hGrid{\the\lin@}{\the\r@w}\@ne%
1471 \fi%
1472 \l@@klist%
1473 }
1474 \def\e@list{\relax}
1475 \def\l@@klist{\futurelet\nextlist\ch@ccklist}
1476 \def\ch@ccklist{%
1477 \ifx\nextlist\e@list%
1478 \let\nextpr@c=\relax%
1479 \else%
1480 \let\nextpr@c=@action%
1481 \fi%
1482 \nextpr@c%
1483 }
1484 \def\p@rsepieces#1, {\getc@lor#1\e@list\l@@klist}
1485 \def\p@rsetext#1, {\get@text#1\e@list\l@@klist}
1486 \def\set@text{%
1487 \ifnum\pl@ne=\current@plane%
1488 \raise\r@w\squarewidth\hbox to \z@{%
1489 \hskip\lin@\squarewidth%
1490 \vbox to \squarewidth{\vss%
1491 \hbox to \squarewidth{%
1492 \hss%

```

```

1493         {\the\text@tk}%
1494         \hss%
1495     }\vss}%
1496     \hss%
1497 }%
1498 \fi%
1499 \l@@klist%
1500 }
1501 \def\p@rseauthor#1; {\sh@wauthor#1;\l@@klist}
1502 \def\read@square#1#2{%
1503     \lin@=#1\advance\lin@ by -'a\relax%
1504     \r@w=#2\advance\r@w by \m@ne%
1505     \read@plane%
1506 }
1507 \def\read@plane@normal{\plane@job}
1508
1509 \def\read@plane@stereo{\futurelet\plane@char\get@plane@stereo}
1510
1511 \def\get@plane@stereo{%
1512     \if\plane@char A%
1513         \pl@ne=\@ne\advance\r@w-\tw@\advance\lin@-\tw@%
1514         \let\@plane@job=\skip@plane%
1515     \else\if\plane@char B%
1516         \pl@ne=\tw@\advance\r@w-\tw@\advance\lin@-\tw@%
1517         \let\@plane@job=\skip@plane%
1518     \else\if\plane@char C%
1519         \pl@ne=\thr@@\advance\r@w-\tw@\advance\lin@-\tw@%
1520         \let\@plane@job=\skip@plane%
1521     \else\if\plane@char D%
1522         \pl@ne=\four\advance\r@w-\tw@\advance\lin@-\tw@%
1523         \let\@plane@job=\skip@plane%
1524     \else%
1525         \pl@ne=\z@\let\@plane@job=\plane@job%
1526     \fi\fi\fi\fi%
1527     \@plane@job%
1528 }
1529
1530 \def\skip@plane#1{\plane@job}
1531
1532 \def\read@plane@space#1{\pl@ne=#1\advance\pl@ne by -'A\relax\plane@job}
1533 \def\@vGrid#1#2#3{%
1534     \raise#2\sq@width\hbox to \z@{%
1535         \hskip#1\sq@width\hskip-.5\grid@width%
1536         \vrule height#3\sq@width width\grid@width\hss%
1537     }%
1538 }
1539
1540 \def\@hGrid#1#2#3{%
1541     \raise#2\sq@width\hbox to \z@{%
1542         \hskip#1\sq@width%
1543         \vrule width#3\sq@width height .5\grid@width depth%
1544         .5\grid@width\hss%
1545     }%
1546 }

```

