

CS101 - PROJECT USER MANUAL

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INTRODUCTION

In this project, we have attempted to make an interactive one-player chess game using C++, where a user can face off against the computer.

The history of chess spans over 1500 years. The earliest predecessor of the game probably originated in India, before the 6th century AD. From India, the game spread to Persia. When the Arabs conquered Persia, chess was taken up by the Muslim world and subsequently spread to Southern Europe. Today, it is among the most popular board games in the world, played by hundreds of millions of people.

Chess is a two-player board game played on a chessboard, which is a square-checkered board with 64 squares arranged in an eight-by-eight grid. Each player begins the game with sixteen pieces: one king, one queen, two rooks, two knights, two bishops, and eight pawns, each of these types of pieces moving differently.

The objective of the game is to checkmate the opponent's king by placing it under threat of capture ("check") which cannot be avoided. In addition to checkmate, the game can be won by the voluntary resignation of one's opponent, which may occur when too much material is lost, or if checkmate appears unavoidable. A game may result in a draw in several ways, where neither player wins.

The course of the game is divided in three phases. The beginning of the game is called the opening (with the development of pieces). The opening yields to the phase

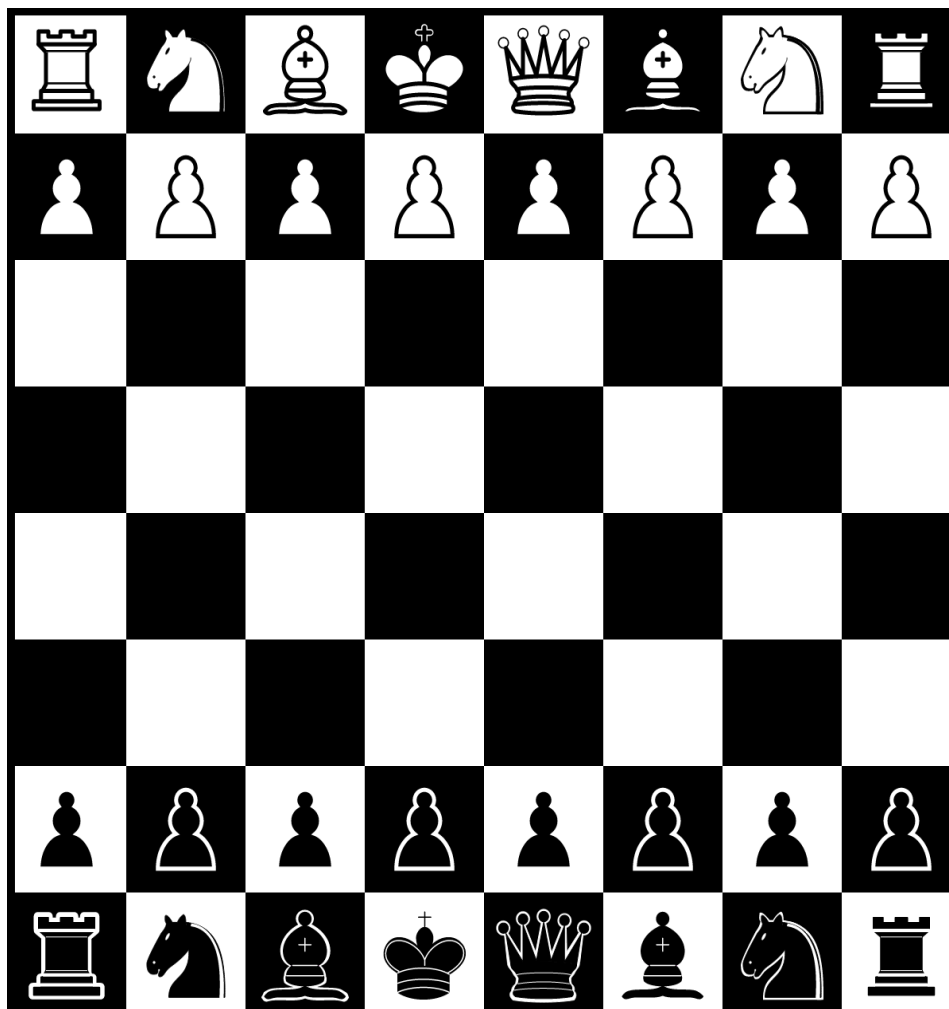
called the middlegame. The last phase is the endgame, where the players look to trap the opponent's king.

