

**TCP2201 Project**

Trimester 2310

*by TT5L Deneb*

Team Leader:

ENG ZI YING, 013-688 3338 , [1211112187@student.mmu.edu.my](mailto:1211112187@student.mmu.edu.my)

Team members:

TEOW WEI TING, 011-1080 6156, [1231302923@student.mmu.edu.my](mailto:1231302923@student.mmu.edu.my)

VENICE GOH KIT YEE, 011-2806 2253, [1211108846@student.mmu.edu.my](mailto:1211108846@student.mmu.edu.my)

WONG HUI TING, 011-5650 9931, [1211108527@student.mmu.edu.my](mailto:1211108527@student.mmu.edu.my)

# 

# 

# **Content**

[**Content 1**](#_2yqbbav0jehi)

[**Class Diagram 2**](#_zg6upsj4aqez)

[**Use Case Diagram 3**](#_w3vk3uwaoj0g)

[**Sequence Diagram for Each Use Case 4**](#_4g6miifl8eri)

[1.0 Start New Game 4](#_7ue2ps1tkkbr)

[1.0.1 First Load Application 4](#_tfwhn9ehzbi3)

[1.0.2 Click “New Game” 5](#_fd527h8g9vqt)

[1.1 Update View Board 6](#_zhzr7iktesb3)

[2.0 Save Game 7](#_87w33ahb9it0)

[3.0 Load Game 7](#_7vib7zpwxofv)

[4.0 View Guide 8](#_ey980mpua7jo)

[5.0 Play Move 8](#_t410q3wg0a83)

[5.1 Select Piece 9](#_xg5msp3nlxe7)

[5.1.1 Highlight Piece and Possible Move 10](#_xbcvro79xag7)

[5.2 Move Piece 11](#_4yo8gu8i80q2)

[5.2.1 Track Turn 12](#_metdlfs4qifx)

[5.2.1.1 Tor Xor Exchange 13](#_qo3jylncq92w)

[5.2.2 Check End Game 14](#_exjpa8mc8b5v)

[5.2.2.1 Determine Winner 15](#_moy6qyt3lh4s)

[5.2.3 End Game 16](#_vcn1c08zmyff)

[5.2.3.1 Reset Game 17](#_h3zdij7cmkn0)

[**Compile and Run Instructions 18**](#_fdfl0jy5gakh)

[**User Documentation 19**](#_y43m6e832rvo)

[1.0 Opening Project 19](#_akd496u99sc3)

[2.0 Execute the project 20](#_3xi0p6irfu40)

[3.0 Playing the Game 21](#_czj92f8bnf7d)

[3.1 Main Window 21](#_w1322jwejq2u)

[3.2 Making Moves 22](#_mrqwzzcvfena)

[3.3 Game Features 24](#_i4juw3kvykzq)

[3.4 Game Rules 25](#_8v7jljvfin4e)

[3.5 Ending the Game 29](#_bgbeh64dhmwc)

# **Class Diagram**

<https://drive.google.com/file/d/1cdNeZrtdGlAAYWzhsEpXh1ncp3EmZHX6/view?usp=sharing>

|  |
| --- |
|  |

# **Use Case Diagram**

<https://drive.google.com/file/d/1NRVt3Wzkaxi0w30O4uYJx1sRX2wc7oCD/view?usp=sharing>

|  |
| --- |
|  |

# 

# 

# **Sequence Diagram for Each Use Case**

## 1.0 Start New Game

#### 1.0.1 First Load Application

([referencing to 1.1 Update View Board](#_1.1_Update_View))

|  |
| --- |
| C:\Users\ziyin\Downloads\newgame1.png |

#### 1.0.2 Click “New Game”

([referencing to 1.1 Update View Board](#_1.1_Update_View))

|  |
| --- |
| C:\Users\ziyin\Downloads\newgame2.png |

### 1.1 Update View Board

|  |
| --- |
|  |

## 2.0 Save Game

|  |
| --- |
|  |

## 3.0 Load Game

([referencing to 1.1 Update View Board](#_1.1_Update_View))

|  |
| --- |
| C:\Users\ziyin\Downloads\loadGame.png |

## 4.0 View Guide

|  |
| --- |
|  |

## 5.0 Play Move

(referencing to [5.1 Select Piece](#_5.1_Select_Piece) & [5.2 Move Piece](#_5.2_Move_Piece))

|  |
| --- |
| C:\Users\ziyin\Downloads\playMove.png |

### 5.1 Select Piece

(referencing to [5.1.1 Highlight Piece and Possible Move](#_5.1.1_Highlight_Piece))

|  |
| --- |
| C:\Users\ziyin\Downloads\selectPiece.png |

#### 5.1.1 Highlight Piece and Possible Move

|  |
| --- |
|  |

## 

## 5.2 Move Piece

(referencing to [5.2.1 Track Turn](#_5.2.1_Track_Turn) & [5.2.2 Check End Game](#_5.2.2_Check_End) & [5.2.3 End Game](#_5.2.3_End_Game) & [1.1 Update View Board)](#_1.1_Update_View)

|  |
| --- |
| C:\Users\ziyin\Downloads\movePiece.png |

### 

### 5.2.1 Track Turn

(referencing to [5.2.1.1 Tor Xor Exchange](#_5.2.1.1_Tor_Xor))

|  |
| --- |
| C:\Users\ziyin\Downloads\trackTurn.png |

#### 5.2.1.1 Tor Xor Exchange

|  |
| --- |
| C:\Users\ziyin\Downloads\TorSorEx.png |

### 5.2.2 Check End Game

(referencing to [5.2.2.1 Determine Winner](#_5.2.2.1_Determine_Winner))

|  |
| --- |
| C:\Users\ziyin\Downloads\checkEndGame.png |

#### 5.2.2.1 Determine Winner

|  |
| --- |
| C:\Users\ziyin\Downloads\determinigWinner.png |

### 

### 

### 

### 

### 

### 5.2.3 End Game

(referencing to [5.2.3.1 Reset Game](#_5.2.3.1_Reset_Game))

|  |
| --- |
| C:\Users\ziyin\Downloads\EndGame.png |

#### 5.2.3.1 Reset Game

(referencing to [1.1 Update View Board](#_1.1_Update_View))

|  |
| --- |
| C:\Users\ziyin\Downloads\resetGame.png |

### 

### 

### 

### 

# Compile and Run Instructions

#### **Step 1: Extract the ZIP Folder**

1. Locate the CCP6224\_TT5L\_GroupDeneb ZIP file containing your .java files.
2. Extract the contents of the ZIP file into a directory (folder) on your computer.
   * Ensure the folder contains all the .java files, including ChessGame.java (the file with the main method).