```

1547 \def\@selGrid#1#2, {%
1548     \ifnum\plane=\current@plane%
1549         \if#1h%
1550             \@hGrid#2%
1551         \else\if#1v%
1552             \@vGrid#2%
1553         \else%
1554             \errmessage{Wrong GridSelector #1}%
1555         \fi\fi%
1556     \fi%
1557     \l@@klist%
1558 }
1559 \def\@stdgrid{%
1560     \setbox\plane@box=\vbox{\hbox{%
1561         \help@a=\tw@%
1562         \loop%
1563             \ifnum\help@a<\lines@max%
1564                 \@vGrid{\the\help@a}{\the\rows@max}%
1565                 \advance\help@a\tw@%
1566             \repeat%
1567             \help@a=\tw@%
1568             \loop%
1569                 \ifnum\help@a<\rows@max%
1570                     \@hGrid{0}{\the\help@a}{\the\lines@max}%
1571                     \advance\help@a\tw@%
1572                 \repeat%
1573             \box\plane@box
1574     }}%
1575 }
1576 \def\ds@xlabel#1{%
1577     \label@tk={#1}\@labeltrue%
1578 }
1579
1580 \def\@set@label#1;{\ifds@label\label{#1}\fi}
1581 \def\@init@vars{%
1582     \global\s@lufalse
1583     \setboolean{cpd@checkPieceCounts}{false}%
1584     \setcounter{cpd@defWhitePieces}{\z@}%
1585     \setcounter{cpd@defBlackPieces}{\z@}%
1586     \setcounter{cpd@defNeutralPieces}{\z@}%
1587     \setcounter{cpd@whitePieces}{\z@}%
1588     \setcounter{cpd@blackPieces}{\z@}%
1589     \setcounter{cpd@neutralPieces}{\z@}%
1590     \lin@\z@
1591 }
1592
1593 \def\clear@board{%
1594     % Now the new style
1595     \setcounter{cpd@current@row}{0}%
1596     \whiledo{\value{cpd@current@row}<\value{cpd@rowsmax}}{%
1597         \setcounter{cpd@current@line}{0}%
1598         \whiledo{\value{cpd@current@line}<\value{cpd@linesmax}}{%
1599             \set@current@square@index{\value{cpd@current@line}}{\value{cpd@current@row}}%
1600             \setcounter{cpd@helper}{\the\current@plane+\value{cpd@current@line}+\value{cpd@current@row}}%

```

```

1601         \ifthenelse{\isodd{\value{cpd@helper}}}%
1602         {\set@current@square@value{-1}}%
1603         {\set@current@square@value{144}}%
1604         \addtocounter{cpd@current@line}{\@ne}%
1605     }%
1606     \addtocounter{cpd@current@row}{\@ne}%
1607 }%
1608 }
1609
1610 \def\put@row#1{%
1611     \lin@{z}%
1612     \help@b=#1%
1613     \advance\help@b\brd@ff%
1614     \hbox{%
1615         \if@stereo%
1616             \ifnum\current@plane>z%
1617                 \ifnum\@rows=12%
1618                     \llap{\raise .5\sq@width\hbox{\boardfont c6\ }}%
1619                 \fi%
1620             \fi%
1621         \fi%
1622         \hbox to \z@{\vbox to \sq@width{}}%
1623         \set@current@square@index{\lin@}{#1}%
1624         \loop%
1625             \get@current@square@value%
1626             \ifthenelse{\value{cpd@current@square@value}=\m@ne}%
1627             {\wF}%
1628             {\char\value{cpd@current@square@value}}%
1629             % \ifnum\count\help@b=\m@ne\wF%
1630             % \else\char\count\help@b\fi%
1631             \advance\lin@\@ne%
1632             \addtocounter{cpd@current@square@index}{1}%
1633             % \advance\help@b\@ne%
1634             \ifnum\lin@<\lines@max\repeat%
1635         }%
1636 }
1637 \def\put@line#1{%
1638     \lin@{z}%
1639     \help@b=#1%
1640     \advance\help@b\brd@ff%
1641     \hbox{%
1642         \if@stereo%
1643             \ifnum\current@plane>z%
1644                 \ifnum\@rows=12%
1645                     \llap{\raise .5\sq@width\hbox{\boardfont c6\ }}%
1646                 \fi%
1647             \fi%
1648         \fi%
1649         \hbox to \z@{\vbox to \sq@width{}}%
1650         \loop%
1651             \ifnum\count\help@b=\m@ne\wF%
1652             \else\char\count\help@b\fi%
1653             \advance\lin@\@ne\advance\help@b\@ne%
1654             \ifnum\lin@<\lines@max\repeat%

```

