

Software Requirements Specification

For

Classic King and Rook Chess Endgame

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19-11-2016

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1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of the **Classic King and Rook chess endgame**. In chess and chess-like games, the endgame (or end game or ending) is the stage of the game when few pieces are left on the board.

It will illustrate the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and complete declaration of the system. It will also tell how the system will respond to external stimuli and its behaviour when interacting with external application main purpose of this document is to be used as a reference for developing the initial edition of the system for the development team and to propose it to a customer for its approval.

1.2 Document Conventions

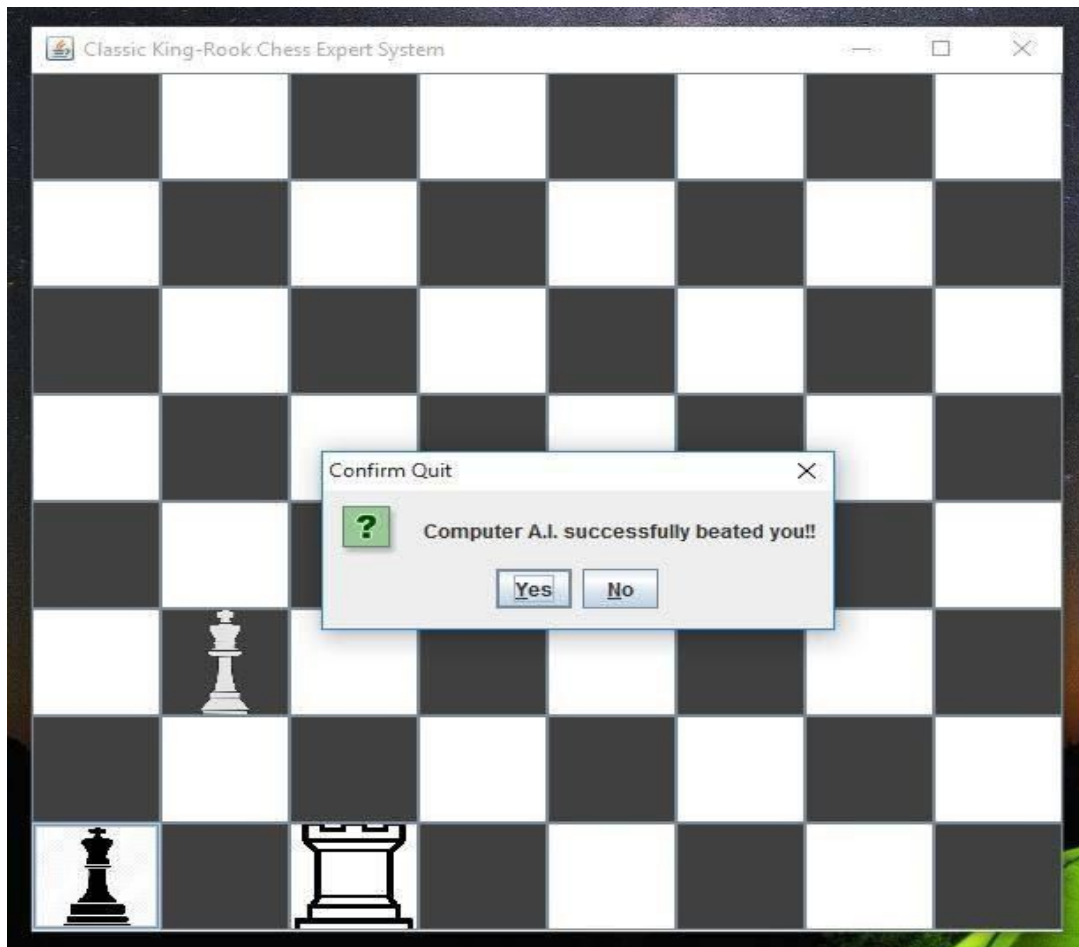
The format of the document is simple. Headings and subheadings are in font, Times and bold. The remainder of the document is written in Arial font. Indentation is used in the whole document.

1.3 Product Scope

This software system will be “**Classic King and Rook Chess Endgame**” that will be able to stimulate the chess game when Rook and King of opponent is against the only left King of the player. It is a classic chess state where the objective of the player is to avoid Check-Mate for as many moves as possible.

1.4 Product Perspective

This software is a product inspired by pre-existing work in this field. A lot of work has been done in this field. The product uses a simple computer system. The GUI of the software is especially designed for the purpose of nice and clear game playing experience.



1.5 Product Functions

The aim of this project is to design a system for implementing Classic King and Rook Chess Endgame problem.

- It will use CLIPS for predefining rule based system which will be responsible for making sure that the game is played following the rules of chess only.
- The software in java uses CLIPSJNI which is a CLIPS library designed for java.
- It uses CLIPSJNI for getting the output for next move and software uses Java Swing for implementing the GUI .

