Instruction manual

for the software engineering internship project SoSe 2020

Table of contents

Program

arguments With these arguments the behavior of the program can be set. They are passed in the console when the program is started. If they are not passed, a default value or state is assumed.

Argument	*behavior with argument*	*behavior without argument*
`--no-gui`	The game opens in the console.	The game opens with GUI. (not yet implemented)
`--use-symbols`	Chess pieces are shown with UTF8 symbols.	Chess pieces are represented as letters.
`--print-background`	Colors the background with a checkerboard pattern.	Text without a background is output.
`--simple`	A human-to-human console game without GameMode selection is started immediately.	The game opens with the initial GameMode selection.

Console

GameMode selection before the game

human versus computer

human plays white

input: **`WC`**
output: a game human (white) vs. Computer (black) starts up.
Example:

```
Selected: [WC] Human playing white vs. Computer
white begins.
```

Human being plays black

Input: **`BC`**
Edition: A game human (black) vs. Computer (white) starts up.
Example:

```
Selected: [BC] Human playing black vs. Computer
white begins.
```

Human versus Human

Input: **`HH`**
Edition: A human versus human game is started.
Example:

```
Selected: [HH] Human vs. Human
white begins.
```

Commands during the game

displays the captured pieces

Input: **`beaten`**
Edition: List of captured pieces
Example:

```
The Following pieces have been captured
ppb PPR
```

run

inputtrain: start and end positions separated on the chessboard with a hyphen and possibly an indication of the conversion of Peasants in the form of a trailing capital letter of the desired conversion.

Output:

for a valid move: *new score* **`+! Echo of entry`**

for an invalid move **`:! Move not allowed`**

no syntactically correct entry **`:! Invalid move`**

Example: `e2-e4` or `E7 e8Q`

maketrain undo / redo

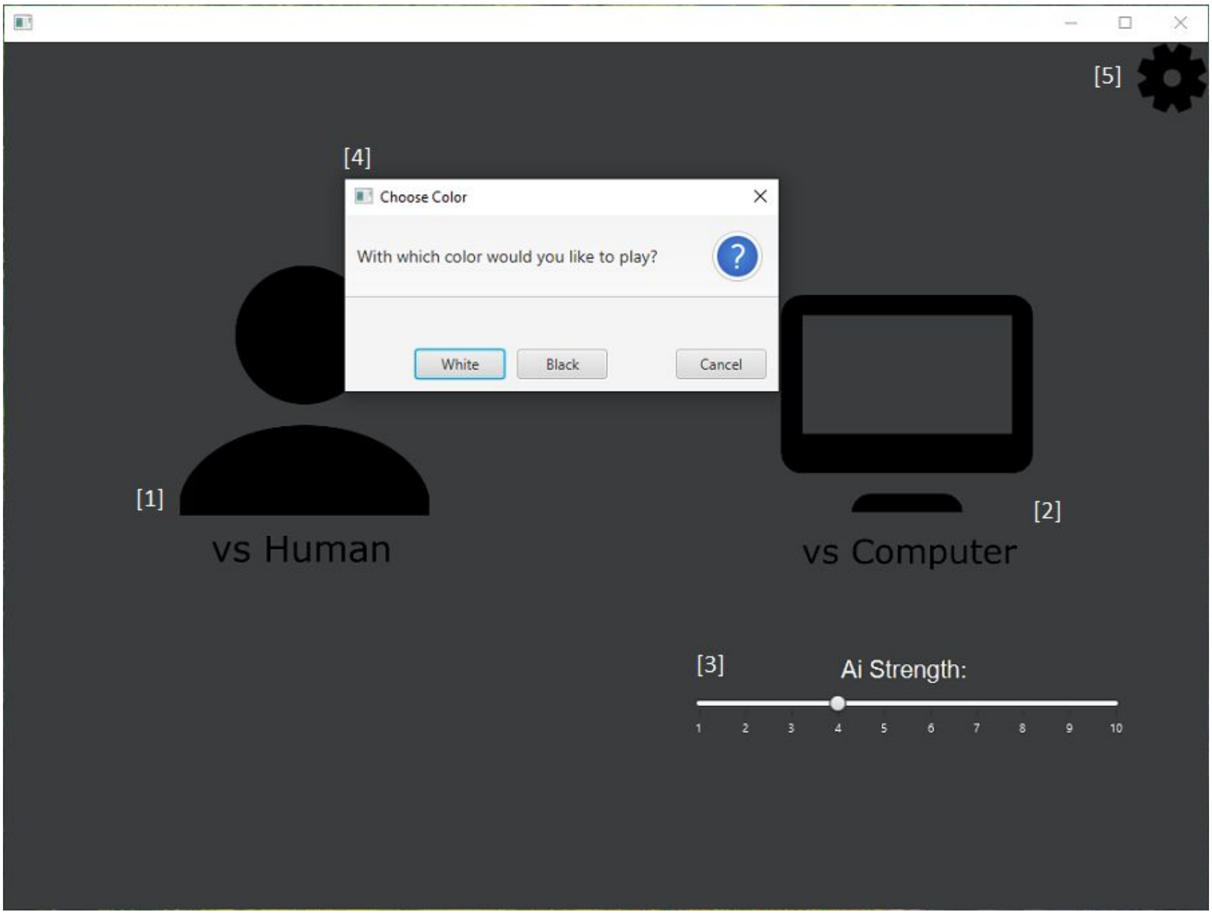
command: `undo` or `redo`
output: as long as undo / redo possible: *previous* or *subsequent* score
if not possible: `Impossible journal operation!`

