User handbook of Chess PDF browser v1.20

# Index

[0. Index 1](#_Toc63978031)

[1. Introduction 4](#_Toc63978032)

[2. Quick start 5](#_Toc63978033)

[2.1. Requirements 5](#_Toc63978034)

[2.2. Working with a PGN file 5](#_Toc63978035)

[2.3. Scanning for chess games in a book in PDF format 5](#_Toc63978036)

[3. Main window 7](#_Toc63978037)

[3.1. Chess board panel 8](#_Toc63978038)

[3.2. Text area with the moves of the game 8](#_Toc63978039)

[3.2.1. Pop-up menu 9](#_Toc63978040)

[3.3. List of chess games 9](#_Toc63978041)

[3.3.1. Pop-up menu 10](#_Toc63978042)

[3.4. Browsing the moves with the cursor keys 11](#_Toc63978043)

[4. Menu bar 12](#_Toc63978044)

[4.1. File menu 12](#_Toc63978045)

[4.2. Edit menu 13](#_Toc63978046)

[4.3. Game Menu 13](#_Toc63978047)

[4.4. View Menu 14](#_Toc63978048)

[4.5. Preferences menu 15](#_Toc63978049)

[4.6. Windows menu 15](#_Toc63978050)

[4.7. Help menu 16](#_Toc63978051)

[5. Windows of the application 18](#_Toc63978052)

[5.1. PDF window 18](#_Toc63978053)

[5.2. Edit comment window 21](#_Toc63978054)

[5.3. Edit header TAGs window 23](#_Toc63978055)

[5.3.1. Selecting groups of TAGs 23](#_Toc63978056)

[5.3.2. Filtering, selection and edition of TAGs 24](#_Toc63978057)

[5.3.3. Accepting, discarding and reverting changes 25](#_Toc63978058)

[5.4. Window for editing the initial position 27](#_Toc63978059)

[5.4.1. Assigning an initial position to the game 28](#_Toc63978060)

[5.4.2. Pieces to be moved to the chess board 29](#_Toc63978061)

[5.4.3. Other controls to set up the position 29](#_Toc63978062)

[5.5. Preferences window 31](#_Toc63978063)

[5.5.1. Chess view tab 31](#_Toc63978064)

[5.5.2. Language tab 32](#_Toc63978065)

[5.5.3. Tab: Game Extractor 33](#_Toc63978066)

[5.5.4. Tab: Tag Extractor 34](#_Toc63978067)

[5.5.5. Tab: Position recognizer 37](#_Toc63978068)

[5.5.6. Tab: Engines 38](#_Toc63978069)

[5.5.7. Common panel to accept the changes 39](#_Toc63978070)

[5.6. Window of detached chess game 40](#_Toc63978071)

[5.6.1. Pop-up menu 40](#_Toc63978072)

[5.7. Analysis window 42](#_Toc63978073)

[5.8. Window what is new 43](#_Toc63978074)

[5.9. About window 44](#_Toc63978075)

[5.10. License window 45](#_Toc63978076)

[5.11. Engine Configuration Window 46](#_Toc63978077)

[5.11.1. Configuration of a new engine 46](#_Toc63978078)

[5.11.2. Configuration of a new engine 46](#_Toc63978079)

[5.12. New game window 48](#_Toc63978080)

[5.13. Game Data Window 49](#_Toc63978081)

[5.14. Game analysis window 50](#_Toc63978082)

[6. Sample edition of a scanned chess game with ambiguities 51](#_Toc63978083)

[6.1. Practical case 51](#_Toc63978084)

[6.2. Another more complex case 59](#_Toc63978085)

[7. Tag extraction 63](#_Toc63978086)

[7.1. Files 64](#_Toc63978087)

[7.2. Profiles 64](#_Toc63978088)

[7.2.1. Profile lines 67](#_Toc63978089)

[7.3. Blocks 67](#_Toc63978090)

[7.4. Regular expressions 68](#_Toc63978091)

[7.5. Regular Expressions Edit Window 70](#_Toc63978092)

[7.5.1. Activation of the Autocompletation window 71](#_Toc63978093)

[7.5.2. Regular expression configuration example 72](#_Toc63978094)

[7.6. Profile configuration window for tag extraction 74](#_Toc63978095)

[7.6.1. How to add a new line panel 74](#_Toc63978096)

[7.6.2. How to delete a line panel 75](#_Toc63978097)

[7.6.3. How to change the position of a line panel 76](#_Toc63978098)

[8. Position recognizer 77](#_Toc63978099)

[8.1.1. Position edit window. Recognition Training 78](#_Toc63978100)

[9. Annexes 79](#_Toc63978101)

[9.1. Concepts used in the handbook 79](#_Toc63978102)

[9.2. Licence text 81](#_Toc63978103)

# Introduction

The application Chess PDF browser can be used to help you read chess books in PDF format.

It allows you to open a book in PDF format so that you can browse its pages, offering the option to extract all the chess games in the book for their later treatment or use.

In the same way, it allows opening chess games in PGN format.

In both cases the application allows you to browse the moves, edit the games (by either creating new variants or editing the comments and data of the games—called TAGs in the PGN format), and set the initial position of the chess games.

As an update in this new version, it is now possible to use UCI Type Chess Engines for analyzing positions.

Also, matches with time controls can be played between two human players, a human player versus an engine, or playing two engines against each other.

What´s new in version v1.20:

* New option of demonstration videos in the Help Menu
* Makes use of platform version v1.4:
  + Does not make extensive use of Reflection.
  + Adds the What´s New window.
  + Connection to the server to search for a new version of the application (new version query).
* Improved game presentation:
  + Now games can be shown in figurine algebraic notation.
* In the board presentation:
  + The names of players are displayed on the board.
  + Captured pieces are displayed.
  + Two sets of additional pieces are added.
* Improved game extractor:
  + The PDF Game Extractor makes use of parentheses to decide which variant the current move belongs to.
  + New data extractor for processed games (names of players, ELOs, etc.) with a system of regular expressions.
* New image position recognition (OCR).
  + Trains itself with known positions during game extraction.
  + Allows recognition of the position determining the Fen String of that position (by right-clicking on the PDF image).
  + Attempts automatic position recognition in matches that do not begin from the starting position during game extraction.
  + Once the position is recognized a board can be opened to check if the detection has been valid (and paste them, for example, in the start position edit window). Sometimes the recognition is not complete, then, if it has been possible to determine the grid of the board, the option is given to train the recognizer editing the recognized position.
* Support for UCI Type Engines (like stockfish)
  + UCI Type engines can be added and configured to which the application can be connected.
  + New analysis window that shows the most promising variants calculated with the selected engines.
  + New option to play games with time controls between people, between engines, or between a player and an engine.
* Improved commenting allowed:
  + Comments are now allowed at the start of the variant.
* New window to edit the basic data of the game (White Player, Black Player, ELOs, etc).
* Supports more image types in PDFs than in previous versions of the application.

# Quick start

## Requirements

To execute the application is necessary to have the java version 8 or later environment installed (Java Runtime Environment).

With this, the file .jar in folder ./binary/ can be opened.

## Working with a PGN file

1. Open the application Chess PDF browser by double clicking on the application .jar file which is located on: .../\_binary/ChessPDFbrowser-main-v1.20-SNAPSHOT-all.jar
2. Open a new dialog to choose a file (Menu: File->Open).
3. Select the file with PGN format. The file must have the .pgn extension. If not, the application will not recognize it.
4. Browse the moves, and edit what you need to.
5. In case you require so, the file just opened can be saved again under the same or a different file name.

## Scanning for chess games in a book in PDF format

1. Open the Chess PDF browser by double clicking on the application .jar file which is located on: .../\_binary/chessPDF\_browser.jar
2. Open a new dialog to choose a file (Menu: File->Open).
3. Select a file with PDF format. The file must have the .pdf extension. If not, the application will not recognize it.
4. Once the file is loaded, a new window will be opened showing a page of the PDF book. This window allows browsing the PDF and also offers the option of extracting the chess games (by clicking the “Scan PDF for games” button).
5. After you click the butto, a new window will be opened which allows chosing the language of the games in the book. Choose the language and click the “Start” button.

At that moment the window will show the progress of the scan and, once finished, the application will show the games in the main window.

1. Work with the chess games.
2. It is possible to save the extracted chess games in PGN format.

NOTES:

Most likely you will have to make some editions to the extracted games in order to achieve exactly the same variants as in the PDF book.

* This version of the application tries to recognize the positions of the images within the boards of the book, so it is possible that in games that do not start from the starting position, the starting position is detected correctly. If not, then, the initial position must be set manually.
* Another case why the games may not be identical to the ones in the PDF is that when scanning for games, sometimes the application reaches points with ambiguities that cannot be solved automatically. The behaviour in this case is to split the game into separate blocks free of ambiguities.

It’s for that reason that some games may be splitted in parts and some ambiguous moves can disappear.

In a later point, we will show what to do to try to solve this issue:

***6*** - ***Sample edition of a scanned chess game with ambiguities.***

* From this version of the application (v1.20), a new game extractor is used that takes parentheses and brackets into consideration when deciding which variant each move belongs to.

In this way, provided that the PDF manual respects said convention of parentheses for new variants, far fewer errors in the extraction of game variants are produced than in previous versions of the application, although it is possible that some error may still occur.

# Main window

In this section we will see the main window of the application.

After starting the graphical application and opening a PGN file with commented chess games, a window like this is shown:

Interfaz de usuario gráfica

Descripción generada automáticamente

We can see several elements in it:

* The menu bar

The menu bar with its options will be explained in a later chapter:

***4*** - ***Menu bar***

* At the right side of the window, we can see the chess board which shows the current position.