1.6 User Classes and Characteristics

The **Classic King and Rook Chess Endgame** system aims at making a case of chess game when only 3 pieces are left in the grid .

1.7 Operating Environment

The operating system requirement of the software is very simple. Any version of windows operating system can be used as the operating environment for this software. Ubuntu can also be used with a installation of NetBeans.

It is a Java application which requires CLIPSJNI(CLIPS library in Java). The application is not resource or graphics intensive, so, there are no practical hardware constraints.

1.8 Assumptions and Dependencies

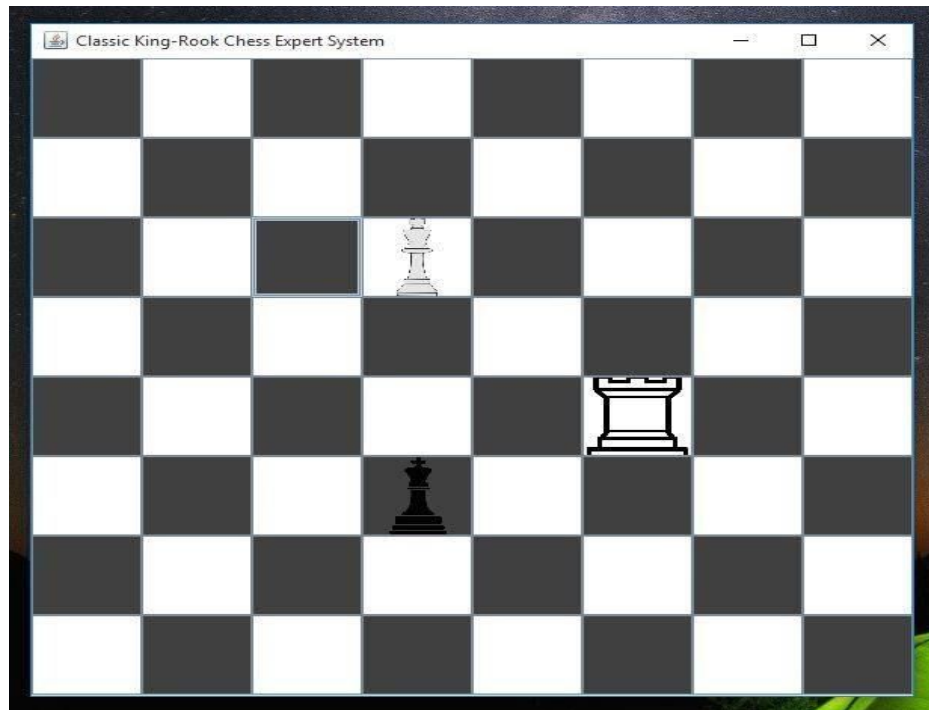
Following are the assumptions made for the correct functioning of the system:

- The software designed will work correctly with the Windows operating system .
- Java version used is Java JDK 8.0
- Netbeans IDE 8.0.2 is used for writing the code.
- The input during the gameplay is by using mouse.

2. External Interface Requirements

2.1 User Interfaces

- MAIN SCREEN:



This screen is loaded as soon as the software is run.

1. Move starts from the opponent player and they place the first move (White has already made a move as soon as game starts but it always remains the same).
2. The opponent responds to the every move by us and try to avoid checkmate as long as possible.
3. When the game finishes (Check-Mate) a dialogue box appears on the screen with the message that Computer AI successfully beat you.

2.2 Software Interfaces

The Chess system uses Netbeans 8.02 as a programming tool. The software contains an in-built set of facts and rules which decides how the next moves will be decided by the software. It also makes sure that the moves should be valid.

2.3 Communications Interfaces

The emotion recognition system does not use any communication standards like FTP, HTTP or any other Internet protocol for its working.

3. System Features

The system has the following features –

- The game starts from the state when the opponent has a Rook and a King left on the grid with a King left of the player.
- The black player has the first move.
- The initial position of pieces can be decided by changing the value of initial position stored in file 1.txt, 2.txt, 3.txt, 4.txt, 5.txt and 6.txt.
- Next move by the software is given as soon as we make our move.
- When the system beats you a dialogue box appears stating the ending of the game.
- When the game finishes, to start new game we have to run the software again.

4. Other Nonfunctional Requirements

4.1 Performance Requirements

There is no Maximum allowed execution time for the system and it will run till ending of the game, starting when user runs the software and ending when the user has been notified of the game result.

4.2 Software Quality Attributes

The graphical user interface of Classic King and Rook Chess Endgame is to be designed with usability as the first priority. The system will be presented and organized in a manner that is both visually appealing and easy for the user to use. The system is flexible enough to incorporate the changes leading to improvement in the working of the software.