```

1655 }%
1656 }
1657 \def\@parseTokenlist#1#2{\expandafter\l@tklist\the#1#2 \e@list}
1658 \def\@addToPlane#1{%
1659   \setbox\plane@box=\vbox{\hbox{%
1660     \@parseTokenlist#1,%
1661     \box\plane@box%
1662   }}%
1663 }
1664 \def\put@plane{%
1665   % We might want gridchess
1666   \if@stdgrid%
1667     \@stdgrid%
1668   \fi%
1669   % Let us first set the fieldframes
1670   \if@fieldframe%
1671     \let\@action\read@square%
1672     \let\plane@job\set@frame%
1673     \@addToPlane\fieldframe@tk%
1674   \fi%
1675   % Now we set text to all squares which are given using \fieldtext
1676   \if@fieldtext%
1677     \let\@action\p@rsettext%
1678     \let\plane@job\set@text%
1679     \@addToPlane\fieldtext@tk%
1680   \fi%
1681   % Then we should add the gridlines
1682   \if@gridlines%
1683     \let\@action\read@plane%
1684     \let\plane@job\@selGrid%
1685     \@addToPlane\gridlines@tk%
1686   \else%
1687     \if@stereo%
1688       \stereo@center%
1689     \fi%
1690   \fi%
1691   % Now we should clear the board
1692   \clear@board%
1693   % Let us now parse the list of pieces
1694   \if@pieces%
1695     \let\@action\p@rsepieces%
1696     \let\piece@job\l@tk\let\plane@job\set@piece%
1697     \@parseTokenlist\pieces@tk,%
1698   \fi%
1699   % Now we clear all fields, which are given using \nofields
1700   \if@nofields%
1701     \let\@action\read@square%
1702     \let\plane@job\set@nofield%
1703     \@parseTokenlist\nofields@tk,%
1704   \fi%
1705   % Now we can put the pieces to the board
1706   \global\setbox\plane@box=\hbox{%
1707     \vbox{\rlap{\box\plane@box}}%
1708     \vbox{%

```

```

1709         \chessfont%
1710         \baselineskip=\z@\lineskip=\z@%
1711         \@rows=\rows@max%
1712         % \multiply\@rows by \lines@max%
1713         \loop%
1714             % \advance\@rows -\lines@max%
1715             % \put@line\@rows%
1716             % Remove \put@line in future versions
1717             \advance\@rows \m@ne%
1718             \put@row\@rows%
1719         \ifnum\@rows>\z@\repeat%
1720     }%
1721 }%
1722 }
1723 \def\put@sqs@normal{%
1724     \put@plane%
1725     \setbox\sq@box=\hbox{%
1726         \inner@henbox{\box\plane@box}%
1727     }%
1728 }
1729 \def\put@sqs@stereo{%
1730     \setbox\sq@box=\hbox{\hfil\vbox{%
1731         \current@plane=5%
1732         \vskip\v@space@dist%
1733         \loop%
1734             \advance\current@plane\m@ne%
1735             \ifnum\current@plane=\z@%
1736                 \lines@max=\@ight%
1737                 \rows@max=\@ight%
1738             \else%
1739                 \lines@max=\f@ur%
1740                 \rows@max=\f@ur%
1741             \fi%
1742             % Now we should clear the board
1743             \begingroup% We need this for inner loops!
1744                 \clear@board%
1745                 \put@plane%
1746             \endgroup%
1747             \hbox to \bd@width{%
1748                 \hfil%
1749                 \inner@henbox{\box\plane@box}%
1750                 \ifcase\current@plane\or%
1751                     \rlap{\boardfont\ A}\or%
1752                     \rlap{\boardfont\ B}\or%
1753                     \rlap{\boardfont\ C}\or%
1754                     \rlap{\boardfont\ D}%
1755                 \fi%
1756                 \hfil%
1757             }%
1758             \vskip\v@space@dist%
1759             \ifnum\z@<\current@plane\repeat%
1760         }\hfil}%
1761 }
1762

```