Within the same panel there is a green zone which shows relevant information for that position.

* The left side of the window is divided into several zones, which will be explained starting from top to bottom:
  + A panel with the “White plays from bottom” option. This option allows you to choose the board orientation, that is, whether the white player plays from the bottom of the board or not.
  + A panel with browsing buttons.

This panel has buttons which allow browsing through the moves of the game.

* + A text area which shows the variants of the game, together with the comments (which can be deactivated through configuration).
  + A list of the games. It shows the most relevant information of the games and allows switching the current game (by double clicking over the new game).

## Chess board panel

On the right panel a chess board is shown with the current position.

When the mouse pointer hovers over a piece for which there are legal movements, these moves are hinted with a green border in all possible destination squares.

Also the initial and final squares of the last move are shown with an orange border.

When there are possible legal moves, that piece can be moved to any legal destination square by dragging it from the initial position into the final position.

If the move was not among those of the game, a new variant will be created with the new move.

That move then becomes the current move.

The chess board panel also displays a green banner in which the most relevant information of the position is shown.

Additionally, other messages can be shown in the chess board if the game was not started in its initial position and one was not set.

A message of Illegal position could also pop up, if the current move is not legal (or if any of the previous moves of the variant was not legal).

## Text area with the moves of the game

A text area with the moves of the current game is shown below the navigation panel.

The variants are shown in that panel (the main one in bold, and the secondary ones in blue).

The comments of the move are also shown, if the application is set up to show them.

When you click on a move, this move becomes the current move, and the position just after it is shown on the board.

The current move is shown with a grey background, so that it can be distinguished from the rest.

When you click on a comment, the edit comment window is opened just as when clicking on the “Edit comment” pop-up menu option, as explained in the pop-up menu paragraph.

The application also allows selecting complete variants, to be copied and pasted, or to erase variants completely.

In case of selecting and copying a variant, the moves of the selected variant, are shown with a yellow background.

It exists the possibility that a move in the current game is not legal (owing to the initial position having been set in a wrong way, or because of some error in the game moves extracted from the PDF or loaded from a PGN file). In that case the move is shown with a red background.

### Pop-up menu

This element of the window has its own pop-up menu which is shown with a mouse right-click:

Texto

Descripción generada automáticamente

The menu options are the following:

* Select and copy a subvariant.

This option allows selecting and copying a variant, or changing the selection in case there was a variant selected previously.

When this option of the pop-up menu is clicked, the selected variant can be copied into another game or into another variant.

The ply numbers have to match for the copy to be allowed. If not, the application does not allow the replication of that variant in the new destination.

In case there is a previously selected variant, its moves are shown in a yellow background.

* Clear selection.

This option is used to deselect the previously selected variant.

* Paste (variant).

This option allows pasting the previously selected variant, right after the move which was right-clicked with the mouse.

* Erase.

This option allows erasing a variant.

* Edit comment.

This option allows opening the Edit comment window.

This window will be explained in section:

***5.2*** - ***Edit comment window***

* Edit initial position of game.

This option allows opening a window to edit the initial position of the game.

This window will be explained in section:

***5.4*** - ***Window for editing the initial position***

## List of chess games

There is a list of the games on the bottom-left side of the main window.

That list shows the main data of every game, giving the possibility to add new games and erase or move them.

By double clicking on a game, this game becomes the current game, making it possible to browse its moves.

### Pop-up menu

This element of the window has its own pop-up menu which appears after a mouse right-click:

Tabla

Descripción generada automáticamente

The menu options are the following:

* **Edit initial position of the game**.

It allows setting the initial position for the first of the selected games (which may not match the current game).

This option opens the initial position edition window.

This window will be explained in section:

***5.4*** - ***Window for editing the initial position***

* **Open selected game detached**

This window allows opening the selected games in separate windows, to make it easier to copy/paste variants among themselves or the Text area which contains the moves of the current game.

The features of these windows are the same as the ones for the Text area containing the moves of the game (explained in the previous section).

It can also be seen in the next section:

***5.6*** - ***Window of detached chess game***

* **Move selected game**.

It allows moving the selected games to their new position on the list (showed by a red line after a mouse right-click).

* **Erase selected game**.

It allows erasing the selected games.

* **Create game before**.

It allows creating a new game just before the position active at the time of the mouse right-click. The position where the new game is to be inserted is shown with a red line.

* **Create game after**.

It allows creating a new game just after the position active at the time of the mouse right-click. The position where the new game is to be inserted is shown with a red line.

* **Analyze game**.

This option opens the game analysis window which, allows you to choose the engine and analyses all the positions of the selected game.

See section:***5.14*** - ***Game analysis window*** .

* **Open the Tag Extraction Profile.**

This option opens the tag extraction configuration by opening the specific Profile that detected the game tags pointed by the mouse. You can see more details in section: 7.2 - Profiles.

## Browsing the moves with the cursor keys

When the main window has the focus, you can browse the moves of the current window with the cursor keys.

* Right arrow. It goes one move forward. If the previous move was the last one in the currently stored line of moves, this key will move forward along the main variant.
* Left arrow. It goes one move backwards.
* Up arrow. It has two behaviours:
* When the parent move has only one child (the current one), it goes to the previous move whose parent has more than one child.
* When the parent move has more than one child, the up arrow switches to the previous subvariant.
* Down arrow. It has two behaviours:
* When the parent move has only one child (the current one), it goes to the next move whose parent has more than one child, landing either on the child corresponding to the currently stored line of moves or, if that move is beyond the last move of this stored line of moves, on the first child (main variant).
* When the move has more than one child, the down arrow switches to the next subvariant.

# Menu bar

The options of the menu bar will be explained in this chapter.

## File menu

The File menu looks like this:

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

This menu has four options:

* **Open**. When you click on this menu element, a File dialog is opened.

The application recognizes two different file extensions:

* .pgn extension

The application allows opening games in PGN format.

If the PGN file does not have a .pgn extension, the application will not open the file even though the file might have a valid PGN format.

* .pdf extension

The application allows opening books in PDF format.

If the PDF file does not have a .pdf extension, the application will not open the file even though the file might have a valid PDF format.

When a PDF file is opened, the application shows another window which will be explained in a later chapter:

***5.1*** - ***PDF window***

* **Save**. When you click on this menu element, the application will save the current set of games, overwriting the original file (the file that was open).

If the PDF book is scanned for games, the file name will be reset and the Save menu option will work just as the ‘Save as’ menu option.

* **Save as**. When clicking on this menu element, the application will open the File dialog to save the games in a PGN file, allowing a file name different from the current one.
* **Exit**. It exits the application.

## Edit menu

The Edit menu looks like this:

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

This menu has three options:

* **Copy FEN**. This option copies the FEN string of the current position to the clipboard.

This can be useful to operate with another application which works with FEN strings.

It can also be used to copy a particular position, for instance, the initial position of another game (there is an option in the window for the edition of initial positions which allows pasting a FEN position).

* **Copy PGN**. This option copies the current game in PGN format to the clipboard.
* **Paste**. This option pastes the clipboard content (either a FEN position, a complete PGN, or a fragment of a PDF book, which will be added at the end of the current set of games).

## Game Menu

The Game Menu looks like this:

Interfaz de usuario gráfica, Aplicación, Tabla

Descripción generada automáticamente

This menu allows you to interact with games and their data.

It has various options:

* **New game**. Open the window that collects the data to begin a new match with time control.

For more details, you can see item: . ***5.12*** - ***New game window***

* **Pause game**. Stop times for the game in the process until the option to resume the game is selected.
* **Resume Game**. Resumes the game that was previously paused, or was paused automatically for having selected another move from the tree variant or for having selected another game from the list of games.
* **Game Data**. Opens the window to modify game data that is being shown on the board.

***5.13*** - ***Game Data Window***.

* **Whites resign**. If there is a game in progress, it allows the white player (human) to resign. The game will end.

If there is no game in progress, this option will assign an endgame to the game that black wins (0-1), in the current position of the tree variant.

* **Blacks resign**. If there is a game in progress it allows the black player (human) to resign. The game will end.

If there is no game in progress, this option will assign an endgame to the match that white wins (0-1), in the current position of the tree variant.

* **Agreed draws**. If there is a game in process between two human players, the match will end by assigning an endgame draw (1/2-1/2).

If there is no match in process, a final stalemate result will be assigned in the current position.

* **Clearing Game Results**. In a position that has an end game result, this option will clear that game result.
* **Analyze game**. This option opens the complete game analysis window, in which you can select the engine to analyze the game.
* **See** paragraph: ***5.14* - *Game analysis window***

## View Menu

The view menu looks like this:

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

This menu has only two options:

* **Set of chess pieces**. This option is so that the user can choose the type of pieces that will be shown on the board.
* Zoom. Allows the magnification of the visual part of the application to be chosen with a percentage indicating the size of the components in comparision with the normal display of the windows (100%).

## Preferences menu

The Preferences menu looks like this:

Interfaz de usuario gráfica

Descripción generada automáticamente

This menu has two options:

* **Language**. When clicking on this submenu, the available languages are shown.

It allows switching the language of the application.

By default, the following languages are available:

* "EN". English
* "ES". Spanish
* "CAT". Catalan
* “RU”. Russian
* **Preferences**. This option shows a window which displays the options of the application.

This window will be explained in a later chapter: ***5.5*** - ***Preferences window***

## Windows menu

The Windows menu looks like this:

Interfaz de usuario gráfica, Texto, Aplicación, Tabla

Descripción generada automáticamente

This menu has four options:

* **Edit comment window**. This option opens a window where you can edit the comments and NAGs of the current move.

This window will be explained in a later chapter:

***5.2*** - ***Edit comment window***

* **Edit header TAGs window**. This option opens a window for TAG edition, which can be used to include relevant information of the current game.