RULES OF CHESS

Each player controls sixteen pieces:

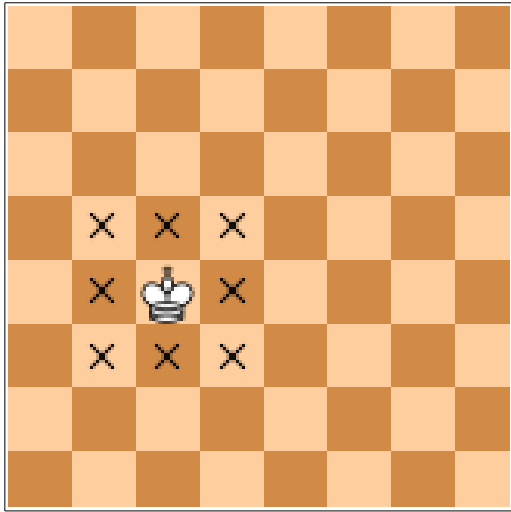
Piece	King	Queen	Rook	Bishop	Knight	Pawn
Number	1	1	2	2	2	8
Symbols	 	 	 	 	 	 

The eight vertical columns of squares are called 'files'. The eight horizontal rows of squares are called 'ranks'. At the beginning of the game, the pieces are arranged as shown :

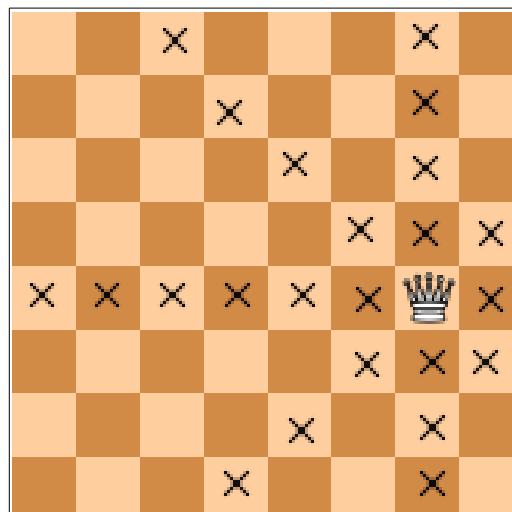


The different pieces move as follows :