#### **Step 2: Open the Command Line**

* **Windows:**
  + Press Win + R, type cmd, and hit Enter.
* **macOS/Linux:**
  + Open the Terminal application.

#### **Step 3: Navigate to the Program Folder**

Use the cd command to navigate to the folder where you extracted the ZIP file. For example:

cd path/to/CCP6224\_TT5L\_GroupDeneb

#### **Step 4: Compile Classes in Sequence**

1. **Compile Independent Classes** that other parts of the program rely on**:**

javac Position.java Piece.java TorXorLogic.java

1. **Compile Classes for Game Rules and State:**

javac GameState.java ChessModel.java TurnManager.java HighlightManager.java SaveLoadGame.java

1. **Compile Classes for Board Structure and Components:**

javac ChessBoard.java ChessBoardPanel.java MessagePanel.java MenuPanel.java

1. **Compile Controller Classes:**

javac BoardInteractionController.java GameFlowController.java ChessView.java

1. **Compile the Main Class (ChessGame):**

javac ChessGame.java

#### **Step 5: Run the Program**

After successful compilation, run the program by specifying the class containing the main method (ChessGame):

java ChessGame

# User Documentation

## 1.0 Opening Project

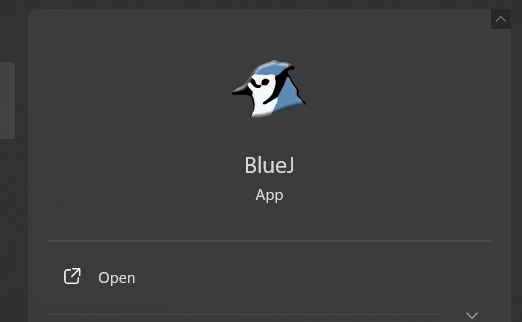
**Option A: Using Command Line (Platform Independent)**

1. Extract the CCP6224\_TT5L\_GroupDeneb ZIP file into a folder.
2. Open the terminal (macOS/Linux) or command prompt (Windows).
3. Navigate to the folder using the cd command:

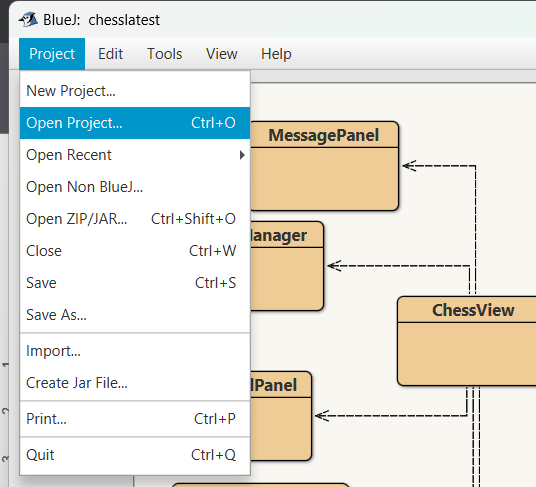
cd path/to/CCP6224\_TT5L\_GroupDeneb

**Option B: Using BlueJ (Optional)**

* Launch BlueJ



* Go to Project → Open Project



* Navigate to and select the “CCP6224\_TT5L\_GroupDeneb”



* Double click the file to open the project.

## 2.0 Execute the project

**Option A: Command Line (Recommended)**

1. Compile the program:

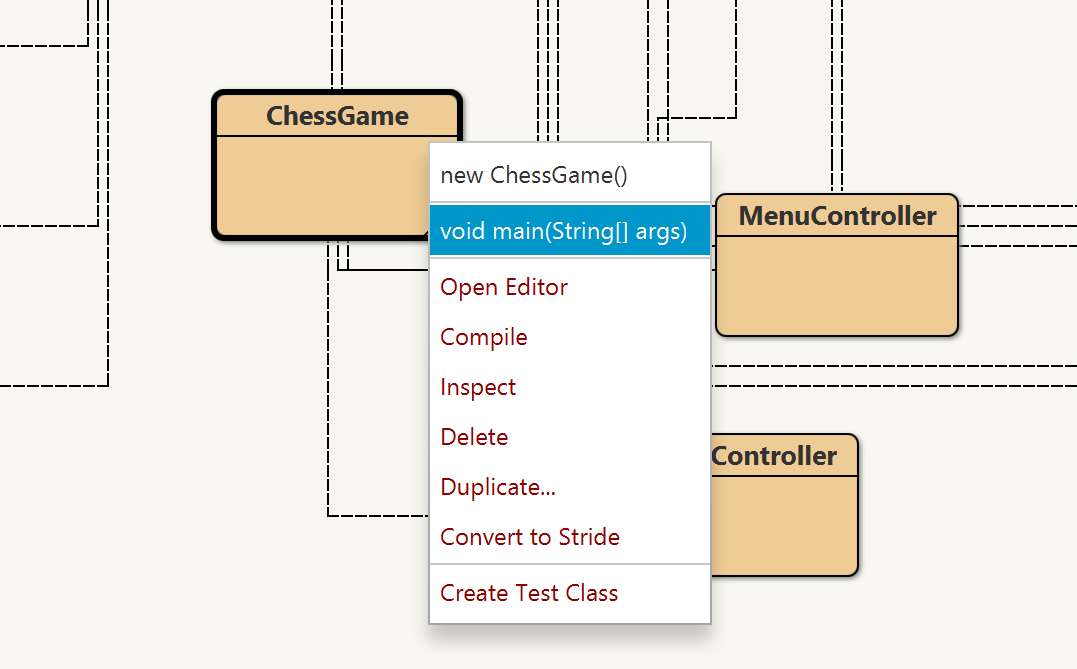
javac \*.java

1. Run the program:

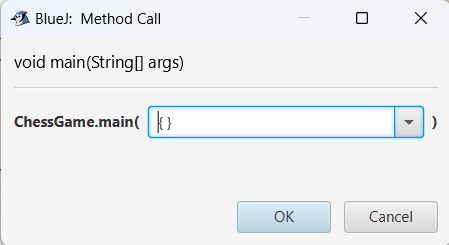
java ChessGame

**Option B: Using BlueJ (Optional)**

* In the BlueJ main window, select on the ChessGame class
* Right-click on the **ChessGame** class