This window will be explained in a later chapter: ***5.3*** - ***Edit header TAGs window***

* **Edit initial position**. This window opens a window where you can edit the initial position of the current game.

This window will be explained in a later chapter: ***5.4*** - ***Window for editing the initial position***

* **Open current game in detached window**. This option opens the current game in a detached window, to make the copy/paste of variants among different games easier.

This window will be explained in a later chapter: ***5.6*** - ***Window of detached chess game***

* **Analysis window**. This option opens the analysis window in which, after having chosen the analysis engine, shows the most promising variants provided by that engine.

This window will be discussed in an upcoming chapter: ***5.7*** - ***Analysis window***

## Help menu

The Help menu looks like this:

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente

This menu has six options:

* **Demos**. Contains a menu that opens an url to the demonstration video on various themes related to the application:
  + Working with PGNs.
  + Working with PDFs.
  + Adding UCI engines.
  + Analyzing positions.
  + Playing games.
  + Working with the clipboard.
  + Position recognizer (ocr).
  + Editing comments.
  + Editing tags.
  + Editing the starting position.
* **Help**. Open this help file.
* **Searching the new version**. Performs the new version query and opens a window with the result of that query.

The results window indicates if a new version was located or not and it looks like this:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

* **What is new**. Opens a window with a summary of the novelties ov current version: ***5.8*** - ***Window what is new***.
* **About**. When this menu element is clicked, a window is shown with application’s greetings and contact data.
* **License**. When this menu element is clicked, a window is opened showing the license which was accepted the first time the application was run.

What this window looks like can be seen in a later chapter: ***5.10*** - ***License window***

The text of the license can be read in the next chapter: ***9.2*** - ***Licence text***

# Windows of the application

In this chapter we will see the different types of windows in the application.

## PDF window

When you open a PDF file, the application opens a new window where the pages of the book can be browsed and also offers an option to scan the PDF for games.

The window for browsing the PDF looks like this:

Imagen que contiene Tabla

Descripción generada automáticamente

At the top of the window there are components which allow browsing the PDF book.

* Zoom factor

On the left side there is a combo box which allows zooming in and out the current page.

The zoom level varies between 25% and 400%.

* Navigation buttons.

The next component towards the right is a set of four buttons which allow browsing the pages of the PDF book.

The behaviour of the buttons is self-explanatory.

* Current page number.

When you browse the PDF book, the value of this text component is updated with the number of the current page.

Furthermore, it is possible to jump to a different page number if you enter it.

* Context Menu

When you point your mouse at an image and the right button is clicked a context menu appears.

This context menu means that the image is a board with a position and it offers the option of attempting to recognize it and copying it in the clipboard as a FEN string.

Captura de pantalla de un celular con letras

Descripción generada automáticamente

**Attempting to recognize the position**. When this option is selected the position recognizer takes action. See more in section ***8*** - ***Position recognizer***

* Scan PDF for games.

When you click the “Scan PDF for games” button, a new window opens which looks like this:

Interfaz de usuario gráfica, Texto, Aplicación, Word

Descripción generada automáticamente

In this window, there are various panels that contain progress information or allow you to customize game extraction:

* **Progress**: The top of the window shows the progress bar of the scan process.
* **Number of self-training positions for the position recognizer pending to be processed**. It is the number in orange in the rectangular box at the top right.
* **Game language**: Below there is a drop-down that allows you to select the language of the moves of the PDF games.
* **Page Ranking**: In this panel, there are two text boxes that allow you to choose the page ranking on which you want to perform the game extraction.
* **Game Extractor**: Allows you to choose if the new experimental game extractor is going to be used for the extraction about to start.

That option stays permanent, and from then on the option will be saved, although in each extraction it will be possible to change it or change there or from the configuration window as well.

* **Direct access to the tag extractor**. To the right of the experimental game extractor option, there is a button that allows direct access to the configuration of the tag extractor. ***5.5.4*** - ***Tab: Tag Extractor***.

Finally, there are buttons to Start or Cancel the scan process.

The scan process can be cancelled once started.

Once the scan process ends, the “Cancel” button becomes “Close”.

You will not be able to access the main window of the application until this window is closed.

Once the games are extracted, the list of games in the main window is updated and it is then possible to browse them.

As a rule, it will be necessary to edit the result of the game extraction because many times there are ambiguous moves in the games which are difficult to solve automatically.

Furthermore, it will be necessary to set the initial position manually for those games that do not start from the standard initial position.

Besides, the previously mentioned ambiguities will have to be solved by joining those parts extracted during the scan that were split due to such ambiguities.

In the next point we will see how to achieve this with a practical case:

***6*** - ***Sample edition of a scanned chess game with ambiguities .***

* The mouse wheel

When the mouse pointer is located over this window, the mouse wheel has several uses:

* CTRL + wheel movement.

When the CTRL key is pressed while simultaneously moving the mouse wheel, the zoom factor is thus modified as if with the zoom combo box.

* SHIFT + wheel movement.

If the horizontal scroll bar is showing and the SHIFT key is then pressed while simultaneously moving the mouse wheel, then the position of the horizontal scroll bar changes thus.

* Wheel movement (neither SHIFT nor CTRL).

If the vertical scroll bar is showing while the wheel is moved (without pressing either SHIFT or CTRL), the position of the vertical scroll bar is changed.

If the top of the page has been already reached and you continue moving the wheel upwards, then the previous page becomes the current one (unless you are on the first page!).

If the bottom of the page has been already reached and you continue moving the wheel downwards, then the next page becomes the current one (unless you are on the last page!).

## Edit comment window

The window for editing comments can be opened either through the menu item (Windows->Edit comment window), by clicking on one of the game comments, or through the pop-up menu option which appears when right-clicking on one of the moves of the current game.

The window looks like this:

Interfaz de usuario gráfica

Descripción generada automáticamente

In the window there are several components which allow editing the comment or the NAGs of the move.

We will see these components below, starting from top to bottom.

* Always on top option.

It allows choosing whether the window is always on top (over the rest of windows, even when another one has the focus).

* Text area which shows the current move, to edit the comment and NAGs.
* Type of comment. It indicates if the comment is ascociated to the move or the start of a sub-variant.
* Text area which shows the editable comment, in green.
* Panel for editing NAGs.
* Button for clearing NAGs. When this button is clicked, all the NAGs of the move are erased.
* Text component: “NAG string”. This is a non-editable text component, which shows the NAGs of the move as if after the move.
* Text component: PGN NAGs. This is a non-editable text component, which shows the NAGs as if written in a file with PGN format.
* Add NAGs. When this button is clicked, the NAG selected in the combo box will be added to the NAGs of the move.
* NGAs combo box. This combo box allows selecting NAGs to be added to the NGAs list of the move.

First the NAG is shown in PGN format, followed by the printable version of the NAG.

* Novelty Panel. Allows you to select whether the move involves a novelty. This version of the application detects novelties during the extraction of PDF games, marking them in this panel, making it possible to change it here.

If a move was normal ( was not a novelty during the extraction) the application will allow it to be changed.

This parameter is not standard in the PGN format, and so this information is not lost when you save it in PGN, an automatic commentary is created that the application is capable of recognizing in this move, which indicates the condition of novelty, in case the move is marked as a novelty.

* Cross (cancel button). When you click on this button, the window is closed discarding all changes.
* ✓Check (accept button). When you click on this button, the changes are accepted and the window is closed.

If this button is not clicked, the changes will be lost once the current move changes or the window is closed.

* Arrow (revert button). If changes have been done and this button is clicked, the changes are lost and the original content is shown.

## Edit header TAGs window

TAGs are parameters which provide information on the game.

The window for editing TAGs can be opened and modified through the menu item (Windows->Edit header TAGs window).

The tags which can be modified are the ones of the PGN standard.

The window looks like this:

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

This window allows editing the game information divided in TAGs, as for instance: White (white player), Event (tournament), Site (place), Date (date), etc.

There are quite many TAGs, and to be able to work with them in a simple way, we have grouped the TAGs by the type of information they give.

Only those TAGS of the checked groups will appear in the TAG table of the game. Besides, the TAGs shown have to match the current filter.

We will talk about TAG filtering below.

### Selecting groups of TAGs

The groups of TAGs can be selected/deselected individually or by means of the pop-up menu (by clicking the mouse right button).

When the mouse right wheel is clicked in this panel, the following pop-up menu is shown:

Imagen que contiene captura de pantalla

Descripción generada automáticamente

This menu has three options:

* Select this group only (checks the group over which the mouse was hovering, and unchecks all other groups).
* Select all groups.
* Unselect all groups.

### Filtering, selection and edition of TAGs

Filtering is done through a combo box in which new filters can be typed or previous filters can be selected from a list.

The simplest way for the filter to work, which we will use normally, is to show only those TAGs which contain the sequence of chars of the filter.

There is another, more advanced way to use the filter, but it is more difficult to use because it presupposes you have some knowledge of regular expressions. (Only the tags which match the regexp of the filter would be shown).

Anyway, as there are not that many TAGs, using advanced filters does not mean a substantial improvement, so if you do not know about regular expressions, do not worry.

Provided the combo box has the focus, the filter is applied every time that either the return key is pressed a different element of the combo box is selected, or the focus goes out of the combo box.

Imagen que contiene captura de pantalla

Descripción generada automáticamente

To clean the filter you must delete all of its characters (empty string), which is equivalent to having no filter, and press return.

To select a particular TAG, simply click on it or move through the rows of the table with the cursor keys.

Every time a new TAG is selected its data are shown in the components below and, if the TAG is editable, the application allows so.