End of the game

When the end of the game is reached (by checkmate or tie), the winner is issued and the program ends.

GUI

main menu



Choose Color

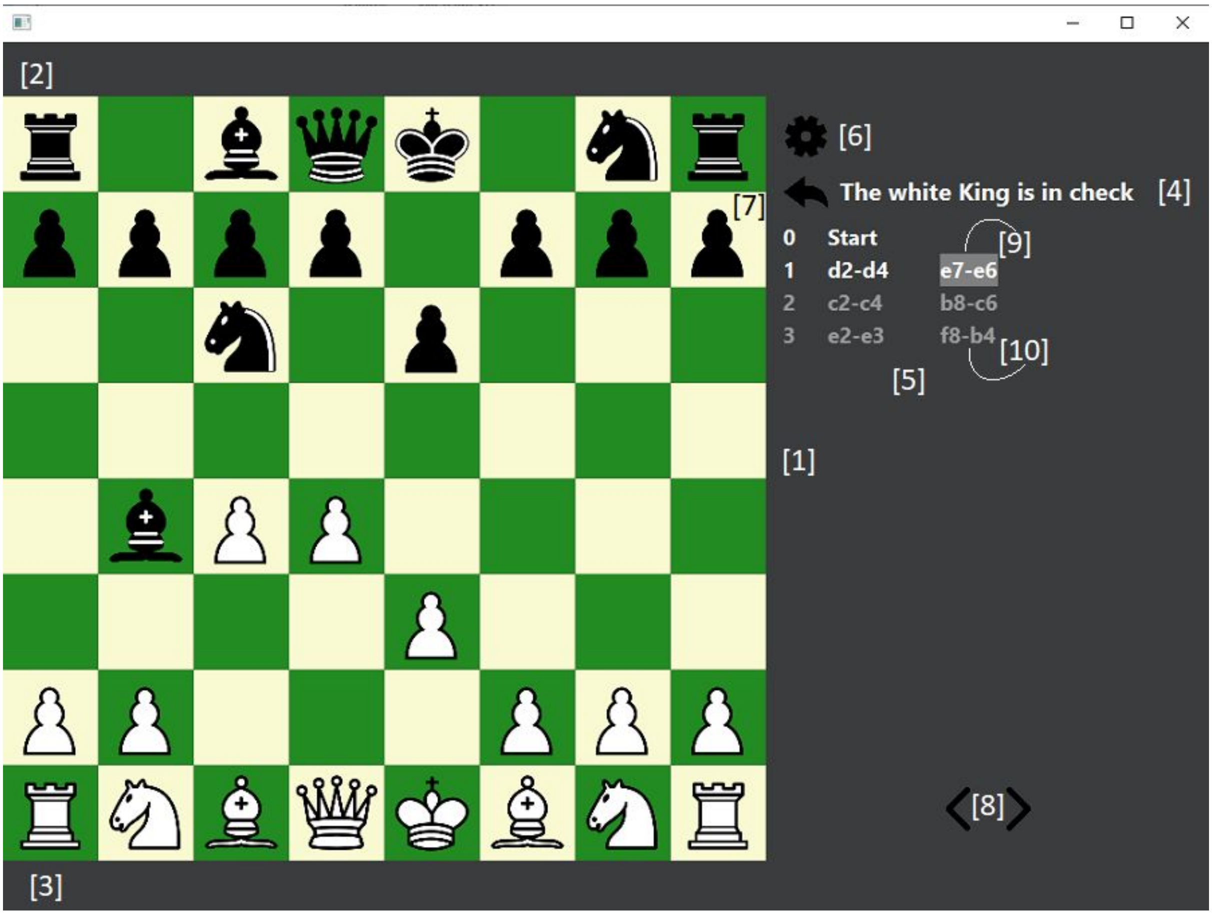
With which color would you like to play?