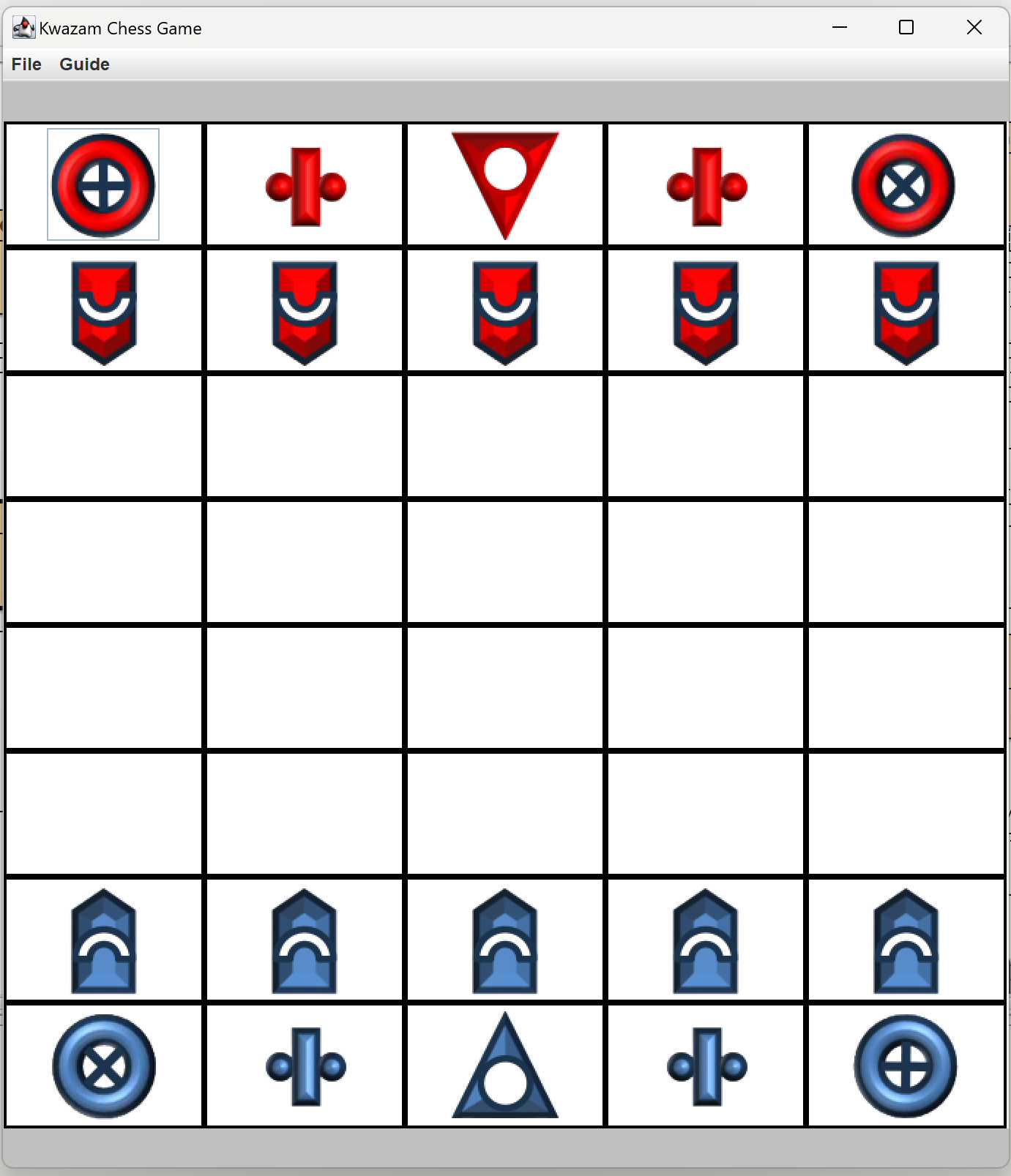
* Select void main(String[] args) from the menu
* Click "Ok" to start the game



## 3.0 Playing the Game

### 3.1 Main Window

* The game window will appear showing:
  + A chess board with all pieces in their starting positions