Imagen que contiene captura de pantalla

Descripción generada automáticamente

The value of the TAG can be edited in the text area marked with a red frame.

There are three buttons on the right side of this text area:

* Cross: Clear TAG, erases the contents of the TAG. It is equivalent to erasing the text and accepting the changes.
* ✓Check: Accept changes. The changes done to this TAG are accepted.
* Arrow: Revert changes to the original values (as of the time of selection).

### Accepting, discarding and reverting changes

The header data of the game can be changed by editing individual TAGs.

Nevertheless, these changes are not applied immediately but only once all changes have been done and accepted via the global buttons of the window (the global buttons are the big ones, at the bottom of the window).

At the bottom, there are five buttons:

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente

* **Remove all tags**: When you press this button, the contents of all TAGs are erased.

After this change, you can continue editing TAGs.

Once the changes are accepted, these changes will be persistent and there will be no reversion options.

* **Tag extractor settings**: If the current game has been recently extracted from a PDF, and tags have been automatically recognized for this game, this button allows you to open the settings of the tag extraction profile that best matched and with which the tags were extracted. (This option could be useful, for example, if the tag extraction did not function correctly and we want to correct possible errors and ambiguities that could be in the configured patterns). ***5.5.4*** - ***Tab: Tag Extractor***.
* **Cross**: Discard the changes.

When you click this button, the changes done until that moment will be discarded, and the value of the TAGs will be as when the TAGs edition window was opened.

After discarding the changes, the window will close.

* **✓**Check: Accept changes.

After clicking this button, the modifications done in the TAG values turn to persistent and cannot be reverted.

After accepting, the window will close.

* **Arrow**: Revert changes.

When you click this button, the modifications done in the TAGs are discarded, and their values return to the ones as when the window was opened. The window does not close and allow continuing editing.

## Window for editing the initial position

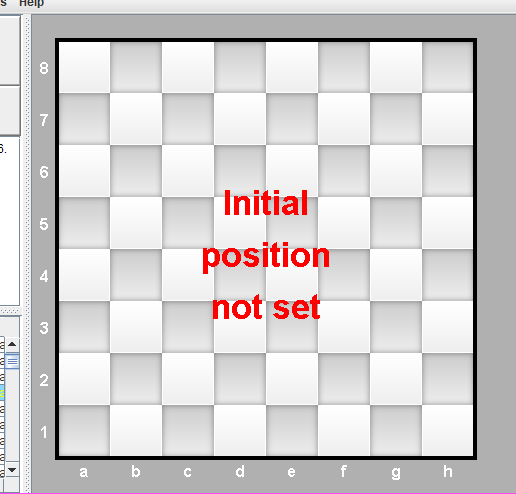
The application allows creating games from an arbitrary position that may not be the standard initial position.

This is useful because there are many games in books whose comments start at a position different from the standard initial position.

In that case, it is possible to set the initial position so that you can browse through the moves.

For this type of games, if you have not set the initial position, the application will show a message over the empty board to warn you that the initial position must be set before browsing the moves of that game.

This is the message shown in that case:



To solve this situation, we must open the Edit initial position window.

This can be done in two ways:

* From the main menu of the application:

Windows->Edit initial position

* From the pop-up menu in the table of the game list, in the main window.

When you right-click on the row of a game (pop-up menu -> Edit initial position of game).

The *Edit initial position* window looks like this:

Interfaz de usuario gráfica

Descripción generada automáticamente con confianza media

The window is divided into two differentiated panels:

* Top panel: It contains the controls of the window, the pieces that can be dragged to the board, and the several parameters of a position which are not showable on the board.
* Bottom panel: It contains the board, which shows the position of the pieces.

### Assigning an initial position to the game

On the top-left side of the top panel there are three buttons which allow setting an initial position directly that can be modified later.

Imagen que contiene captura de pantalla

Descripción generada automáticamente

* Button: Set initial position. When you click this button, the standard initial position is set on the board.
* Button: Leave only kings. When you click this button, only the kings are left on the board, in their initial position.

This can be a good beginning to set the initial position for an end-game position.

* Button: Paste FEN position. When you click this button, the application expects to find a FEN string in the clipboard.

This FEN string must have been copied previously to the clipboard, either from another application or by copying the FEN string which is updated after every edition in the “FEN string” text component.

The “FEN string” text component, looks like this:



To copy the FEN string to the clipboard, you must select the full text string and copy it to the clipboard (Ctrl + C).

### Pieces to be moved to the chess board

Below those buttons, there are two rows with images of pieces (one row for every color).

Dibujo en blanco y negro

Descripción generada automáticamente con confianza baja

These pieces are there to be dragged with the mouse onto the board.

### Other controls to set up the position

There are other parameters which can be configured:

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente

* **White plays at bottom**.To change the view of the board, it can be configured whether white or black play from the bottom. This check box has no effect over the resulting FEN position. Simply, it can be useful to change the point of view when setting the pieces on the board.
* **Move number**: It shows the number of the next move for the player who takes the turn (counting all moves made by the player from the start of the game).
* **Moves without progress**: It is the number of moves played from the last capture or pawn move. It is used for the 50 moves without progress rule (for draws).
* **En passant square**: This parameter shows the square that a white pawn in the 5th rank or a black pawn on the 4th rank can capture en passant, following a double pawn push.

The value that has to be set in this parameter is the code of the square which is just in the middle between the initial position of the pawn and the final position of the pawn which has advanced two ranks (as for the previous move).

If the previous move was not a two-square push, the value of this parameter must remain empty.

When the position is accepted, some checks are done to avoid invalid values for this parameter.

* **Turn of the game**: It indicates if the next turn is for white or black.
* **Rotate Board Button**. When this button is pressed the position is switched. Notice that this option is different from the checkbox for whites below. The selection of which part of the board is shown in the part at the bottom is independent of the shift of the position.

This option can be useful in the event, for example, that the position recognizer has recognized a position in reverse of how it should be (it has some criteria to autodetect if on the board image the whites are (below or not), but it is possible that that autodetection fails, or that it is not configured for automatic detection).

* **Castle indicators**: There are a set of indicators which say if the king or any of the rooks have moved from their initial position and have later returned there, thus leading to a position in which it cannot be deducted from the position of the pieces whether castling is still possible or not.

If these indicators are checked, the application will calculate from the position of the pieces whether the castling can or not be done (in that case, it will be supposed that the king and the rook have never been moved in this game).

If either the king or any of the rooks have been moved from their initial position to later return to it, the corresponding indicator should be unchecked, indicating that castling cannot be done even though the pieces seem to be in their initial position.

Besides the previous controls, there are three buttons which are used to discard, accept or revert the changes:

* Cross: Discard changes and close the window.
* ✓Check: Accept changes, consolidate them and close the window.
* Arrow: Revert the changes which have been produced since the window was opened and continue with the edition of the initial position.

## Preferences window

In the preferences window some parameters can be configured that can modify the behaviour of the application.

We will see below the two tabs this window has.

### Chess view tab

This tab looks like this:

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

In this tab there are some configurable parameters:

* **Show comments**: If this parameter is checked, the comments of the games will be shown (this has nothing to do with extracting comments from the games of a PDF. The scanning of a PDF for games does not include in any case the extraction of comments).
* **Show NAGs**: If this parameter is checked, the NAGs of the games will be shown.
* **Show chess game detached windows always on top**: If this parameter is checked, the detached windows will always be shown over the rest of the windows (including the main window).
* **Set of figures** Allows you to select the set of figures that are going to be used in the application.
* **Language to show games**:

There are several predefined languages which can be selected from the combo box of languages.

The information needed to set a language amounts to knowing which letter is used to name every piece in the algebraic format of the movements.

The application also allows using a language which did not previously exist (by selecting the first element of the combo box (Custom)), and defining the letters which name the pieces in that language).

These letters must follow this order:

King, Queen, Rook, Bishop, Knight

This configuration option relates only to the letters which name the pieces in the moves of the games.

The comments, if any, are obviously not translated.

The option (**FIGURES**) (♔♕♖♗♘) allows you to display moves in figurine algebraic notation (instead of using letters (RDTAC) to designate the pieces).

### Language tab

This tab looks like this:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

The following parameters can be configured:

* **Language**. This is the language of the text written by the application.

The languages that can be chosen are:

* EN. English
* ES. Spanish
* CAT. Catalan
* RU. Russian
* **Language locale**. This is the Java locale that the application will use for this language.

The application uses it to convert numbers to formatted numerical strings.

* **Web language**. Indicates the language that is going to be used in the new version queries to the server.
* Additional language. This is the new additional language that appears at the time of being able to change the language.

For a new language, you have to select the java locale to be used.

If you want to enter a language in which none of the application text exists you can add your language by translating files within the directory that is created when you press the "Add language" button.

The files to be translated are copied to the directory indicated in: "Additional language directory"

The format of these text files is that of java properties.

For anyone unfamiliar with this format, know that a properties file has a title and after this a variable number of labels with its value similar to the following:

#TITLE

# xxxxxxxxxx

LABEL1=text 1

LABEL 2=text 2

...

Labels should remain unmodified and texts should be modified depending on the translation in the chosen language.

In addition, there are also some files in RTF format that you will have to translate with an RTF editor (a typical editor for this format is Office Word).

If you create the translation for an additional language different from those available in the application, you can send it to me at (frojasg1@hotmail.com), if you would like, and I will include it in upcoming versions of the application .

### Tab: Game Extractor

This tab looks like this:

Interfaz de usuario gráfica, Texto, Correo electrónico

Descripción generada automáticamente

On this screen, there are two panels:

* **Games Extractor**:
  + **Use of the experimental game extractor**. This element allows you to control if the experimental game extractor is to be used.