When the program is started, the main menu appears. Here you can choose between a game *against another teammater* [1] or *against the computer* [2].

When playing *against the computer* , the strength of the AI can beusing the *controller* adjusted[3]. With being *1* the weakest andsetting. *10* the strongest The stronger the AI, the longer it takes to calculate the moves. By default, the strength is set to *4* .
Aalso appears *pop-up* [4], in which you can choose which color you want to play.

If you have decided to play against the computer, a pop-up will appear, from which you can choose whether you *white* or *black* want to play. Regardless of this, you have the option ofthe *settings* calling up[5] (see below).

Game



The white King is in check

0	Start	
1	d2-d4	e7-e6
2	c2-c4	b8-c6
3	e2-e3	f8-b4

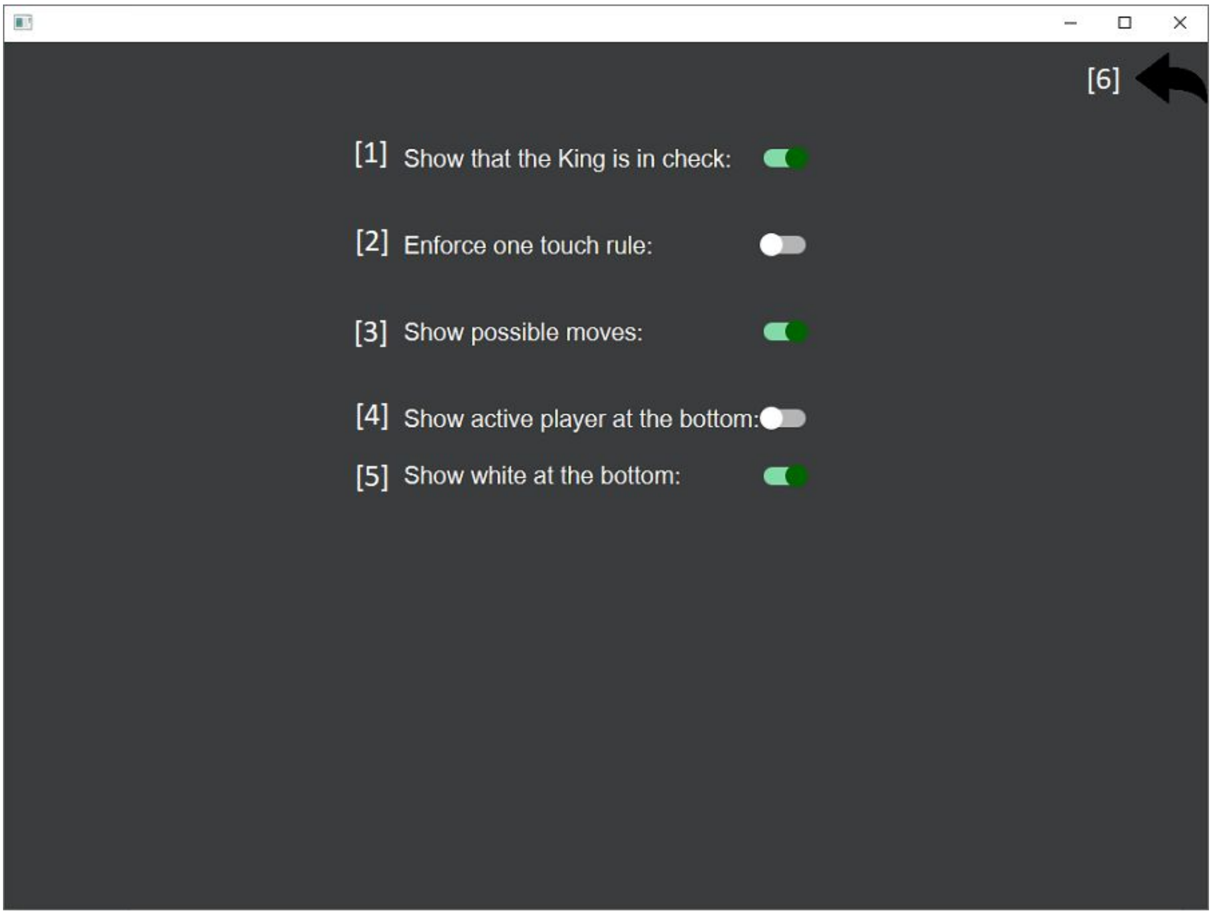
After a game has been selected in the main menu, theappears *game view*. As can be seen in the figure, the 2D chessboard is shown centrally with the conventional figures [1]. In addition, the figures that hit the respective side are shown at the top and bottom of the chess board [2] and [3]. To the right of the chess board is an *indicator* [4], which shows whether a player is in chess and at the end of the game the outcome of the game.

Below the display is a *history* [5], which shows all previous trains. To the right of the chessboard is a *wheel* [6] with which the settings can be opened (see below) and an *arrow* [7] with which you can return to the main menu when a new game is to be started. Below the history twoare *arrows* [8]used in the game features *reversed* tomake(left arrow) or toundone trains *repeat* (right arrow).

Furthermore, a previous gameclicking on the corresponding *move* state can be restored in the history by[9]. The current train is always grayed out.