```

1763 \def\stereo@center{%
1764     \ifnum\current@plane=\z@%
1765         \setbox\plane@box=\vbox{\hbox{%
1766             \@hGrid\tw@tw@f@ur\@hGrid\tw@ 6f@ur%
1767             \@vGrid\tw@tw@f@ur\@vGrid6\tw@f@ur%
1768             \box\plane@box%
1769         }}%
1770     \fi%
1771 }
1772 \def\put@sqs@space@vertical{%
1773     \setbox\sq@box=\hbox{\hfil\vbox{%
1774         \current@plane=\planes@max%
1775         \vskip\v@space@dist%
1776         \loop%
1777             \advance\current@plane\m@ne%
1778             % Now we should clear the board
1779             \begingroup% We use inner loops!
1780             \clear@board%
1781             \put@plane%
1782             \hbox to \bd@width{%
1783                 \inner@henbox{\box\plane@box}%
1784                 \advance\current@plane'A%
1785                 \rlap{{\boardfont\ \char\current@plane}}}%
1786             }%
1787             \endgroup%
1788             \vskip\v@space@dist%
1789             \ifnum\z@<\current@plane\repeat%
1790     }\hfil}%
1791 }
1792
1793 \def\put@sqs@space@horizontal{%
1794     \setbox\sq@box=\hbox{%
1795         \current@plane=\z@%
1796         \hskip\h@space@dist%
1797         \loop%
1798             % Now we should clear the board
1799             \begingroup% We use inner loops!
1800             \clear@board%
1801             \put@plane%
1802             \hbox to \bd@width{%
1803                 \inner@henbox{\box\plane@box}%
1804                 \advance\current@plane'A%
1805                 \rlap{{\boardfont\ \char\current@plane}}}%
1806             }%
1807             \endgroup%
1808             \hskip\h@space@dist%
1809             \advance\current@plane\@ne%
1810             \ifnum\planes@max>\current@plane%
1811             \repeat%
1812     }%
1813 }
1814
1815 \def\put@sqs@space{%
1816     \ifspace@vertical%

```



```

1817     \put@sq@space@vertical%
1818 \else%
1819     \put@sq@space@horizontal%
1820 \fi%
1821 }
1822 \def\@inner@vframe{%
1823     \if@vframe%
1824         \vrule width \inner@frame%
1825     \else%
1826         \hskip\inner@frame%
1827     \fi%
1828 }
1829
1830 \def\@inner@hframe{%
1831     \if@hframe%
1832         \hrule height \inner@frame%
1833     \else%
1834         \vskip\inner@frame%
1835     \fi%
1836 }
1837 \def\inner@v@frame@rule{%
1838     \if@stereo%
1839         \@inner@vframe%
1840     \else\if@space%
1841         \@inner@vframe%
1842     \else\if@leaveOuter%
1843         \vrule width \inner@frame%
1844     \else%
1845         \@inner@vframe%
1846     \fi\fi\fi%
1847 }
1848
1849 \def\inner@h@frame@rule{%
1850     \if@stereo%
1851         \@inner@hframe%
1852     \else\if@space%
1853         \@inner@hframe%
1854     \else\if@leaveOuter%
1855         \hrule height \inner@frame%
1856     \else%
1857         \@inner@hframe%
1858     \fi\fi\fi%
1859 }
1860
1861 \def\inner@henbox#1{%
1862     \hbox{%
1863         \inner@v@frame@rule%
1864         \vbox{\inner@h@frame@rule#1\inner@h@frame@rule}%
1865         \inner@v@frame@rule%
1866     }%
1867 }
1868 \def\@outer@vrule{\vrule width \outer@frame}
1869
1870 \def\@outer@hrule{\hrule height \outer@frame}

```