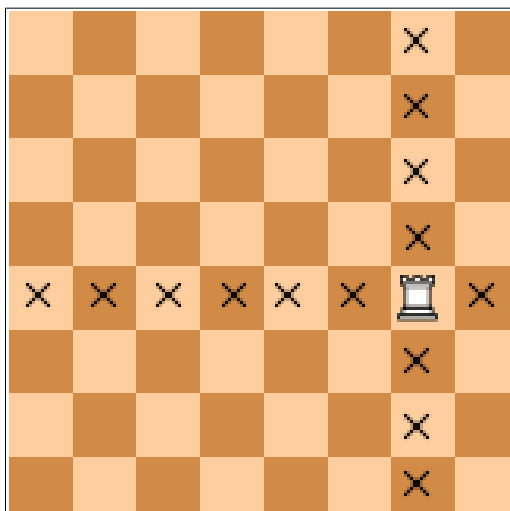
1) The King



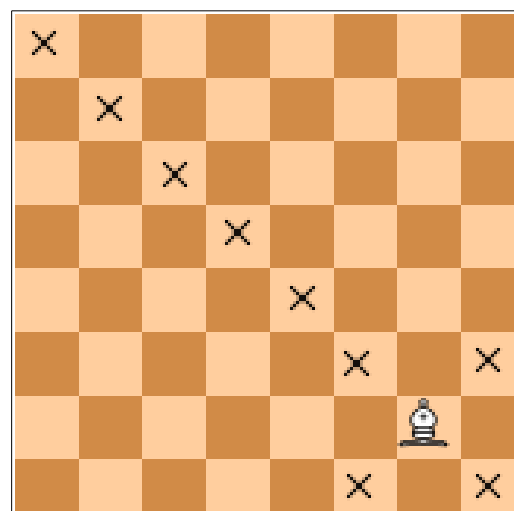
2) The Queen



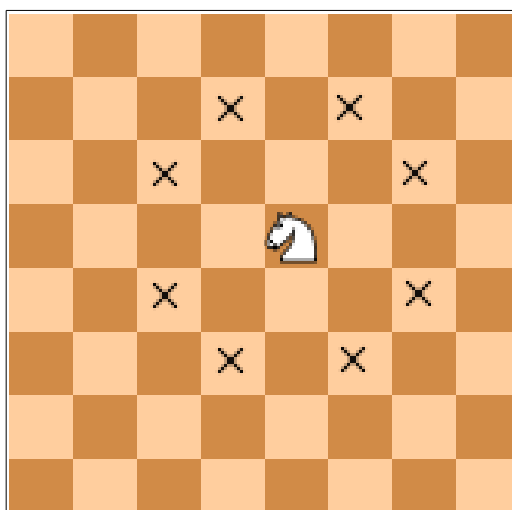
3) The Rook



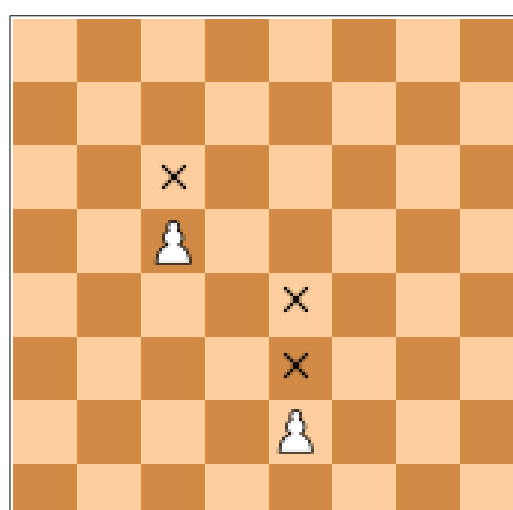
4) The Bishop



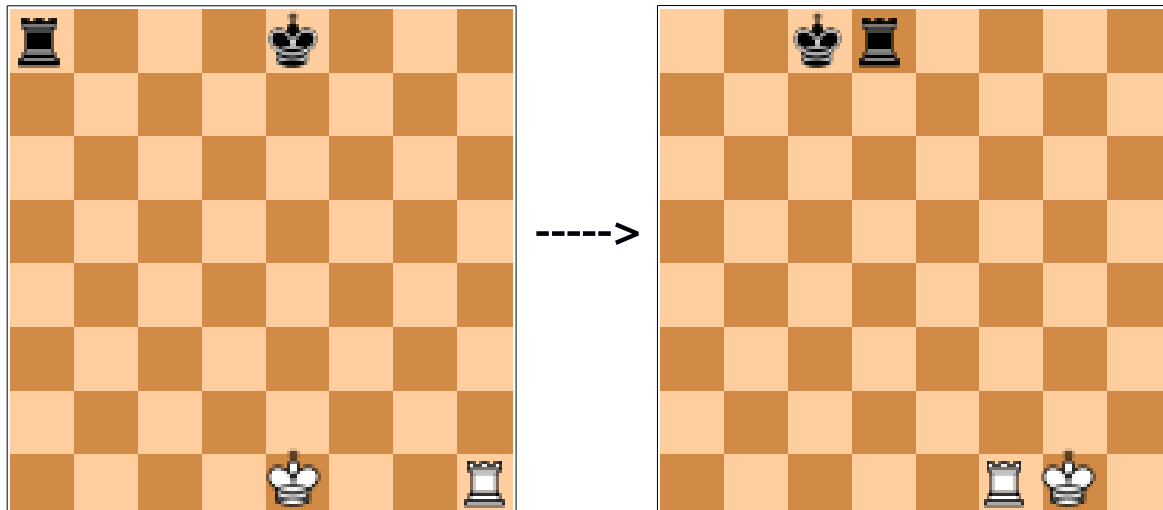
5) The Knight



6) The Pawn



Castling

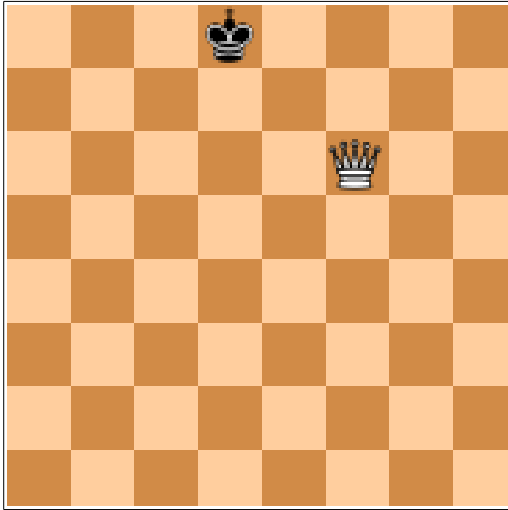


Castling is a move of the king and either rook of the same colour along the player's first rank, counting as a single move of the king and executed as follows: the king is transferred from its original square two squares towards the rook on its original square, then that rook is transferred to the square the king has just crossed.