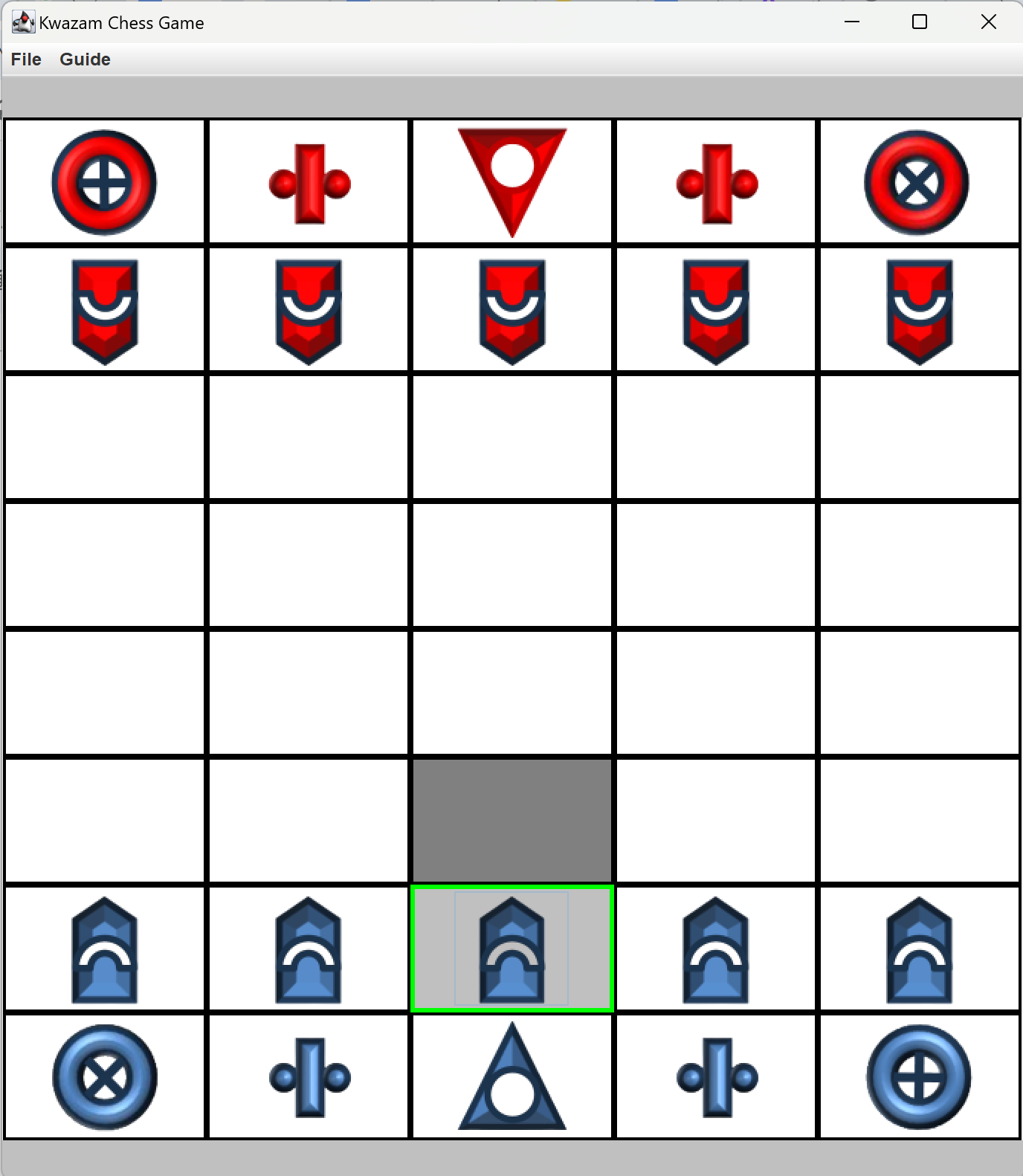
* + Menu options at the top



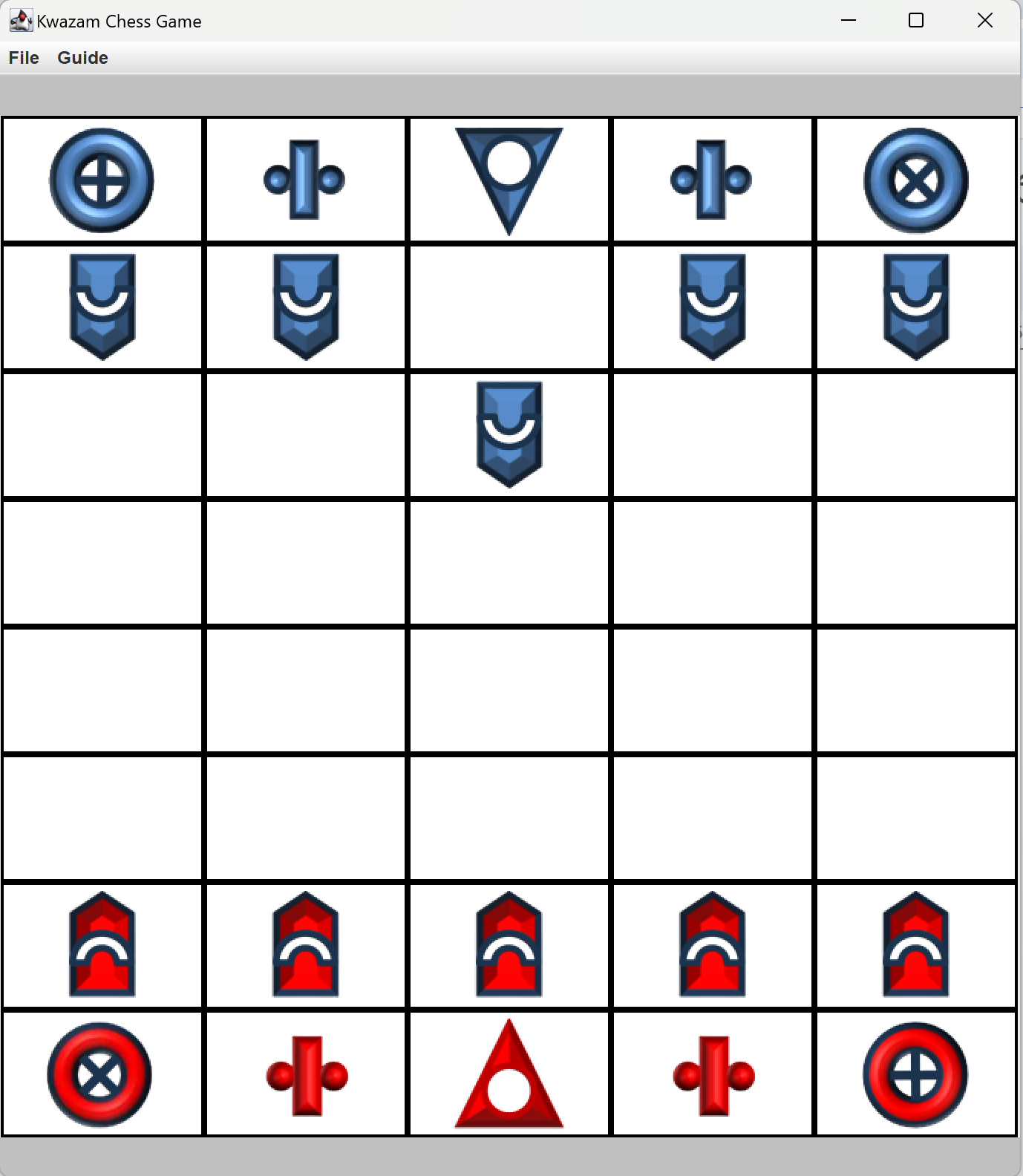
### 

### 3.2 Making Moves

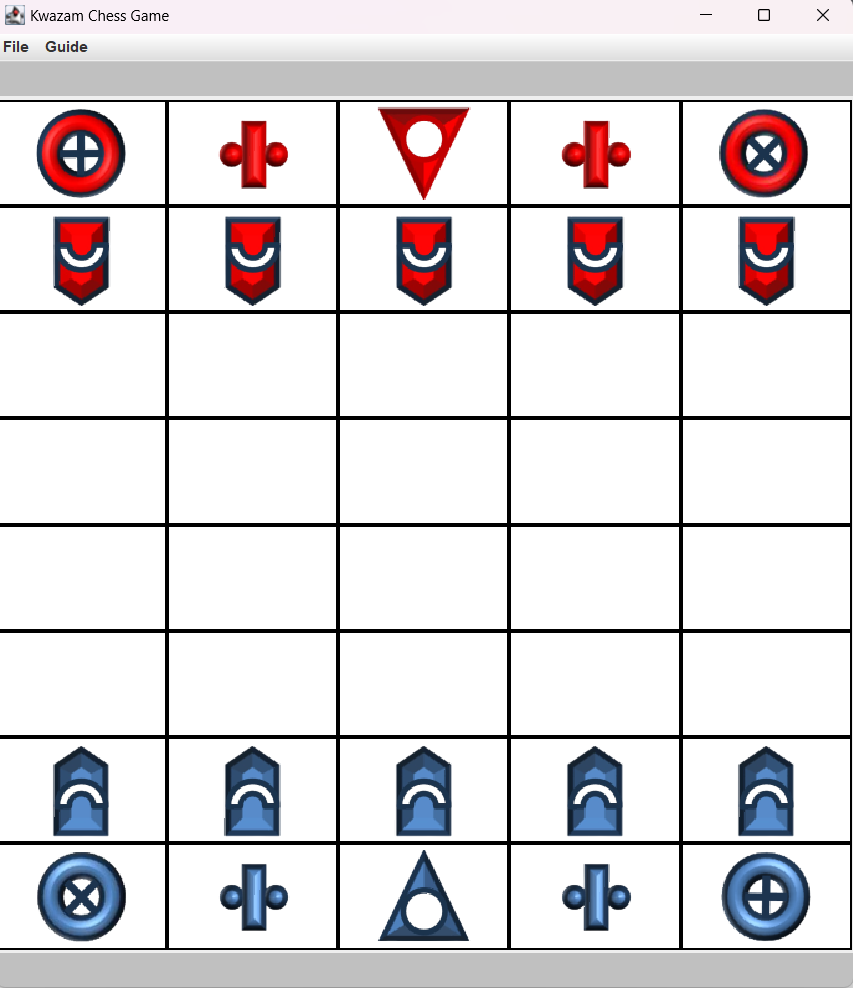
1. Click on the piece you want to move
2. Valid moves will be highlighted on the board



