# ChessBot Game Manual

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## 📖 Introduction

ChessBot is an advanced chess game and engine built in Python, featuring a modular architecture and an interactive Pygame interface.

It supports both human players and AI-controlled opponents, with a strong focus on clean separation of game rules, board management, and UI.

## 🎮 How to Play

1. \*\*Objective\*\*: Checkmate your opponent's king while protecting your own.

2. \*\*Setup\*\*: Standard chess rules and piece placement apply.

3. \*\*Turns\*\*: Players alternate moves. Each player can move one piece per turn.

4. \*\*Capturing\*\*: Move your piece onto a square occupied by an opponent's piece to capture it.

5. \*\*Special Rules\*\*:

- \*\*Pawn Promotion\*\*: Pawns reaching the opponent’s back rank can be promoted.

- \*\*Castling\*\*: Move the king two squares toward a rook, which then moves to the square next to the king.

- \*\*En Passant\*\*: Capture a pawn that has just moved two squares forward as if it had only moved one.

## 🖥 Game Interface

- \*\*Drag-and-Drop\*\*: Move pieces using your mouse.

- \*\*Color-Coded Pieces\*\*: Each piece type has a distinct visual indicator.

- \*\*Configurable Board Size\*\*: Adjust via configuration settings in `config.py`.

- \*\*Highlighting\*\*: (Planned) Show legal moves when a piece is selected.

## 🤖 AI Features

- \*\*Destination Selection\*\*: AI evaluates possible moves and prioritizes capturing high-value pieces.

- \*\*Fallback Logic\*\*: Chooses a random legal move if no captures are available.

- \*\*Future Enhancements\*\*: Risk assessment and defensive strategies.

## ⚙ Technical Features

- \*\*Modular Movement Strategies\*\*: Each piece's movement is implemented separately (`BishopMovement`, `RookMovement`, etc.).

- \*\*Validation System\*\*: Ensures moves are legal, prevent friendly fire, and respect movement definitions.

- \*\*Transaction Management\*\*: Allows undo/redo functionality for safe move rollbacks.

- \*\*Capture Tracking\*\*: Keeps records of captured pieces, captors, and capture locations.

## 🛠 Installation & Running

Refer to the README installation section for detailed setup instructions.

Quick start:

```bash

git clone https://github.com/yourusername/chessbot.git

cd chessbot

python bootstrap.py

```

Run the game:

```bash

python main.py

```

## 🎯 Tips for New Players

- Control the center squares early.

- Protect your king by castling when possible.

- Avoid moving the same piece multiple times in the opening unless necessary.

- Think ahead — anticipate your opponent’s response.

## 📜 License

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