The right to castle has been lost if the king has already moved, or with a rook that has already moved.

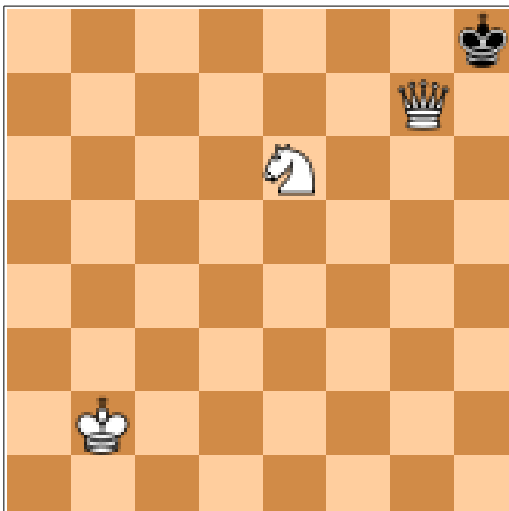
Castling is prevented temporarily if the square on which the king stands, or the square which it must cross, or the square which it is to occupy, is attacked by one or more of the opponent's pieces, or if there is any piece between the king and the rook with which castling is to be effected.

Check



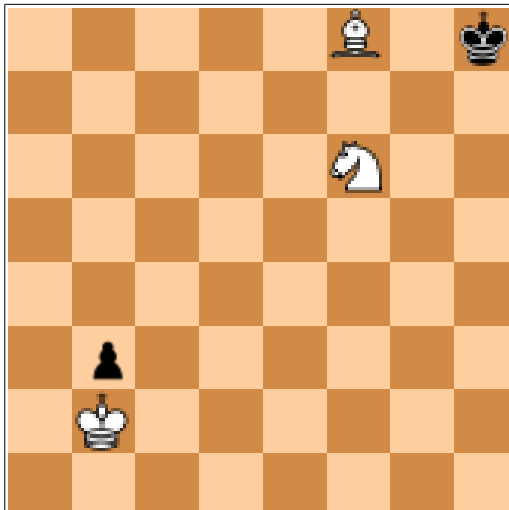
The King is under check when the square it occupies is attacked by one of the opponent pieces.

Checkmate



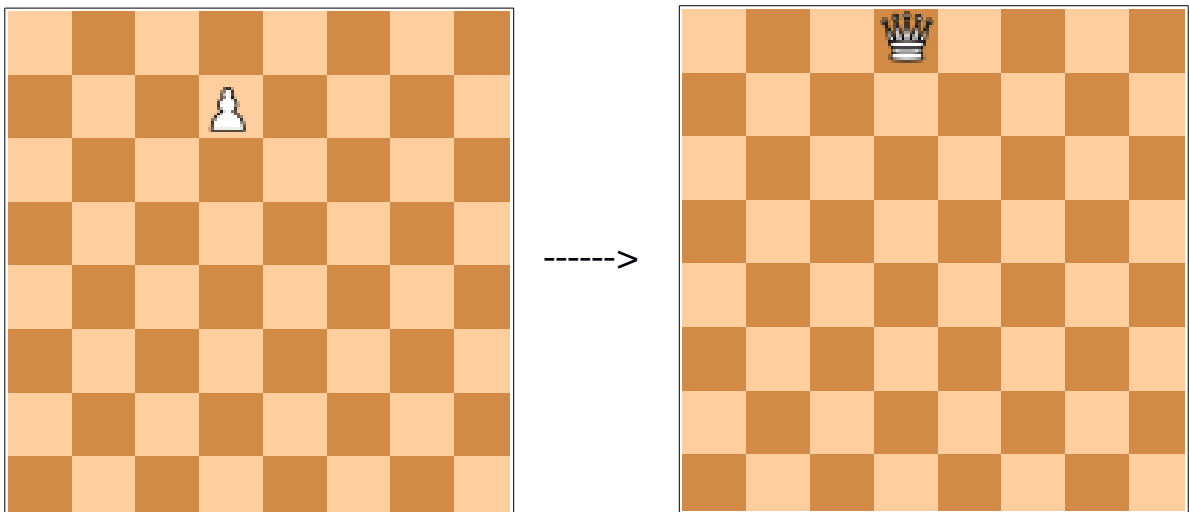
Checkmate occurs when one King is under check such that it is not possible for the King to get out of check. The game is over, and the other player wins.