The experimental extractor of previous versions is substituted by a new experimental extractor that in tests has worked better than the previous experimental extractor and is also better than the normal extractor.

Therefore, if this box is selected, the new experimental extractor will be used, which takes into consideration parentheses and brackets to decide which variant belongs to each move.

* **Game language**: In this panel, you can change the language used for chess matches.

There are two drop-downs:

* + **Language to parse the games from**. Allows you to select the language of the games to be read from the PDF.
  + **Language to show games**: Allows you to select the language in which the matches will be shown in the text areas enabled for it.

The option (**FIGURINES**) (♔♕♖♗♘) displays the games in algebraic figure notations

The language for chess matches is a simple configuration in which it is necessary to indicate to the application the initials of the names of the pieces to be used to write the moves in algebraic format.

There are several predefined languages, and if configuring a language that is not available in the drop-down is desired, it is always possible to choose the first option (personalized), which allows you to directly introduce the initials of the pieces (they must be in the correct order for the application to work properly and without any other character in between, not even spaces).

In English those initials would be the following:

KQRBN

[King –Queen–Rook –Bishop –Knight]

### Tab: Tag Extractor

We understand the data associated to a game by tags (such as WhitePlayer, BlackPlayer, WhiteElo, Event, Site, …).

Many times, this information is explicitly stated in the book games, and in this application version, the game extractor tries to obtain them.

Since the way to capture said information is not standard, the application allows to configure patterns to try to extract said information correctly.

On this tab you can control the configuration for the extraction of those tags, and that setting will be the one used during the extraction of games of the books.

The application has a default tag extraction setting that resulted of tests from various books and they work reasonably well for those types of tag formats.

If you find any book in which the application cannot extract the tags, and you would like to change the settings to try to extract said tags, you may be interested in reading this section and everything related to tag extraction.

For anoptimal understanding about how this setting works, reading section (***7*** - ***Tag extraction***) in which the concepts used for this setting are explained is recommended.

The tab looks like this:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

On this screen, there are various panels.

Each one of those panels is comprised of a drop-down list and a series of buttons on the right, that allows you to:

* **Add element** (**+**). Gives you the option of adding an element to the drop-down list, by opening a window to edit the necessary data to do it.
* **Eliminate element** (**-**). Gives the possibility to eliminate an element from the drop-down list.
* **Modify element**. Allows you to modify the data of the element selected.

When the drop-down lists display a list of options, the name of the element is displayed in a color that indicates if that element is active or inactive, to recognize that feature of regular expression profiles from a view.

Some drop-down lists have additional buttons that will be explained later.

Drop-down lists are available in cascading style, in other words when another element in the parent drop-down list is selected, the child drop-down lists also modify their content appropriately, maintaining the last known state.

The panels in this tab are the following:

* **Profile File Settings**:

Interfaz de usuario gráfica

Descripción generada automáticamente con confianza media

* + **Files**. This drop-down list allows you to select the file for which the configuration is to be displayed or modified.

When the selection changes, the drop-down lists of the other panels change their content appropriately.

Profile file settings can be added, eliminated, or renamed.

When you click to add or rename, a window like this appears:

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente

A series of additional buttons exist.

These are the buttons from left to right:

* + - **Activate all**. Gives you the option to activate all regular expression profiles.
    - **Deactivate all**. Gives you the option to deactivate all regular expression profile.
    - **Export**. Allows you to export the configuration file selected.
    - **Import an XML file**. Allows you to import an external XML file.
    - **Import default XML**. Allows you to import the XML configured exactly with the initial configuration.
* **Configuration of regular expression blocks**:

Aplicación

Descripción generada automáticamente con confianza baja

* + **Blocks**

In this drop-down list, you will find the blocks of the selected XML file or there will be those that use profiles for tag extraction of the same file.

Those blocks can be added, eliminated, and edited.

* **Configuration of regular expression profiles for tags**:

Interfaz de usuario gráfica, Aplicación, Teams

Descripción generada automáticamente

* + **Profiles**

In this drop-down list, regular expression profiles are configured for the extraction of tags.

Those profiles can be added, deleted, or edited.

Also, further to the right of the drop-down list and the standard buttons (+, -, edit), there are some additional buttons which, from left to right are:

* + - **Activate all**. Allows you to activate all the profiles in the drop-down list.
    - **Deactivate all**. Allows you to deactivate all the profiles in the drop-down list.
    - **Activate current**. To activate the profile selected without entering settings.

### Tab: Position recognizer

The tab looks like this:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

The position recognizer allows you to configure that aspect of the application.

* Functionality can be activated or deactivated.
* Board Rotation Mode:

Allows you to choose the way positions are detected (with whites below or blacks below).

Options:

* + **Automatic**. Allows the application to decide if the whites are below or not in each one of the identified boards.
  + **White Player always below**.
  + **Black player always below**.
* Number of threads to use to recognize positions.
* Reestablish.

This option exists if on some occasions the position recognizer is trained incorrectly, and is recognizing pieces in the wrong places or changing some pieces for others.

It can happen in the case of human error.

There are the following options:

* + Reestablish. Erase all patterns learned since installation.
  + Reload. Return to upload the latest saved data (since the last accepted configuration change, or from the start of the session).

### Tab: Engines

The tab looks like this:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

**The application only recognizes UCI Type Engines**.

The tab to configure engines has two elements:

* A **link** that allows you to visit a page in which there are various interesting engines, some of them free.

I discovered this link when I tried the application Crafty, and now I´m sharing it with users of this application.

* **Configuration of UCI Engines**. It is a drop-down list that has options to add, delete, or edit engine settings.

When you press the add element (+) or the change current element button, the window to configure the engine is opened:***5.11*** - ***Engine Configuration Window***.

### Common panel to accept the changes

As seen in each of the tab images of the preferences window, there is a common panel at the bottom which has three buttons:



* Cross: Discard changes and close the configuration window.
* ✓Check: Accept changes, consolidate them and close the configuration window.
* Arrow: Revert the configuration settings to their values as of opening the preferences window, and continue editing the configuration parameters.

## Window of detached chess game

To edit, copy or paste variants from one game to others (which is many times necessary to solve the ambiguities arising from scanning a PDF for games), it is useful to have the tree of variants of the several games available in detached windows, all of them visible at once.

Owing to the necessity to open that type of windows, there are two menu options which allow opening a game in a detached window.

* In the pop-up menu of the games table in the main window.
* In the Windows main menu.

This kind of detached window can be configured to be always on top, over the main window (although this behaviour can be changed from the preferences window).

A window of this type looks like this:

Imagen que contiene captura de pantalla

Descripción generada automáticamente

### Pop-up menu

The component which has the list of variants in the main window has been reused here, and it also has the same pop-up menu:

Imagen que contiene captura de pantalla

Descripción generada automáticamente

This menu was already explained in the section on the main window, although in this section we will see more details for the edition of games:

* Select and copy subvariant: When this option is chosen, the subvariant is selected that started in the move which received the mouse right-click .

After choosing this option, the subvariant will appear in the detached window with a yellow background.

Imagen que contiene captura de pantalla

Descripción generada automáticamente

* Clear selection. It allows deselecting the previously selected subvariant.
* Paste. It allows pasting the selected subvariant (with a yellow background), after the move which received the mouse right-click.

In this case, the move number and player’s turn are checked, to avoid making inconsistent copies of subvariants.

* Erase. It allows erasing the subvariant starting at the move which received the mouse right-click.

The menu options for pasting and erasing a subvariant cannot be undone, so you have to be especially careful to avoid making mistakes.

It is possible to paste a selected subvariant into a different game (which can be opened in a detached window), or it can also paste this subvariant into the text area of the game in the main window.

## Analysis window

The window looks like this:

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

One or more panels can be opened by analyzing the position shown on the board.

On each analysis panel you can select:

* The engine (from among the UCI Engines configured in ***5.11*** - ***Engine Configuration Window***)
* The number of variants. If the motor allows it, N analysis variants can be configured with the same engine.
  + Each variant has its own text box to indicate the most promising variant with a button to the left that allows you to paste that variant to the game in the main window.
* Time of analysis. It is the time, in seconds, to invest in the analysis.
* Button to stop/restart analysis

For each engine panel (if allowed), various variants and time (in seconds) to invest in the analysis can be configured.

## Window what is new

In this window, a document appears that explains what´s new in the version.

The window looks like this:

Texto

Descripción generada automáticamente con confianza media

## About window

In the about window the greetings and urls of the web sites are shown from which any article, source or resource has been used.

The window looks like this:

Interfaz de usuario gráfica, Texto

Descripción generada automáticamente con confianza media

## License window

In the license window, the license that was accepted the first time the application run is shown.

The window looks like this:

Texto

Descripción generada automáticamente

## Engine Configuration Window

This window allows you to visualize and configure data from a particular motor.

The same window has two slightly different behaviors depending on whether it has been opened:

### Configuration of a new engine

When this window is opened from the add a new engine button (+) a window like this appears:

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente

You can choose the path where the binary of that engine is located.

It is also possible to add input parameters to the engine invocation.

You can also give it a name, which cannot coincide with any of the existing ones.

If the engine is recognized correctly, the application will propose a valid name based on the engine data.

It is also possible to access the engine setting. Although that part is programmed, it has not been thoroughly tested so if errors appear, you can get in contact with the author to inform him/her about them.

### Configuration of a new engine

When this window is opened from the configure engine button, the following window appears:

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente

You can check the name of the engine and the route where the binary of that engine is located.

The engine configuration can be accessed. Although that part is programmed, it has not been thoroughly tested so if errors appear, you can get in contact with the author to inform him/her about them.

## New game window

The window looks like this:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

This window collects the data of a new game with time control, being able to choose the details:

* For each player:
  + If they are humans or engines.
  + Elo
  + Time control.

