Software Requirements Specification

for

Online Chess Game

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

This document specifies all the requirements for the Chess software. These requirements relate to the functionality, constraints, performance and the system interface.

The Chess software allows two players to play chess interactively from remote locations. And the second goal will be that the program should be working and allow the users to play the game.

1.2 Document Conventions

Most important points are written in **bold.**

1.3 Intended Audience and Reading Suggestions

All chess players and enthusiasts. For further reading, refer to https://www.fide.com/FIDE/handbook/LawsOfChess.pdf

1.4 Product Scope

Basically this project has two main purposes: Firstly, to encapsulate the chess gaming and chatting in one application so that a user can easily view and use both of them on a single window. Secondly, to make these two applications to run simultaneously on the network. Generally, the chess game is normally played against the human user and the computer on which the user is operating so the need is to make the chess game being played against two human users on two different machines on the network, no matter their physical location and as well as allowing chat among those two users.

1.5 References

1) “Laws of Chess: For competitions starting before 1 July 2014.” World Chess Federation - FIDE, www.fide.com/component/handbook/?id=124&view=article.
2)

2. Overall Description

2.1 Product Perspective

- Records of moves made in this game so far.
- Records of pieces that each player killed.
- Records of valid moves around selected pieces.
- Players are able to send messages to each other.
- Spectators can be allowed to watch other players play.

2.2 Product Functions

- To provide a user-friendly interactive environment to the users of the application that helps them to play and communicate with a lot of ease.
- To provide help to the users in playing the chess , the different moves of the different pieces etc are being explained to the users, if they require.
- The care is taken that the user finds the same chatting mechanism as he is normally used to.
- As the project is based on client server architecture, where the server is serving as mediator in between the players and the client is making requests to the server as well as doing all the part that is related to playing logic.
- The statistics of players will be maintained on their own profile.
- Players will be able to do quick pairing or manually invite another player to play.

2.3 User Classes and Characteristics

This Chess software is mainly intended for beginners and people who play for enjoyment and fun.

Priority 1:

Beginners and People who play just for fun and chat alongside. They expect attractive, easy to use GUI, fully functional playing game

Priority 2: Professional Chess Players:

They expect tournaments, maintenance of ratings, analysis of games they played using chess engine, lag-free experience, etc.

Their requirements are less important to satisfy.

2.4 Operating Environment

For smooth playing of Chess game the client should have an operating system and hardware capable of making TCP connection with the server. **The python version 3 should be installed on the system of the client.**

2.5 Design and Implementation Constraints

The interface may look different depending on operating system,device configuration,i.e(windows/linux or 32-bit/64-bit),etc.

2.6 User Documentation

Rule book for the user :

Chess Rules and Setup for Kids & Beginners

How to Play Chess | Rules + 7 Steps to Begin

FIDE Handbook

2.7 Assumptions and Dependencies

- The client has an operating system and hardware configuration which is capable of making TCP connections.
- The client has installed python version 3 on his/her system.
- The client knows the rules of the chess game.
- **The client has internet connectivity for online playing.**

3. External Interface Requirements

3.1 User Interfaces

- ❏ CHESS includes an interface resembling a common chessboard. CHESS requires python3 installed, memory space and storage space on the user computer to save data.
- ❏ However, CHESS is not portable and the clients will need to install one time the chess application on each computer that will be used to play.
- ❏ The Connect interface is used by game players and displays player information. As players make moves, the screen is updated to reflect the moves made in the game.

Basic structure of interface

3.2 Hardware Interfaces

CHESS runs on any computer hardware meeting the following criteria:

- **Capable to use TCP connections**
- **Includes Memory Storage (Minimum 1GB of RAM)**
- Includes a mouse
- Includes a keyboard

3.3 Software Interfaces

Client: CHESS software interfaces with the user computer and expects that it has python3 environment installed.

Network: CHESS software interfaces with the user computer and expect that it is capable of use TCP connections.

3.4 Communications Interfaces

Most of the data that will be shared over a network in online gameplay will be of text-format(media if possible).

Communication between the clients is facilitated by common network protocols using TCP/IP.

4. System Features

4.1.1. Priorities:

Priority 1	Highest priority. All items of this level must be implemented and verified or the program is unacceptable.

Priority 2	Requirements of this priority are expected to be implemented, but their omission will not result in an unacceptable program; so long as their omission does not affect higher priority components.
Priority 3	Lowest priority and not expected to be implemented.

Priority 1:

i. **Users shall be able to connect via his/her USER ID (unique ID).**
ii. **Users shall be able to start a game once two users are connected and ready.**
iii. **Users shall be given the choice of who plays black and white.(while sending request to the server)**
iv. **A player may forfeit at any time during gameplay.**
v. **Forfeiting shall end the game immediately.**
vi. **The active player shall select a piece by clicking it.**
vii. **When a piece is selected, all legal moves for that piece are highlighted.**
viii. **When a piece is selected, the active player may select another piece by clicking it.**
ix. **A selected piece must always belong to the active player.**
x. **The active player shall move the selected piece by clicking on any legal square.**
xi. **The active player shall capture a piece by moving onto a legal square containing an opposing piece.**
xii. **The statistics of players will be maintained on their own profile.**
xiii. **Players will be able to do quick pairing or manually invite another player to play.**

xiv. **Players ratings shall be maintained.**

Priority 2:

i. A player must be given a confirm dialog before forfeiting.
ii. Captured pieces shall be displayed in a captured pieces box.
iii. The inactive player may request to undo the prior move.
iv. There shall be no more than one undo request per turn.
v. An undo request shall be ratified by the active player.
vi. When an undo request is accepted the game is reverted to the state of the board prior to the request.
vii. Player should be able to change the visual mode of game i.e.,dark mode/light mode.
xv. A player shall be able to save a log of the moves at any time.

4.1.2 Stimulus/Response Sequences

- ❏ User will log in the game by creating an account or in guest mode.
- ❏ User will get options like quickplay,invite another player(play with friend),spectate another players who are online and in a game with another player.
- ❏ User can adjust settings like turning on/off the in-game music,sounds,font used in chat,chessboard colors.
- ❏ User can send friend request to other players with their username/email/game-ID.
- ❏ User can see the statistics of his gameplay over a period of time viz., wins,loses,draws,time spent on the game.
- ❏ **User can report a player if he feels any inappropriate gameplay/offensive content in chat.**

4.1.3 Functional Requirements

A. The user should be able to create an account and log in.

B. The user should have internet connectivity.
C. The user should be able to communicate with the opponent through the chat option.
D. The user will be able to send requests to his/her friend to play with him/her.
E. User should run the application on any operating system which is able to run python3.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

-The game shall not crash and use the CPU less as possible.

-The overall goal shall be to get the program running without any bugs or user-related problems.

5.2 Safety Requirements

There are no safety requirements.

5.3 Security Requirements

There are no security requirements. Chess software has no private information that could be used to compromise an individual.

5.4 Software Quality Attributes

Chess shall run smoothly and give the user a somewhat enjoyable experience playing chess at a basic level.

5.5 Business Rules

There are no business rules.