1. Click on a highlighted square to move your piece there

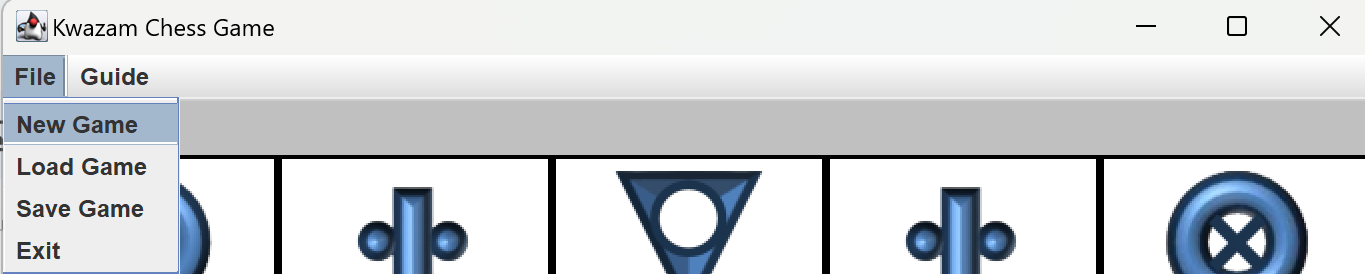


1. Invalid moves will be rejected automatically. The highlight will disappear.

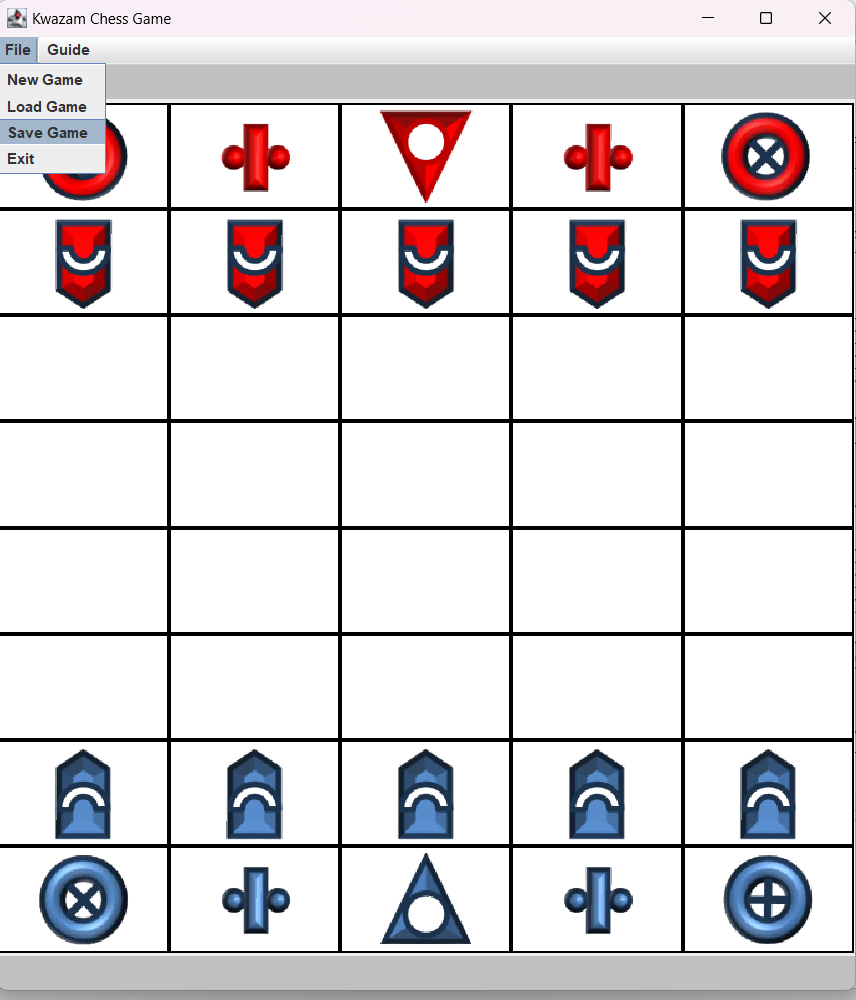


### 3.3 Game Features

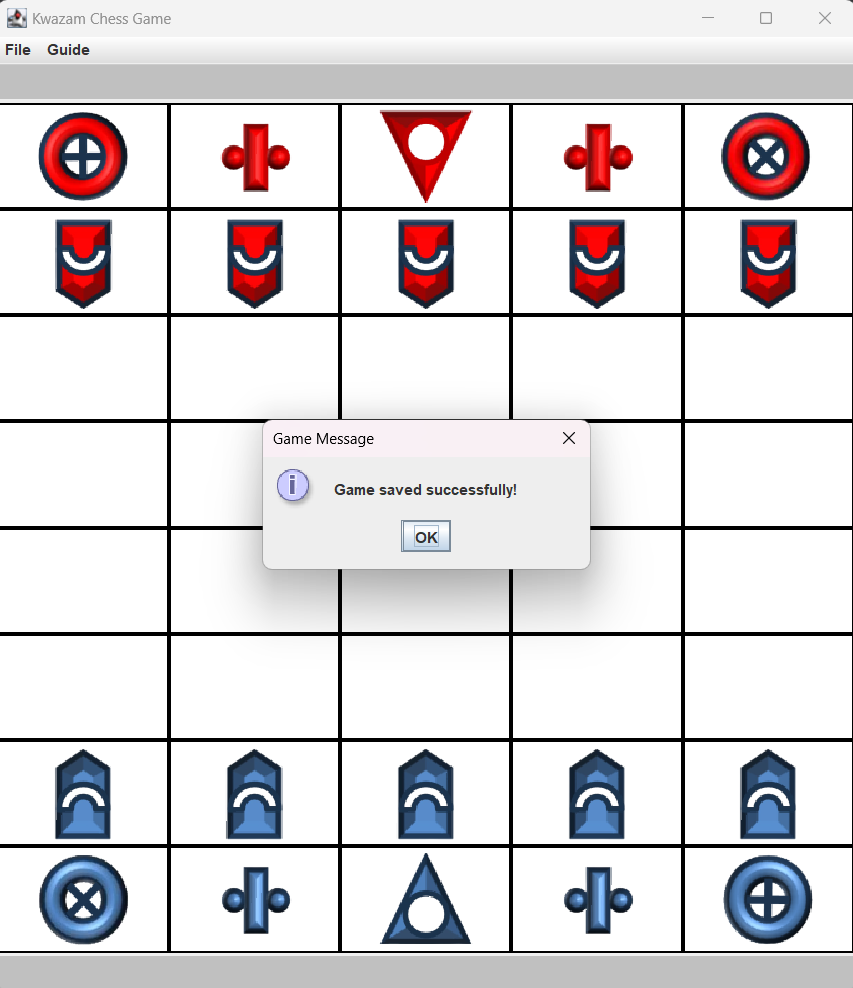
* Starting a New Game
  + Go to File → New Game
  + The board will reset to the starting position



