Software Requirements Specification for Chess Connect: Online tools combined with on-board vision to improve and share your game

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Table of Revisions

Table 1: Revision History

Date	**Developer(s)**	**Change**
2022-10-04	Jonathan Cels	Template creation and document formatting
date	name	change

1 Units, Terms, Acronyms, and Abbreviations

1.1 Table of Units

Throughout this document SI (Système International d'Unités) is employed as the unit system. In addition to the basic units, several derived units are used as described below. For each unit, the symbol is given followed by a description of the unit and the SI name.

symbol	**unit**	**SI**
V	electric potential	volt
A	current	ampere
Ω	resistance	ohm
s	time	second
°C	temperature	centigrade
J	energy	joule
W	power	watt ($\mathrm{W} = \mathrm{J\,s^{-1}}$)

1.2 Abbreviations and Acronyms

symbol	description
A	Assumption
DD	Data Definition
GD	General Definition
GS	Goal Statement
IM	Instance Model
LC	Likely Change
LCD	Liquid Crystal Display
LED	Light-Emmitting Diode
MCU	Micro Controller Unit
PS	Physical System Description
R	Requirement
SRS	Software Requirements Specification
T	Theoretical Model

Constant	Unit	Value
Chess board width	inches	12
Chess board length	inches	8 12
Chess board tile width	inches	1.5
Chess		

8.2 Monitored Variables

Variable	Units	Description
s_a{1-8}	Volts	States of tiles a1 - a8 on the board. They are analog signals converted to digital and the state of the tile is determined. The possible states of each tile is empty, black/white pawn, black/white rook, black/white knight, black/white bishop, black/white queen, black/white king.
s_b{1-8}	Volts	States of tiles b1 - b8 on the board. ” ”
s_c{1-8}	Volts	States git of tiles c1 - c8 on the board. ” ”
s_d{1-8}	Volts	States of tiles d1 - d8 on the board. ” ”
s_e{1-8}	Volts	States of tiles e1 - e8 on the board. ” ”
s_f{1-8}	Volts	States of tiles f1 - f8 on the board. ” ”
s_g{1-8}	Volts	States of tiles g1 - g8 on the board. ” ”
sw_3pos_p1-2	Volts	The three-position switch for both players is located on top of the board on their respective sides. It toggles between the beginner advice, engine advice and no advice modes for each player.
tieB_p{1-2}	Volts	The ”draw” push-button for each player is located on the top of the board on their respective sides. When both players press their button the game is a draw.
engine_move	chess notation	The chess engine API provides best moves into the system.

8.3 Controlled Variables

Variable	Units	Description
LED_row{1-9}	Volts	A total of 81 LEDS will be located under the board. They are on the corner of each tile and illuminate based on conditions of the inputs.
LCD_Display	Volts	An LCD Display is located on the chess board to indicate best moves delivered by the engine.

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