Functional Requirements:

- The system must enforce the official rules of chess, including movement rules for each type of chess piece (pawn, rook, knight, bishop, queen, and king).
- It should implement special moves like castling, en passant, and pawn promotion correctly.
- The system must handle draw conditions such as stalemate, threefold repetition, and the fifty-move rule.
- Check and checkmate conditions must be detected and properly displayed.
- The system should provide an intuitive and user-friendly interface for players to make moves.
- It must display the chessboard clearly with coordinates and piece icons.
- Users should be able to interact with the board using mouse/touch or keyboard inputs.

Non-Functional Requirements:

- For online systems, user accounts and gameplay data should be secure and protected against unauthorized access.
- Prevent cheating and ensure fair play.
- Ensure that the system is compatible with various devices and web browsers (for online platforms).
- Support for mobile devices
- Provide support for multiple languages and regional variations
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Use case:

- **Make a Move:**
  - **Actor:** Player
  - **Description:** The player selects one of their pieces, then selects a legal destination square to make a move. The system verifies that the move is valid according to the rules of chess, including piece movement and special moves like castling, en passant, and pawn promotion. If the move is valid, the system updates the board accordingly.
- **Detect Stalemate:**
  - **Actor:** System
  - **Description:** The system continuously monitors the game state to detect if a stalemate condition occurs. It checks whether the player is in a position where they have no legal moves left, but their king is not in check. If a stalemate is detected, the game is declared a draw.

- **Detect Threefold Repetition:**
    - **Actor:** System
    - **Description:** The system keeps a record of the game's previous positions and checks if the current position has occurred three times before. If threefold repetition is detected, the game is declared a draw.
- **Check and Checkmate Detection:**
    - **Actor:** System
    - **Description:** The system continuously checks for the condition where a player's king is under attack (in check). If a player's king is in check, the system verifies if there are any legal moves the player can make to get out of check. If there are no legal moves, the game is declared as checkmate, and the opposing player wins.
- **Display Chessboard:**
    - **Actor:** System
    - **Description:** The system displays the current state of the chessboard with all the pieces in their correct positions. It includes coordinates and piece icons for easy identification.
- **User Input:**
    - **Actor:** Player
    - **Description:** The player interacts with the chessboard using either a mouse/touch or keyboard inputs to select pieces and move them. The system interprets and responds to these inputs, updating the board accordingly.
- **Provide User Feedback:**
    - **Actor:** System
    - **Description:** The system provides real-time feedback to the player regarding the legality of their moves. If a move is invalid, the system should inform the player why it's not allowed, such as "Invalid move: the king would be in check."
- **Pawn Promotion:**
    - **Actor:** Player
    - **Description:** When a pawn reaches the opponent's back rank, the player is prompted to select a piece (queen, rook, bishop, or knight) to promote the pawn to. The system replaces the pawn with the chosen piece on the board.