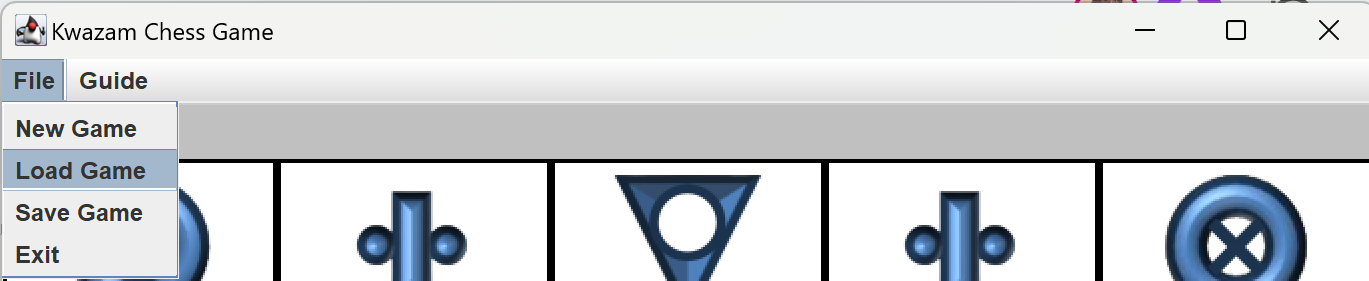
* Saving a Game
  + Go to File → Save Game



* + After clicking the “Save Game” button, it will show a message indicating that the game is saved successfully.

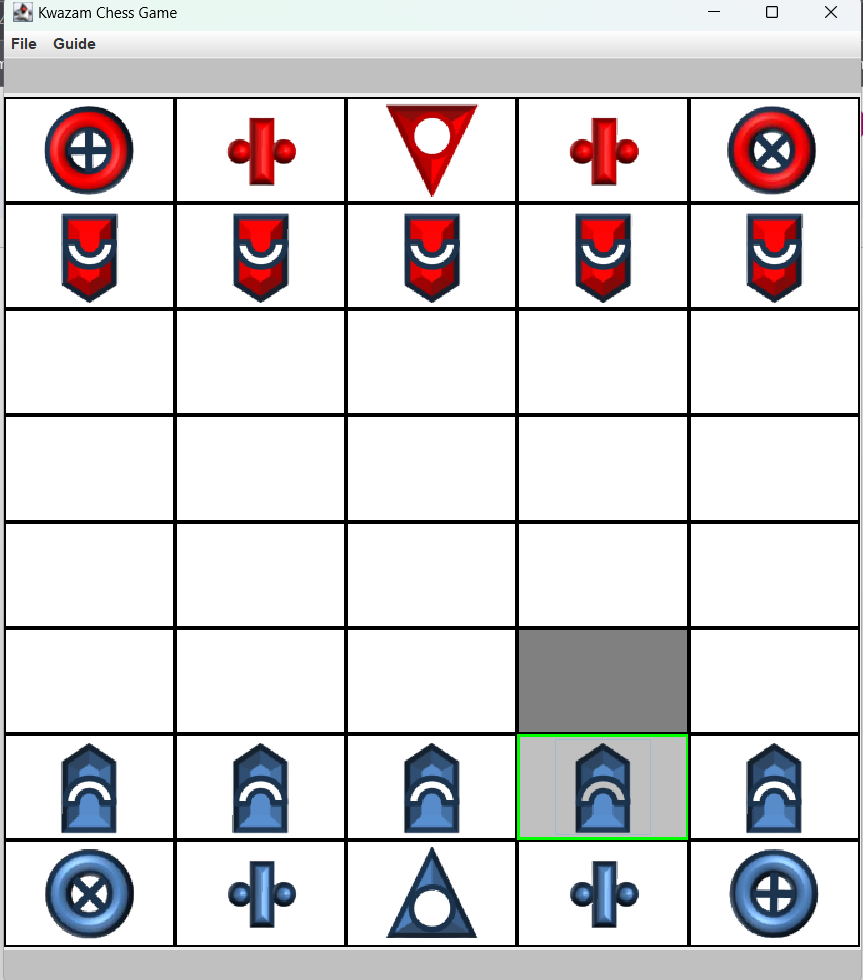


* Loading a Saved Game
  + Go to File → Load Game
  + The board will load the saved game