There is also a selector that allows you to choose if:

* A new match has to be created
* Or the match will continue from the starting position shown on the board.
* In case of selecting “continue game from the current position” the checkbox that allows to choose wether you want the game to be the main line can be useful (this selection will only apply to the start of the game, since the rest of the moves will be inserted as the main variant from the position where they are).

## Game Data Window

In this screen the current game data can be edited:

* White Player.
* White player ELO.
* Black player.
* Black player ELO.
* Place.
* Event.
* Round.
* Date.
* ECO (opening code)

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente

## Game analysis window

The window looks like this:

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There are several components in the window:

* Progress section. Displays the progress of the analysis.
* Engine section. Allows you to choose the engine to run the analysis with, as well as add, delete or configure engines to the list of known engines. (Changes are persistent)
* Spinner with the value in seconds that the engine will take to analyze each move.
* Section with the start and cancel buttons.

The analysis will be performed for:

* The current game (in case of having opened the window using the option from the global menu)
* The first selected game in the table (first row in light blue) (if you have opened the window via the pop-up menu in the game table).

Once the analysis process begins, it can be canceled (by pressing the cancel button). In this case, the analysis will stop immediately after obtaining the result of the next position from the engine.

If the analysis is not canceled and the same is not empty, a game will be created with the main line of the original analyzed game, and for each move, the engine analysis result will be included.

The analysis could be empty if the engine did not return any analyzes, as it could happen, for example, when the engine is configured to limit the skill (this configuration can be useful to play a game against a level below the maximum, but is not useful to perform an analysis).

When the game has been analyzed, comments are added to facilitate the localization of those analyzes in the variation tree.

Some game tags (Annotator and Event) are also modified to add the information that the game has been analyzed with this application.

# Sample edition of a scanned chess game with ambiguities

## Practical case

In this section we will see an easy example on how to solve the limitations of the *scan PDF for games* module.

We will see how to join the different parts in which the game was split due to the ambiguities which could not be solved automatically.

The game of the example is this one:

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After having scanned the games of the PDF, we see that the game was split in two parts, and between these two parts there is a fragment which could not be extracted.

We will see how to edit the missing fragments and how to paste the second part of the game in the appropriate position of the first part extracted, as well as how to have all variants together in the same game.

* We get the first part of the game in the main window (by double clicking on the game in the game table):

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* We open the second part of the game in a detached window:

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* This is what it will look like after opening the second part of the game:

Imagen que contiene captura de pantalla

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* We stand on the move where we have to reproduce the moves of the first missing variant (11… Bxd5 12. Qh5+ +-) [the equivalent in Spanish, as in the source: (11 … Axd5 12. Dh5+ +-)], so we have to stand in the move: 11. Nxd5 (Spanish: 11. Cxd5) (the move of the current position has a grey background, to be distinguished):

Imagen que contiene captura de pantalla

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* On the board, we reproduce by hand the two moves of the first missing subvariant (11… Bxd5 12. Qh5+ +-) [the equivalent in Spanish, as in the source: (11 … Axd5 12. Dh5+ +- )]:

Imagen que contiene captura de pantalla

Descripción generada automáticamente

* We stand on the move (11… c5), where we can start to add the second missing subvariant (12. Qf3+ Ke8 13. Bf4) [The Spanish equivalent: (12. Df3+ Re8 13.Af4 )]:

Imagen que contiene captura de pantalla

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* We reproduce the subvariant by hand (dragging the pieces with the mouse to make the moves):

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* We select the second part of the game (which we had in the detached window):

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Descripción generada automáticamente

* After selecting the whole variant of that game, we will have the next image:

Imagen que contiene captura de pantalla

Descripción generada automáticamente

* We stand on the appropriate move to paste the second part of the game, which we had already selected ( 9… e6):

Imagen que contiene captura de pantalla

Descripción generada automáticamente

* We paste the selection in that position (we must go over that move and open the pop-up menu by right-clicking):

Imagen que contiene captura de pantalla

Descripción generada automáticamente

* This is how it looks after pasting the second part of the game onto the move of the previous figure:

Imagen que contiene captura de pantalla

Descripción generada automáticamente

* We hover over the first move of the variant that we have just pasted (only as an easy check):

Imagen que contiene captura de pantalla

Descripción generada automáticamente

* After having the whole game joined, we have to erase the game that contains the second part of the game of the example (which we have just pasted over the current game):

Imagen que contiene captura de pantalla

Descripción generada automáticamente

* After erasing that game (which was no longer useful), the following game will become the current one:

Imagen que contiene captura de pantalla

Descripción generada automáticamente

## Another more complex case

In this section we will see another example of the limitations in the module for the extraction of games.

In this case the game has a more complex variant tree, and the application has made a mistake when obtaining the variant to which some moves belonged to.

In this case it is obvious that there are mistakes, because some illegal moves are produced.

These illegal moves are detected by the application, and they are marked in a red background.

In more complex cases, some errors can be produced which the application may not be able to detect because they would be legal in the variants they had been placed in.

In a normal situation this should not happen, but it could easily happen in the case of games with many variants, because there are some situations in which the application cannot deduce rightly which variant the move belonged to (mainly because it does not expect to find brackets when extracting the games from the PDFs —which would help to know which subvariant the move belongs to— because it is possible that those brackets won’t appear).

It is thus very difficult to determine which variant a move belongs to when the game has a complex tree of variants.

The game of this example is this (in Spanish):

Imagen que contiene captura de pantalla

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* The first part of the game is this:

Imagen que contiene captura de pantalla

Descripción generada automáticamente

Two illegal positions can be observed in the tree of variants obtained.

This means that when one of the moves with a red background is selected (or any of their derived subvariants), the following message will appear in the board of the main window:

Imagen que contiene captura de pantalla

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It is recommended to solve illegal positions by hand.

If there are too many errors in the game, all the parts of the game might be discarded (erasing the parts obtained) and a new game created, this time making all the moves by hand.

It is not necessary to solve all illegal moves before saving the list of games, because the application allows saving them anyway.

When games with illegal positions are loaded, the backgrounded red indications will appear again, and also the messages of Illegal position.

It is possible though that, if a resulting PGN saved with this application has illegal positions or unset initial positions some problems appear when trying to load it with another application.

# Tag extraction

We call all of the game data (other than moves and variants) tags.

PDF Manuals, many times have example matches, and usually, before those games, there are a series of lines containing the information of some of those tags: WhitePlayer, WhiteElo, BlackPlayer, BlackElo, Site, Event, Round, Eco.

Obviously, there is no pre-defined format that all publishers follow in all their manuals to display this data on matches, and each manual or even section of the manual shows that information in a particular format.

As game extraction would not be the same if that information was not available to us, this functionality allows you to contemplate various format types (configuring Profiles); and when the extractor detects a new game it attempts to match some profile between the previous lines of that game, and if a match is found with one of the profiles, the tags that that profile has defined are collected and assigned to the game that the extractor is about to process.

Doing this is no easy task, especially since no standard format to collect those tags exist.

In the tests carried out to validate the extraction of games, quite a few different manuals have been tested with a few tag formats, and they have resulted in a few Profiles that have been included in the default configuration of the application.

There may be tag formats that the default setting does not recognize, and in that case, it would necessary to configure those new formats in new Profiles that allow for their recognition during game extraction.

If no Profile is recognized in the extraction phase for a particular game then that match is not going to have those tags assigned and it will remain a little incomplete.

Sometimes that happens simply due to some irregularity in the extraction that causes the game to be sectioned.

Other times it is a new game in which the tags could not be obtained.

When that occurs, there are various options:

* Or we can set up some new Profile that matches that format (continue reading this section), and in that case, from that moment tag recognition will be automatic for that format.
* Or we open the game data window (***5.13*** - ***Game Data Window***), where the basic game can be entered by hand
* Or if we want to add a tag that is not basic, we can open the Tag Edit Window (5.3 - Tag editing window), although this example is a little costly.

This section will explain in detail the tag extraction system used in this application so that the user with the necessary knowledge can adapt the configuration for tag extraction to any type of book that has not been taken into account in the initial configuration that comes with the application.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

This configuration can feature one or more independent tag extraction configuration files that can work simultaneously.

This configuration is based on regular expressions, so that in the subsection (***7.4*** - ***Regular expressions***) some basic notions are given of what can be done with regular expressions and how.

In the subsequent sections, you will see how blocks are configured, which are like bricks in the extraction of tags, and later we will see how the Profiles are configured, which is the minimum unit to define a tag format.

In order not to bore the reader, the topics will be dealt with from the highest level down to the details.

To set up this functionality, you must open the preferences window, in the tag extraction tab.

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Descripción generada automáticamente

Within this tab, there are various panels:

## Files

The configuration is saved in files in XML format.

Various independent xml files can exist that can be applied simultaneously.

Every one of those files is made up of:

* **A set of regular expression blocks**. These blocks are the smallest unit of information to be collected, and in them, a pattern is defined that defines the content which when applied to a text will result give the value to be collected.
* **Set of regular expression profiles**. The profiles will contain a pattern of various correlative lines that will have to exactly coincide with the lines of text that contain the game tags.

## Profiles

A profile for the extraction of tags contains a series of line formats.

These lines can be optional (if optional they don't need to appear in the text to match).

For a profile to match with the lines that contain the game tags, they have to match all non-optional lines defined in the profile, and zero or more optional lines, in the same order in which they appear in the profile.

Each one of those lines is composed of an extended regular expression (regular expressions with blocks).

In turn, the blocks are composed of regular expressions that can optionally contain other blocks.

In case the user finds that a profile is malfunctioning (it is extracting tags poorly or it is incorrectly matching because the patterns are not specific enough), we have the option of deactivating the profile.