```

1871 \def\outer@v@frame@rule{%
1872     \if@stereo%
1873         \@outer@vrule%
1874     \else\if@space%
1875         \@outer@vrule%
1876     \else\if@leaveOuter%
1877         \if@vframe\@outer@vrule\else\hskip\outer@frame\fi%
1878     \else%
1879         \@outer@vrule%
1880     \fi\fi\fi%
1881 }
1882
1883 \def\outer@h@frame@rule{%
1884     \if@stereo%
1885         \@outer@hrule%
1886     \else\if@space%
1887         \@outer@hrule%
1888     \else\if@leaveOuter%
1889         \if@hframe\@outer@hrule\else\vskip\outer@frame\fi%
1890     \else%
1891         \@outer@hrule%
1892     \fi\fi\fi%
1893 }
1894
1895 \def\outer@henbox#1{%
1896     \outer@h@frame@rule%
1897     \hbox{%
1898         \outer@v@frame@rule%
1899         \ifspace@vertical%
1900             \hskip\h@frame@dist%
1901         \fi%
1902         \vbox{%
1903             \ifspace@vertical%
1904                 \vskip\v@frame@dist%
1905             \else%
1906                 \vskip\v@space@dist%
1907             \fi%
1908             #1%
1909             \ifspace@vertical%
1910                 \vskip\v@frame@dist%
1911             \else%
1912                 \vskip\v@space@dist%
1913             \fi%
1914         }%
1915         \ifspace@vertical%
1916             \hskip\h@frame@dist%
1917         \fi%
1918         \outer@v@frame@rule%
1919     }%
1920     \outer@h@frame@rule%
1921 }
1922 \def\ch@fig#1{%
1923     \ifvmode\noindent\fi%
1924     \hbox{\chtextfont\lower.1\fontdimen\tw@\chtextfont\hbox{\char#1}}%

```

```

1925 }
1926 \def\@dia@index{%
1927   \@ifundefined{newindex}%
1928   {\errmessage{You should add documentstyle-option 'index'}}{}%
1929 }
1930
1931 \def\showlabel#1{%
1932   \if@develop%
1933     \raise1ex\hbox{\labelfont#1}\penalty\exhyphenpenalty%
1934   \fi%
1935 }
1936
1937 \def\@aidxitem#1, #2, #3{%
1938   \par\medskip#1, \write@christian#2; \dotfill #3%
1939 }
1940
1941 \def\dia@index#1\@sep#2[#3]{\index[#3]{#2/showlabel{#1}}}
1942
1943 \def\parse@aindex#1; {%
1944   \expandafter\dia@index\the\label@tk\@sep#1[author]\l@@klist%
1945 }
1946
1947 \def\@aindex{%
1948   \if@aindex%
1949     \ifnormal@names%
1950       \errmessage{Cannot create index entries with normalnames}%
1951     \else\ifauth@r%
1952       \let\@action=\parse@aindex\@parseTokenlist\aut@tk;%
1953     \fi\fi%
1954   \fi%
1955 }
1956
1957 \def\x@sindex#1\@sep{\expandafter\dia@index\the\label@tk\@sep#1[source]}
1958
1959 \def\@sindex{%
1960   \if@sindex\if@source%
1961     \expandafter\x@sindex\the\source@tk\@sep%
1962   \fi\fi%
1963 }
1964
1965 \def\parse@tindex#1, {%
1966   \expandafter\dia@index\the\label@tk\@sep#1[theme]\l@@klist%
1967 }
1968
1969 \def\@tindex{%
1970   \if@tindex\if@theme%
1971     \let\@action=\parse@tindex\@parseTokenlist\theme@tk,%
1972   \fi\fi%
1973 }
1974 \def\@setPieceColor#1#2#3{%
1975   \gdef\ds@white{#1}\gdef\ds@black{#2}\gdef\ds@neutral{#3}%
1976 }
1977
1978 \def\@setPieceSpec#1#2#3#4#5#6{%

```