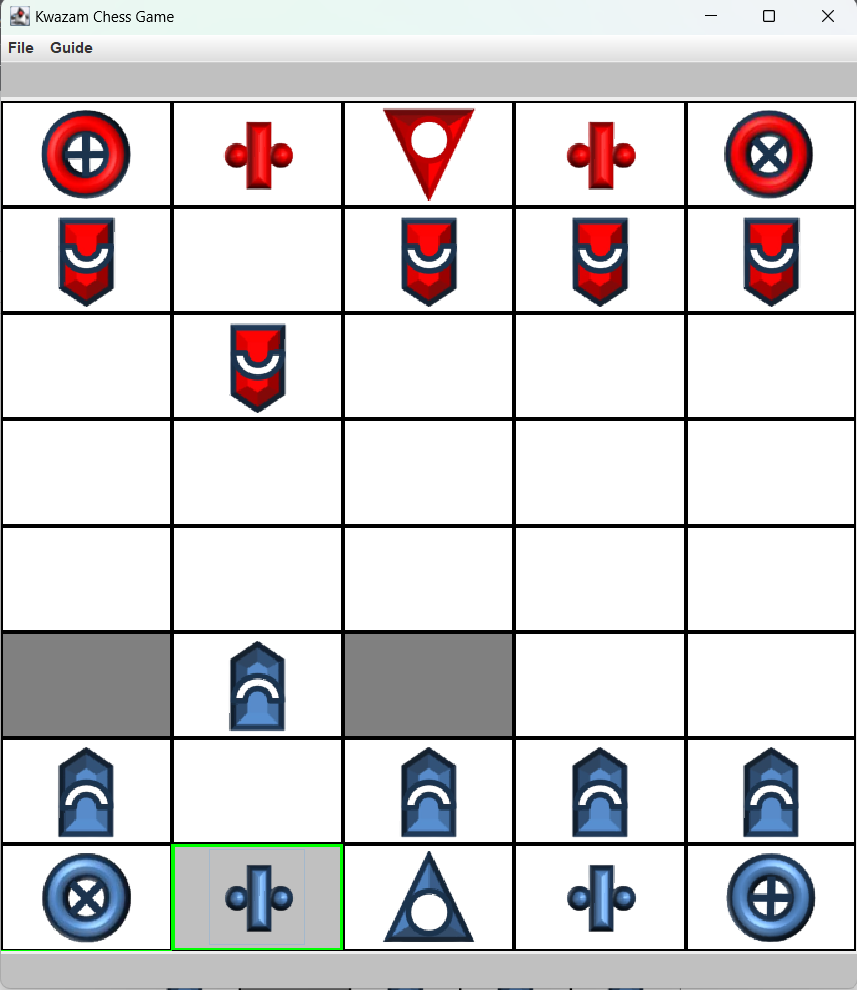


### 3.4 Game Rules

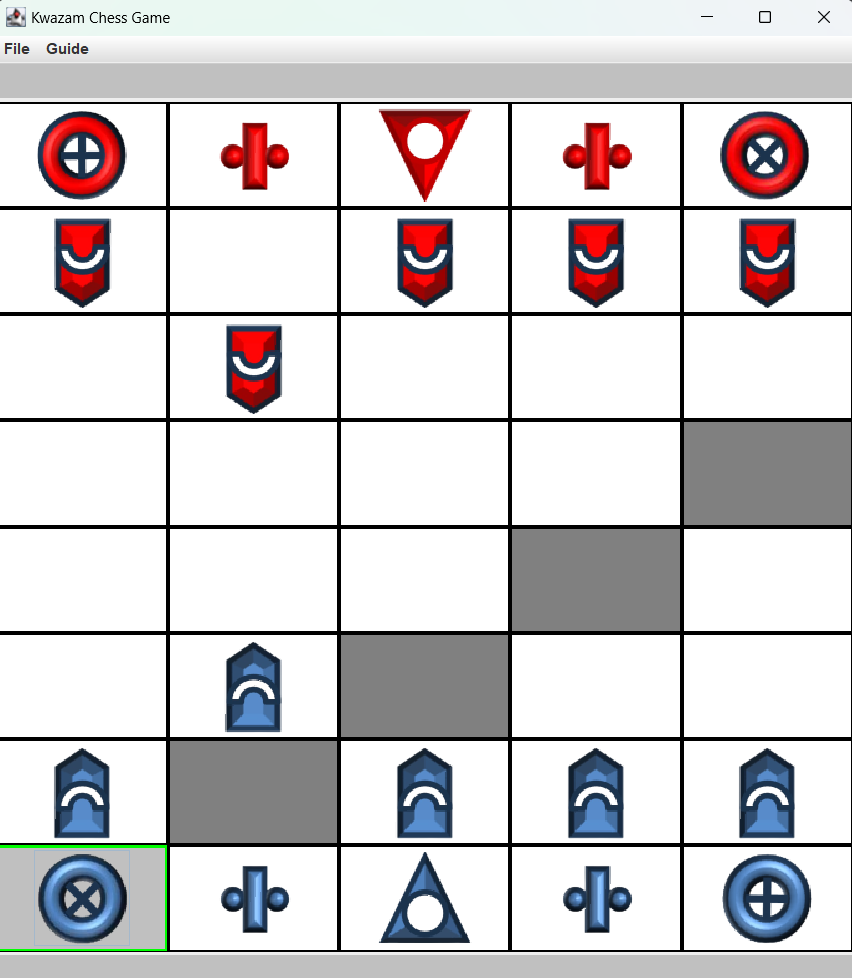
* Blue will be the first to move the piece
* Red take turns moving pieces
* Chess rules apply:
  + Ram move forward and capture diagonally