To find which profile corresponds to a recently extracted game, we will have the option of opening it directly from the pop-up menu of the list of games) (***3.2.1*** - ***Pop-up menu***), or from the Tag edit window (***5.3.3*** - ***Accepting, discarding and reverting changes***).

To see the options when defining tag extraction profiles, see the following section: 7.6 - Profiles configuration window for tag extraction...

This would be an example of a profile:

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This example profile is composed of various lines :

|  |  |  |
| --- | --- | --- |
| **Number**  **of**  **line** | **Pattern (regular expression)** | **Is**  **optional** |
| 1 | ^\s\*$ | SI |
| 2 | ^\(?%NUMBER%?\)?\s\*%PLAYER\_NAME%\s\*\(?%ELO%?\)?\s\*-\s\*%PLAYER\_NAME%\s\*\(?%ELO%?\)?\s\*\[?%ECO%?\]?\s\*;?\s\*$ | NO |
| 3 | ^%EVENT%\s\*,?\s\*%DATE%\s\*$ | NO |
| 4 | ^\s\*$ | SI |

Each line has a list of tags to extract to which one of the blocks defined in the pattern will be assigned.

Tags to extract for line 2:

|  |  |
| --- | --- |
| **Tag** | **Block to extract** |
| White | %PLAYER\_NAME%[1] |
| WhiteElo | %ELO%[1] |
| Black | %PLAYER\_NAME%[2] |
| BlackElo | %ELO%[2] |
| ECO | %ECO%[1] |

Tags to extract for line 3:

|  |  |
| --- | --- |
| **Tag** | **Block to extract** |
| Event | %EVENT%[1] |
| Date | %DATE%[1] |

When this profile is applied to this game header in a PDF:

Imagen que contiene Texto

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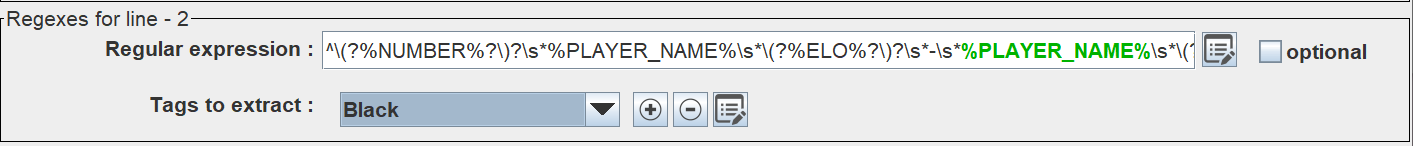
The tag extract matches with the profile name “Edami-2”, and the tags extracted are the following:

|  |  |
| --- | --- |
| **Tag** | **Value extracted** |
| **White** | Ivanchuk,V |
| **WhiteElo** | 2480 |
| **Black** | Angelov,K |
| **BlackElo** | 2380 |
| **ECO** | B01 |
| **Event** | Varna |
| **Date** | 1987 |

As we have seen, a Profile is composed of various lines

### Profile lines

The windows to configure profiles are composed of various panels that describe the patterns of the lines.



The panels, which contain the configuration of a line, are composed of the following elements:

* + **Regular expression**. Contains the pattern that the line has to have to match.

It will be a regular expression that will have one or more blocks.

Blocks are regular expressions that are taken as a block of unitary text.

To extract the value of a tag, you must define the pattern that has to comply with that tag configuring a block for each type of tag pattern.

The more specific those patterns are, the less probability there is for ambiguities in the detection of those tags.

Regular expression of the lines will have the restriction that you can not make use of parentheses (creation of groups), and if it were necessary to create groups, it should be done by creating new blocks that are designed to create reusable groups in a simple way with a specific name.

* + **Regular expression edit button**. It allows you to edit the regular expression and test it. ***7.5*** - ***Regular Expressions Edit Window***
  + **Tags to extract**. Drop-down list with the tags to extract in this particular line.

Tags can be added, deleted, or edited.

When a tag is edited, a configuration window opens that allows it to be assigned to one of the regular expressions blocks. ***7.5*** - ***Regular Expressions Edit Window***

When this line matches, the tags will give value to the text corresponding to the block in a particular line.

* + **optional**. Allows you to select if. The line is optional or not.

To extract the value of a tag, you must define the pattern that has to comply with that tag configuring a block for each type of tag pattern.

The more specific those patterns the less probability that there will be ambiguities in the extraction of those tags.

## Blocks

Each xml file of regular expressions for tag extraction has a series of regular expression blocks that allow you to exactly define a pattern for its content.

Each one of those blocks could designate a data type to the candidate game to be collected.

Each block has a name and pattern (regular expression) associated with it.

The blocks can not contain the character “%” in their name and are referenced in a regular expression by surrounding the block name between two “%”.

So, for example, we could define an ELO block, and we could put it as the pattern that was made up of 3 or 4 digits.

That way, whenever in a regular expression of the profiles, an element %ELO% appears, we would already know that it refers to the ELO block, which is composed of 3 or 4 digits, and we could pick it up and assign it as game data WhiteElo, or BlackElo, depending on the position of the line where that ELO block was found.

The idea is to have a different block for each type of game data (tag) candidate to be collected and to use the names of those regular expressions blocks to indicate the assignment of the block to a particular game (tag).

The block panel of the tag extractor tab in the preference window:

Imagen que contiene Tabla

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Allows you to add, delete, and edit blocks

Clicking the new block (+) or block editing option, opens the regular expressions edit window, customized for blocks:***7.5*** - ***Regular Expressions Edit Window***.

## Regular expressions

The regular expressions allow you to define a text pattern.

This pattern can be used to decide if a given text complies with the pattern or not, or to extract certain elements from that pattern applied to a particular text.

These two regular expression use cases will be used in this system of tag extraction.

Regular expressions may consist of normal characters and special characters.

If in the pattern you want to make a match with a special character, but not in its special aspect but its literal aspect, a backslash (\) will have to be added before the special character. That will cause the special character to lose its special value and becomes literal.

Logically, the backslash in turn is a special character, so if we want to establish a match with the literal backslash “\”, we have to place backslash in front: \\, so that it loses its special aspect.

Main special characters:

* . (point). Matches with any character.
* \d (digit). Matches with any numerical digit.
* \s (space). Matches with any spacing character (space, tabulation, end of line …)
* \w (word character). Matches with any word character [a-zA-Z0-9] and accentuated vowels or with umlauts or with word letters from other alphabets.
* [characters (set of characters enclosed within brackets). Matches with any of the characters listed in brackets. To designate character ranges use the – (minus). In other words, the expression [a-zD], will match with any lowercase character (de la ‘a’ a la ‘z’), or with the uppercase letter D.
* [^characters](excludes set of characters enclosed within brackets). Matches with any character except with the characters listed in brackets.

Works in the same way as the previous point but with a ^ (circumflex accent) in front.

All of these special characters, as well as the literal characters, match with a single character in the text that is being matched.

To define matches with a different number of times, you will have to apply some of the following modifiers:

Special characters that limit the number of times of an element:

* \* (asterisk). Zero or more times
* ? (query). Zero or once.
* + (more). One or more times.
* {n} (keys). n times
* {n1,n2} (keys). from n1 to n2 times both included.
* {,n2} (keys). from 0 to n2 times both included.
* {n1,} (keys). from less than n1 times.

The characters that limit the number of times, apply to the element just right before, which can be:

* A normal character.
* A single character from a list of characters [characters] (bracket)
* A group of characters (enclosed within parenthesis)

Special characters that indicate start position and end within the pattern:

* ^ (circumflex accent). Start of the line.
* $ (dollar). End of the line

Examples:

|  |  |  |
| --- | --- | --- |
| **Regular expression** | **Text** | **¿Match?** |
| .\* | Any text | Yes |
| [\w]+ | Any text with 1 or more word characters | Yes |
| [a-z] | plane | Yes |
| [a-zA-Z0-9] | Avión | No |
| Palabra. | Word | No |
| Palabra. | Words | Yes |
| Palabra. | Word. | Yes |
| Palabra\. | Words | No |
| Palabra\. | Word. | Yes |
| \\ | \ | Yes |
| \\. | . | No |
| \\. | \a | Yes |
| \\\. | \. | Yes |
| \\\. | \a | No |
| a{1-} | aaaa | Yes |
| a+ | a | Yes |
| a?b | b | Yes |
| a?b | ab | Yes |
| [Wword]{8} | Wordword | Yes |
| [Wword]{8} | droWword | Yes |
| [ba]+ | abaaaabba | Yes |
| [ab]+ | abcaabb | No |
| [^ab] | cdepojl | No |
| [^ba] | F | Yes |
| (Palabra)?word? | word | Yes |
| (Palabra)?word? | Palabrawor | Yes |
| (Palabra)?word? | Palabra | No |
| \d{3,4} | 1700 | Yes |
| \d{3,4} | 2100 | Yes |
| \d{3,4} | 11000 | No |
| \d{3,4} | 79 | No |

That was a very quick summary.

If you are interested in learning more you can visit the following URL:

https://www.vogella.com/tutorials/JavaRegularExpressions/article.html

**Configuration Restrictions** :

* The regular expressions that will be used for tag extraction configuration, will not contain parentheses (), since the parentheses are used to locate groups that allow extracting parts of the pattern applied to a text.
* If carrying out basic operations with parenthesis is desired, blocks can be used.
* The only limiter to the number of times that can be applied to a candidate block to be extracted will be the (?)(question mark), which indicates optionality, matching when the pattern is found zero or one times.