```

1979 \gdef\ds@king{#1}\gdef\ds@queen{#2}\gdef\ds@rook{#3}%
1980 \gdef\ds@bishop{#4}\gdef\ds@knight{#5}\gdef\ds@pawn{#6}%
1981 }
1982
1983 \def\@setPieceRotation#1#2#3{%
1984 \gdef\ds@left{#1}\gdef\ds@right{#2}\gdef\ds@upsideDown{#3}%
1985 }
1986 \def\loop@rotation{%
1987 \bgroup%
1988 \n@cnt\z@%
1989 \help@a\z@%
1990 \loop%
1991 \ifcase\n@cnt%
1992 \def\@theRotation{}%
1993 \or%
1994 \def\@theRotation{\ds@left}%
1995 \or%
1996 \def\@theRotation{\ds@right}%
1997 \or%
1998 \def\@theRotation{\ds@upsideDown}%
1999 \fi%
2000 \loop@color%
2001 \advance\n@cnt\@ne%
2002 \advance\help@a by 36\relax%
2003 \ifnum\n@cnt<\f@ur\repeat%
2004 \egroup%
2005 }
2006
2007 \def\loop@color{%
2008 \bgroup%
2009 \w@cnt\z@%
2010 \loop%
2011 \ifcase\w@cnt%
2012 \def\@theColor{\ds@white}%
2013 \or%
2014 \def\@theColor{\ds@neutral}%
2015 \or%
2016 \def\@theColor{\ds@black}%
2017 \fi%
2018 \loop@piece%
2019 \advance\w@cnt\@ne%
2020 \advance\help@a by 6%
2021 \ifnum\w@cnt<\thr@@\repeat%
2022 \egroup%
2023 }
2024
2025 \def\loop@piece{%
2026 \bgroup%
2027 \b@cnt\z@%
2028 \loop%
2029 \ifcase\b@cnt%
2030 \def\@thePiece{\ds@pawn}%
2031 \or%
2032 \def\@thePiece{\ds@knight}%

```

```

2033         \or%
2034         \def\@thePiece{\ds@bishop}%
2035         \or%
2036         \def\@thePiece{\ds@rook}%
2037         \or%
2038         \def\@thePiece{\ds@queen}%
2039         \or%
2040         \def\@thePiece{\ds@king}%
2041         \fi%
2042         \expandafter\xdef\csname%
2043         \@theColor\@thePiece\@theRotation\endcsname{%
2044         \noexpand\ch@fig{\the\help@a}%
2045         }
2046         \advance\b@cnt\@ne%
2047         \advance\help@a by \@ne%
2048         \ifnum\b@cnt<6\repeat%
2049     \egroup%
2050 }
2051 \elchfont\@fselch
2052
2053 \defaultelchfont%
2054 \diagnum{\@ne}
2055 %% \figcnttrue
2056 \setboolean{piececounter}{true}
2057 \def\@dianame{\@fullname}
2058 \def\@solname{\@fullname}
2059 \space@verticaltrue
2060 \diagnumbering{arabic}
2061 \def\write@month{\@arabic}%
2062 \diagleft
2063 \cl@arsol
2064 \let\orig@author=\author
2065 \let\orig@day=\day
2066 \let\orig@month=\month
2067 \let\orig@year=\year
2068 \let\orig@label=\label
2069 \DefinePieces{wsn}{KDTLSB}{LRU}
2070 \newdimen\normalboardwidth
2071 \def\setboardwidth{%
2072     \normalboardwidth=\@ight\fontdimen\tw@\chessfont%
2073     \advance\normalboardwidth\tw@\inner@frame%
2074     \advance\normalboardwidth\tw@\h@frame@dist%
2075     \advance\normalboardwidth\tw@\outer@frame%
2076 }
2077
2078 \setboardwidth
2079
2080 \</style>

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General: First Version 1	General: Fixed wrong piece count
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