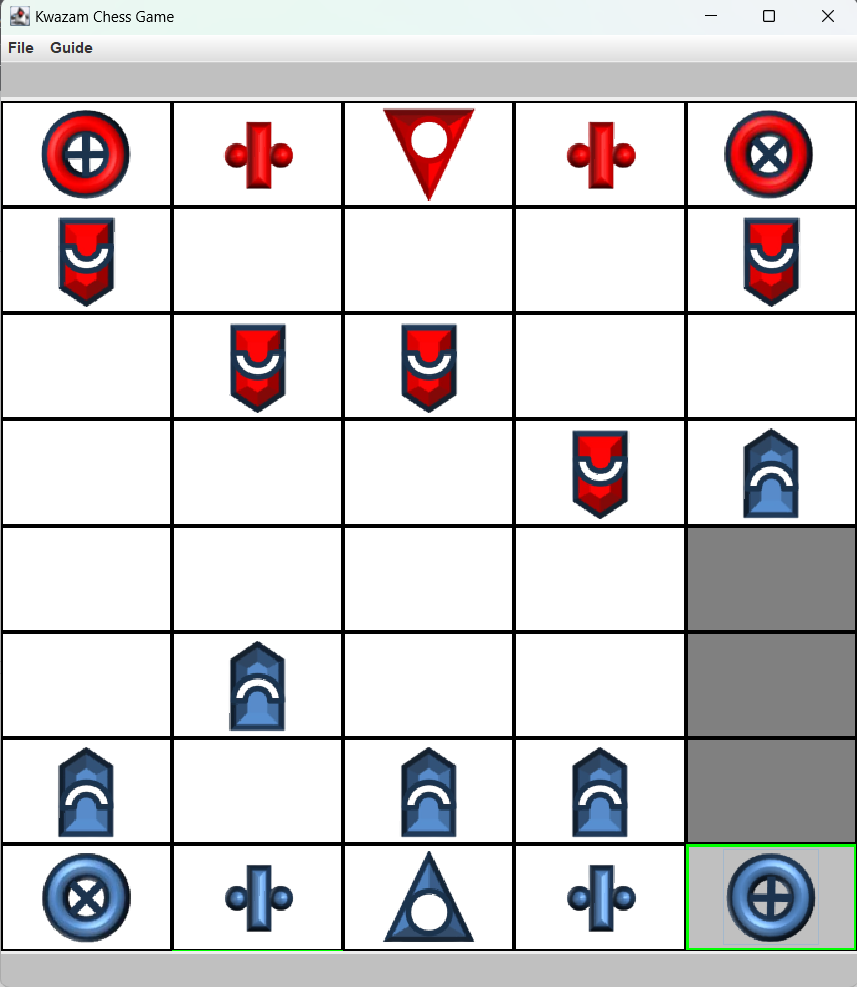
* + Biz move in L-shapes



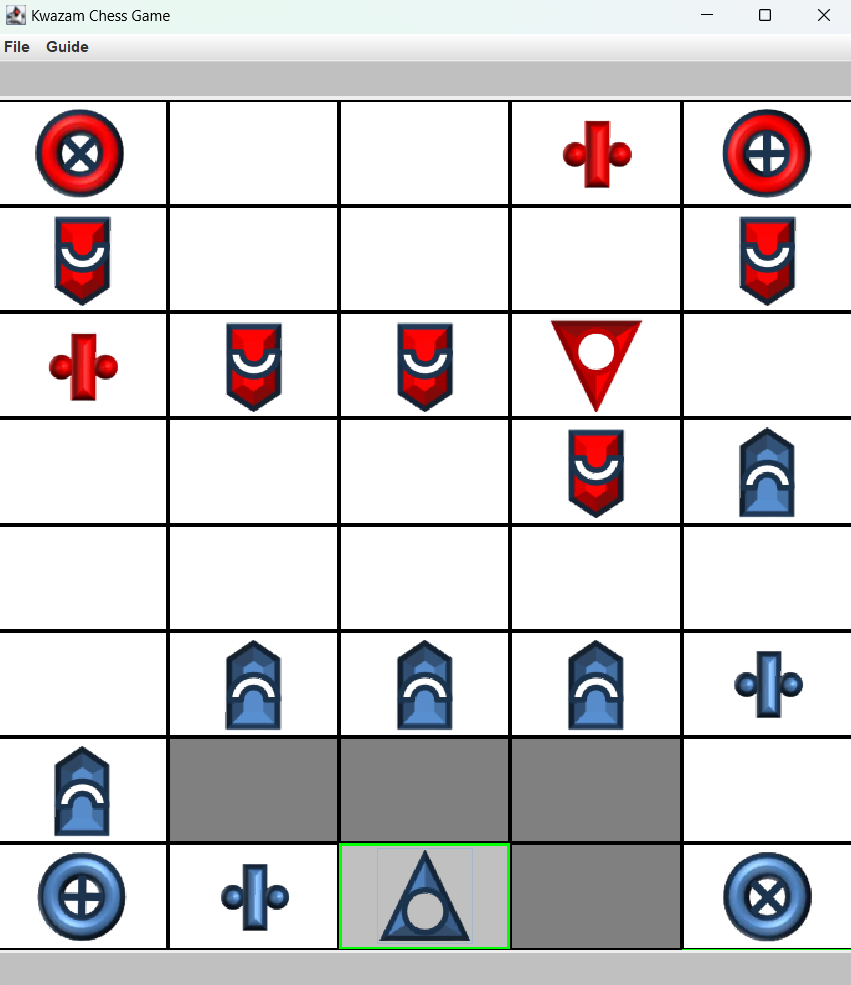
* + Xor move diagonally



* + Tor move orthogonally

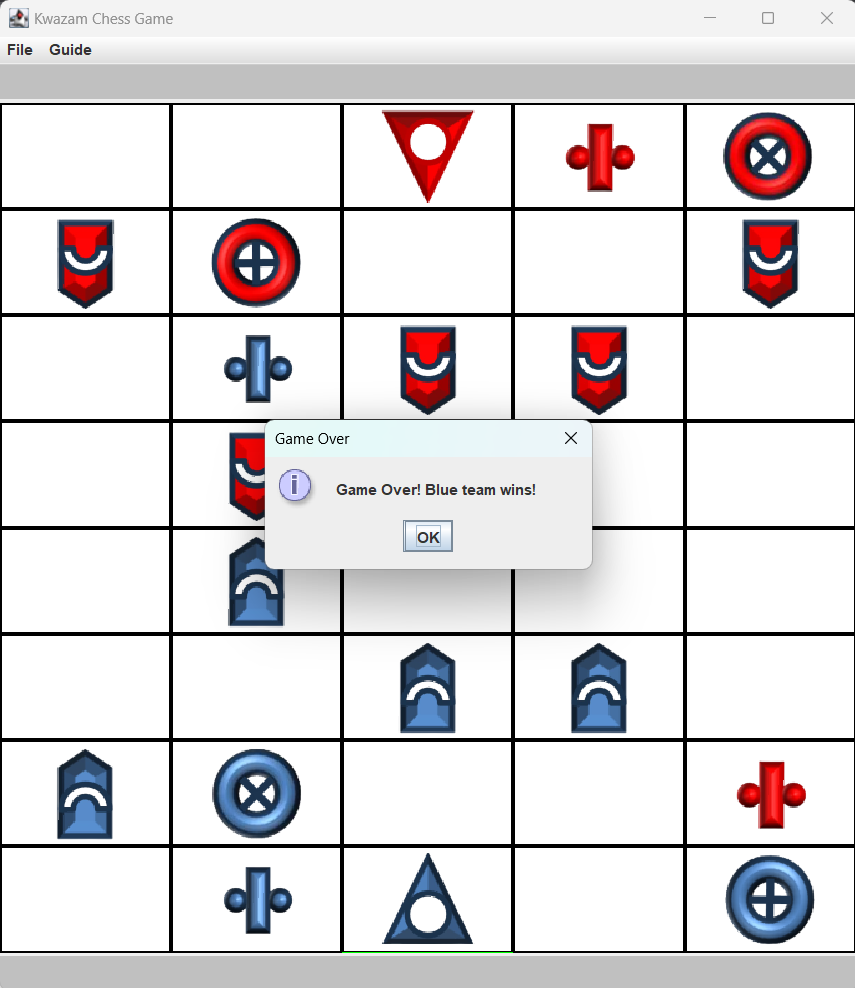


* + Sau move one square in any direction



### 3.5 Ending the Game

* The game ends when the Sau is captured by the opposing team.



* Users can choose to continue a new game or choose to exit the game.