

# Critical Design Review: Puzzle Me Chess

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## Project description

In chess there are many different ways to play the game. After each player moves three times there are 121 million different moves that can end the game. Many people need to practice chess in order to get better and there are many ways to do this. You can play over the internet and play computer which range from (400 - 3200) ELO or you can play puzzle's in chess. Puzzle's in chess allow you to study the board in a given state and make the next several moves. This project is dedicated to solving puzzles in the physical world.

The physical chess puzzle allows the user to practice looking at a physical board to solve each puzzle. This project is titled "Puzzle me Chess" and it will be equipped to have 3 different puzzle's. The chess board will allow the user to place each piece in the right location that is displayed on the OLED screen. After each piece is on the board the chess puzzle will then display to the user which color he/she will play. After the user makes his first move the board will check to see if the move was correct. If not the user will be asked to reset the piece and try again until puzzle is complete.

## Capabilities

Capabilities for the Puzzle me Chess project range from Indicators, User Direction, SD card capability, and Location Detection. See below for more details.

Capability	Description below
Indicator	LED light indicator to show user hint/show answer feature
User Direction	OLED to describe to the user where to put pieces
SD Card	Read .csv standardized format to quickly import puzzles
User Direction	User input switch to show user answer, indicated by LEDs
User Direction	User input Button to show user a hint
Location Detection	Check board spots are correct for puzzle that was selected

\*Assume User puts right pieces on spot

\*Assume Chess Board will be lit evenly with light

## Limitations

Limitations for the Puzzle me Chess project range from Location Detection, Auto Movement, Puzzle Selection, Physical and parts. See below for more details.

Limitations	Description below
Location Detection	Not knowing which piece is on the spot
Auto Movement	Not being able to move the piece on correct spot
Puzzle Selection	Not having 3+ different puzzles to choose from
Physical	Not being able to light each square along the perimeter
Parts	Not having multiple colors to indicate wrong or right answer
Physical	Needing light to illuminate the chess board

## **Functional description**

System Block Diagram

Code Flow Diagram

## **Interface description**

Internal

## **Explanation of code**

Code layout

Main.cpp

Display.cpp

SDcard.cpp

## **Material and resource requirements**

List of Items (BOM)

Test equipment

Ordering from

include date and times and websites

## **Development Plan and Schedule**

Order of Development

Milestones and Schedule

Risk

## **Reference**