Stalemate



Stalemate occurs when the King is not under check, but no possible move can be made by the player which avoids a check. The game is thus drawn.

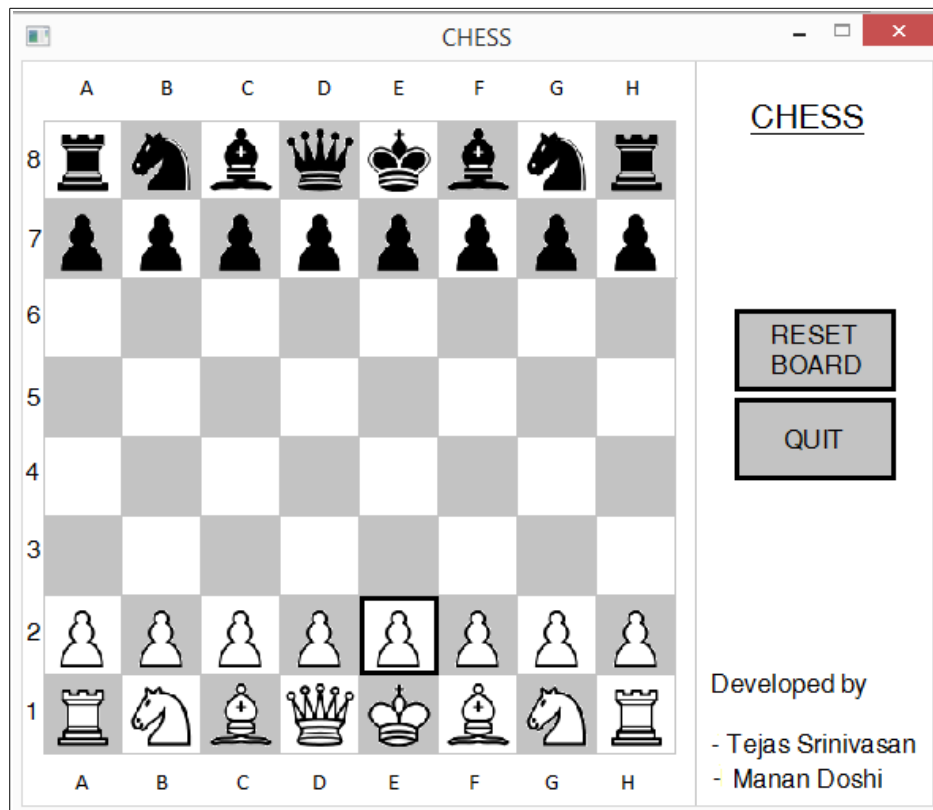
Pawn Promotion



When one of your pawns reaches the other end of the board, that pawn can be converted to any piece of your choice.