## Regular Expressions Edit Window

In this chapter we will see some concepts to better understand the handbook and how the application works

There are several models of the regular expression editing window, but they all allow you to do the same things, which include editing the regular expression and performing tests on the regular expression (such as whether a text meets the pattern, or block text extraction).

Sample window.

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In the edit window you can:

* + **Edit the regular expression**.

When the regular expression is edited, there is (on-the-fly formatting) as the user is typing.

If it is detected that a regular expression is incorrect, it will be marked in red.

If the regular expression is valid, the selected block will be marked in green.

* + **Activate/deactivate autocompletation**.

See how this functionality behaves:***7.5.1*** - ***Activation of the Autocompletation window***.

* + **Select a block present in the regular expression** which will be the one that will be associated with the tag (if the user has opened the tag assignment edit window), or it will be the block that will be used in tests to carry out the extraction from the test text (in case the user has opened the window from regular line expression editing, or block editing).

Other visual elements are used to make tests with the regular expression:

* + **Test text**. It is the test upon which the test is carried out (simulating a real line to be extracted).
  + **Check for matching**. Button to the right of the text component that allows checking if the text complies with the regular expression pattern.
  + **Substitution button**. Allows you to extract the block value when the pattern is applied to the test text.

### Activation of the Autocompletation window

Autocompletion functionality can turn on or turn off at all points where regular expressions can be edited and make it so that when the user is editing the regular expression when he/she writes a block invocation start (%), the autocompletion window is opened, with a list of existing blocks that start as the user is typing. This can be useful so that it is not necessary to remember the exact block names while the regular expression is being edited.

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Descripción generada automáticamente

When options appear in the autocompletion window, the following actions can be taken:

* Keep writing. In this case, as the user writes, the options are adapted to the typed text and when the user finishes writing the block (type the second %, closing the block), or when the selection is empty (there are no matches for the block that the user is typing), the autocompletion window will close by itself
* Press escape. If the user presses escape while the autocompletion window is open, this will be closed.
* Selecting with arrow keys. You can move through the available options in the window with the cursor arrows.
* Press Return. By clicking Return, the user selects the current option, and that option will be written in the text component.
* Double click on one of the options in the window. This option is the same as pressing Return.

### Regular expression configuration example

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

|  |  |  |
| --- | --- | --- |
| **Number**  **of**  **line** | **Pattern (regular expression)** | **Is**  **optional** |
| 2 | ^\(?%NUMBER%?\)?\s\*%PLAYER\_NAME%\s\*\(?%ELO%?\)?\s\*-\s\*%PLAYER\_NAME%\s\*\(?%ELO%?\)?\s\*\[?%ECO%?\]?\s\*;?\s\*$ | NO |

We analyze the regular expression:

**^** - Start of the line

**\(?** - opening parenthesis (optional) (observe the backslash in front to remove special value from the parenthesis and to make it literal).

**%NUMBER%?** - Block that represents a number (optional).

**\)?** – closing parenthesis (optional). (observe the backslash in front to remove special value from the parenthesis and make it literal).

**\s\*** - an indeterminate number of spaces of any type. (could be zero spaces). (Now the backslash gives a special meaning to the character ‘s’)

**%PLAYER\_NAME%** - Block representing a player name.

**\s\***

**\(?**

**%ELO%?** - Block representing an Elo (optional).

**\)?**

**\s\***

**-** (Dash, literal)

**\s\***

**%PLAYER\_NAME%**

**\s\***

**\(?**

**%ELO%?**

**\)?**

**\s\***

**\[?** – opening bracket (optional). (observe the backslash in front to remove special value from the bracket and to make it literal).

**%ECO%?** – Block representing an ECO (optional).

**\]?** – closing bracket (optional). (observe the backslash in front to remove special value from the bracket and to make it literal).

**\s\***

**;?** - (Optional Semicolon).

**\s\***

**$** - End of the line

In this case, the blocks used in this pattern are the following:

|  |  |
| --- | --- |
| **Block Name** | **Pattern (regular expression)** |
| **NUMBER** | [\d]+ |
| **PLAYER\_NAME** | [\w\s\.,\\/]+ |
| **ELO** | \d{3,4} |
| **ECO** | [A-E]\d{2} |

Tag Mapping:

|  |  |
| --- | --- |
| **Tag** | **Block to extract** |
| White | %PLAYER\_NAME%[1] |
| WhiteElo | %ELO%[1] |
| Black | %PLAYER\_NAME%[2] |
| BlackElo | %ELO%[2] |
| ECO | %ECO%[1] |

Exercise:

Write which would be the result of the tag extraction for this line configuration applied to the following text:

Ivanchuk,V (2480) - Angelov,K (2380) [B01]

This example is from line 2 of the example used in 7.2 - Profiles. In that example, the results of the tag extraction for this real example can be seen.

## Profile configuration window for tag extraction

The window looks like this:

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Descripción generada automáticamente

The window is made up of various panels:

* Upper Panel with the Profile name. Also allows you to activate and deactivate the profile.
* Line Panels.
* Lower panel to cancel, accept, or reverse changes.

Also, the autocompletion window can be activated or deactivated.

Tag extraction profiles are composed of one or more line panels (that is where patterns that have to match each line of real text are configured).

When creating a profile, this profile appears with a single line panel.

However, you can add more, eliminate particular line panels or change those panels by order (the order of the panels will determine the order in which the lines have to appear in the text for there to be a match.

### How to add a new line panel

To add a new line panel you have to position yourself with the mouse on the panel where adding the new line is desired, and open the contextual menu with the right mouse button.

Various options will appear, among them:

* Insert line before.
* Insert line after.

When one of those options is selected a new line is created in the chosen position.

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Descripción generada automáticamente

### How to delete a line panel

To delete a line panel, you have to position yourself with the mouse on the panel that you want to delete and open the contextual menu with the right mouse button.

Various options will appear, among them:

* Delete line.

When that option is selected the line is removed from the marked position

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Descripción generada automáticamente

### How to change the position of a line panel

To change a position line panel you have to position yourself with the mouse on the panel that you want to move and drag it to a different position.

The panel that you are trying to drag is marked in yellow as you change the position of the mouse, it marks the target line where that line panel will be placed when the mouse button is released.

Interfaz de usuario gráfica, Aplicación

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# Position recognizer

This new functionality has been created to attempt to identify the positions of images that are right before the matches that do not start in the starting position.

If the application can resolve that position, you will be able to create a game in PGN format from any position, inserting the FEN string of said starting position to be able to navigate by the tree variant properly.

The application will attempt that procedure without user assistance.

The way it works is that during game extraction images with known positions may exist (for example, games that do begin with the starting position, and that, within a few moves, have placed an image of the position).

The game extractor trains the position recognizer with those known positions.

Once the games have been extracted from a manual, the position recognizer will continue processing training positions, and when it finishes the application offers the possibility to attempt to recognize the positions represented in the images of the manual, by right-clicking on the image and selecting the option that appears.

Once you have tried to recognize a position various things can happen:

* That the recognizer is not capable of identifying the grid with squares on the board. In that case, recognization will not continue.
* That the recognizer identifies squares on the board but is unable to identify the full position.

In that case, the user will be given the possibility of partially opening the recognized position on a board, and the user fills in the unrecognized pieces to train the recognizer in this way.

If this position is carried out without errors, after that training, the position can be recognized without user assistance.

You can see the window that opens to train the recognizer here:***8.1.1*** - ***Position edit window. Recognition Training***.

* That the recognizer identifies the full position. In that case, the option is given to open the position on a board and to copy the position to the clipboard (it will be able to be pasted in the starting position edit window).

If the current game does not have a starting position assigned, it is also possible for the recognized position to be assigned as the starting position of the game.

The recognizer preserves the positions learned when the application is closed.

Therefore, if the application is closed and is opened later it will still be able to identify positions learned.

### Position edit window. Recognition Training

When the position of the image could not be completely recognized (but it has been possible to detect the grid of the squares on the board), the user is offered the possibility of opening a position edit window, marking the squares that presumably contain a piece that has not been able to be recognized with a red mark.

The window looks like this:

Imagen que contiene Interfaz de usuario gráfica

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When the changes are confirmed, the application sends the association of the image and the position to the position recognizer.

If the changes are canceled, it is not a matter of training of the recognizer.

# Annexes

## Concepts used in the handbook

In this chapter we will see some concepts to better understand the handbook and how the application works.

* Comment.

Explanatory text that may enrich a move.

The useful comments are those that have been written by a chess expert who could analyse the particular position.

* NAG.

It is the way to refer to a series of standard comments inside a PGN file.

NAGs are optional signs which follow a move, indicating its quality.

Some possible NAGs are:

|  |  |
| --- | --- |
| NAG | Interpretation |
| $0 | null annotation |
| $1 | good move (traditional "!") |
| $2 | poor move (traditional "?") |
| $3 | very good move (traditional "!!") |
| $4 | very poor move (traditional "??") |
| $5 | speculative move (traditional "!?") |
| $6 | questionable move (traditional "?!") |

* PDF.

It is a standard file format which allows storing text and images making up documents and books.

* PGN.

It is a standard file format which allows storing a list of chess games with their variants.

The information of each game contains a header with details about the game (organized in TAGs) followed by the body of the game (a list of moves organized in variants).

It allows including comments and NAGs in every move.

* TAG.

A TAG is a simple parameter which provides information about the game (name of the players, their ELO, location, event, round, etc.).

The header of a game (in PGN format) is made of TAGs.

There are seven mandatory TAGs. The rest of TAGs are optional.

These are the mandatory TAGs:

1) Event (the name of the tournament or match event)

2) Site (the location of the event)

3) Date (the starting date of the game)

4) Round (the game’s round ordinal number)

5) White (the player of the white pieces)

6) Black (the player of the black pieces)

7) Result (the result of the game)

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