As long as no further moves have been made, subsequent scores can beclicking on the corresponding *greyed out field* restored by[10]. If the player makes a move instead, the future history is deleted and the game continues from the current game.

Settings



[1] Show that the King is in check: ●

[2] Enforce one touch rule: ○

[3] Show possible moves: ●

[4] Show active player at the bottom: ○

[5] Show white at the bottom: ●

The settings allow personalization of the gaming experience. With the *arrow* [6] you can return to the last view, i.e. the main menu or the active game. There are a total of 5 settings:

[1] Here you can set whether it should be shown that the king is in chess.

[2] Here you can choose whether, after clicking on a figure, you can “let go” of it again and select a new figure.

[3] With this setting you can decide whether you want to see all possible moves that you can make with a selected figure.

[4] If the fourth setting is activated, the currently active player is always displayed on the lower side of the board. This is particularly useful in the game against a human teammate, so that no player has to look upside down on the board.

[5] The fifth and last setting determines which color should be displayed on the lower side of the board. By default, the white figures are shown below. If the setting is activated to show the active player on the lower side of the board, this setting is not displayed.

Draw

Draw by offer is not implemented in this game, because in the case of human versus computer, the game can simply be ended. There are no disadvantages for the player because scores are not saved. In the case of human-against-human, the players can agree this among themselves. Since it is not a network game, both players are in the same room.