GAMEPLAY

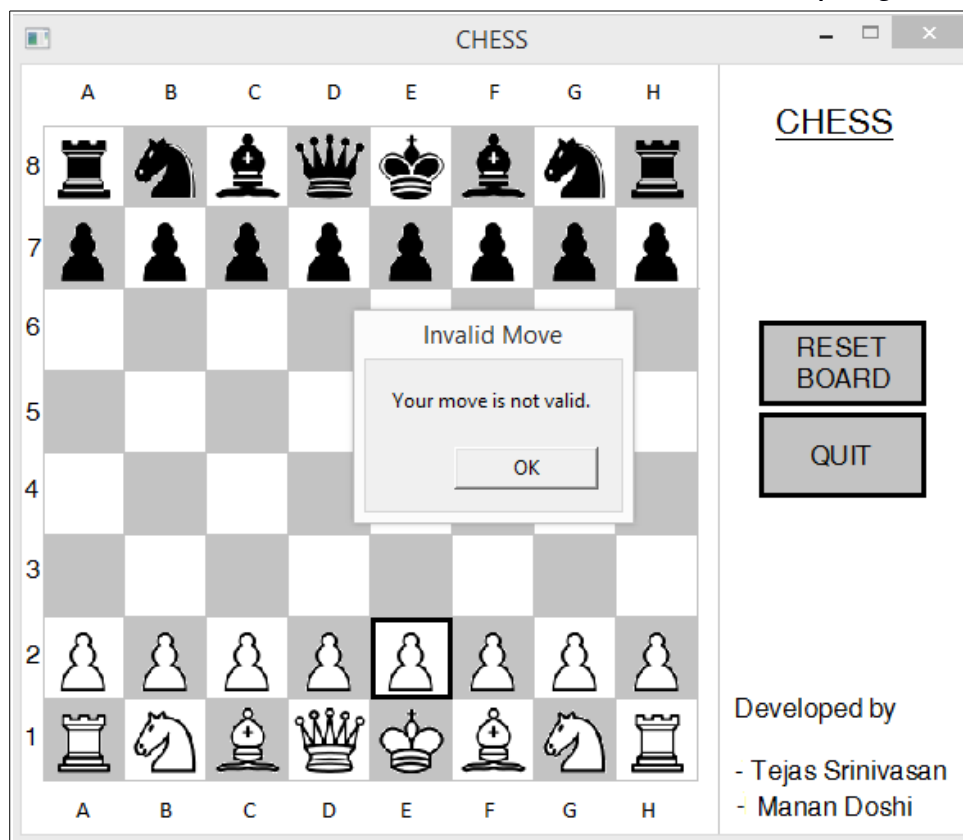
1) User clicks on piece to be moved.



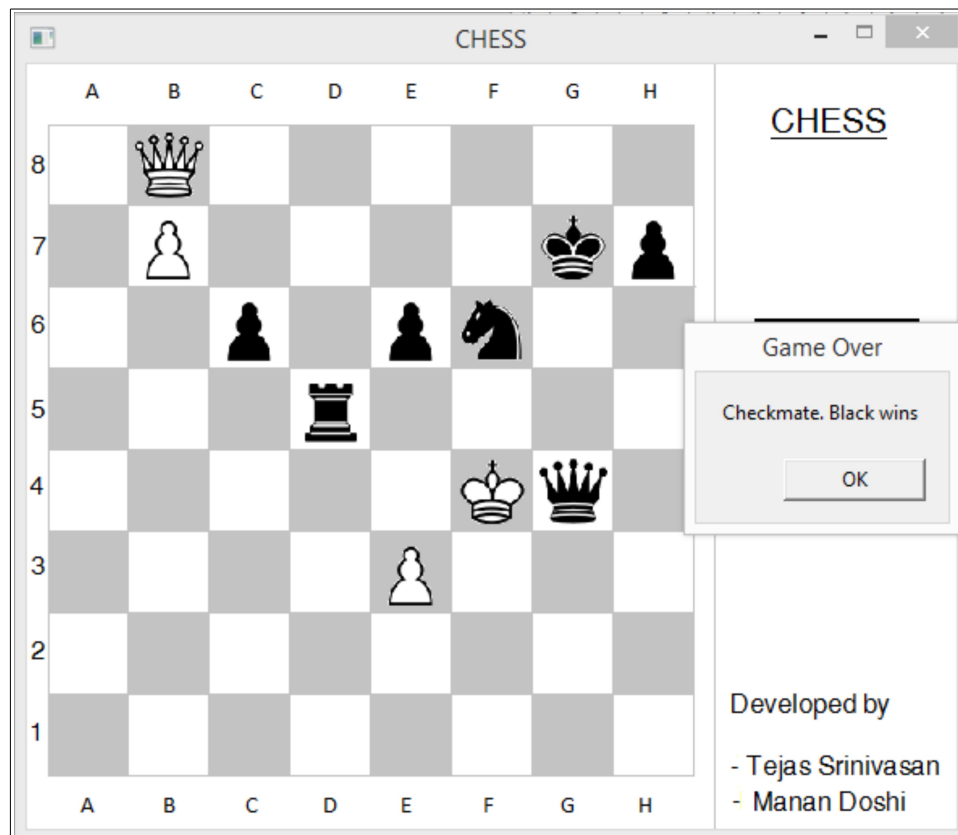
2) User clicks on the destination of the piece.

3) Program checks if said move is valid.

4) If valid, the move is made. If not, error is displayed.



5) A message is returned in case of check/checkmate/stalemate.



6) Computer makes its own move. After this, it is once again the user's turn.

