



CENG 201 PROJECT STAGE 2 - GROUP 8

CHESS GAME

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Date: 24.11.2024

Introduction:

We aim to create a turn-based chess game that will work flawlessly and look visually aesthetic.

In this report, we present the CRC cards and the complete class diagram that we have created based on what we wrote in the project stage 1 report.

CRC Cards:

Piece
RESPONSIBILITIES: <ul style="list-style-type: none">• Define and implement the most fundamental characteristics of a chess piece: the location and the color.• Define the methods for a chess piece's moving, as well as making sure it's a legal move according to chess.• Allow position and color of a piece be used externally.
COLLABORATIONS: <ul style="list-style-type: none">• Board• Game• Bishop• Pawn• King• Queen• Knight• Rook

Pawn
RESPONSIBILITIES: <ul style="list-style-type: none">• To visually illustrate a Pawn piece on the chessboard• To ensure that the rules pertaining to those moves by a Pawn are followed most especially the first move 2 square move and diagonal capturing
COLLABORATIONS: <ul style="list-style-type: none">• Board• Game• Piece

Rook
RESPONSIBILITIES: <ul style="list-style-type: none"> • Represent a Rook piece on the chessboard • Enforce Rook move regulations: to move straight in line, either vertically or horizontally, without jumping any other pieces
COLLABORATIONS: <ul style="list-style-type: none"> • Board • Game • <u>Piece</u>

Knight
RESPONSIBILITIES: <ul style="list-style-type: none"> • Enact the role of a knight chess piece in the game of chess • Test whether the Knight's move follows an 'L' pattern (2 squares in one direction, and 1 in the other perpendicular)
COLLABORATIONS: <ul style="list-style-type: none"> • Board • Game • <u>Piece</u>

Bishop
RESPONSIBILITIES: <ul style="list-style-type: none"> • Simulate the action of a bishop on a chess board • Assess Bishop's specific move (i.e. a diagonal move across the chess board)
COLLABORATIONS: <ul style="list-style-type: none"> • Board • Game • <u>Piece</u>

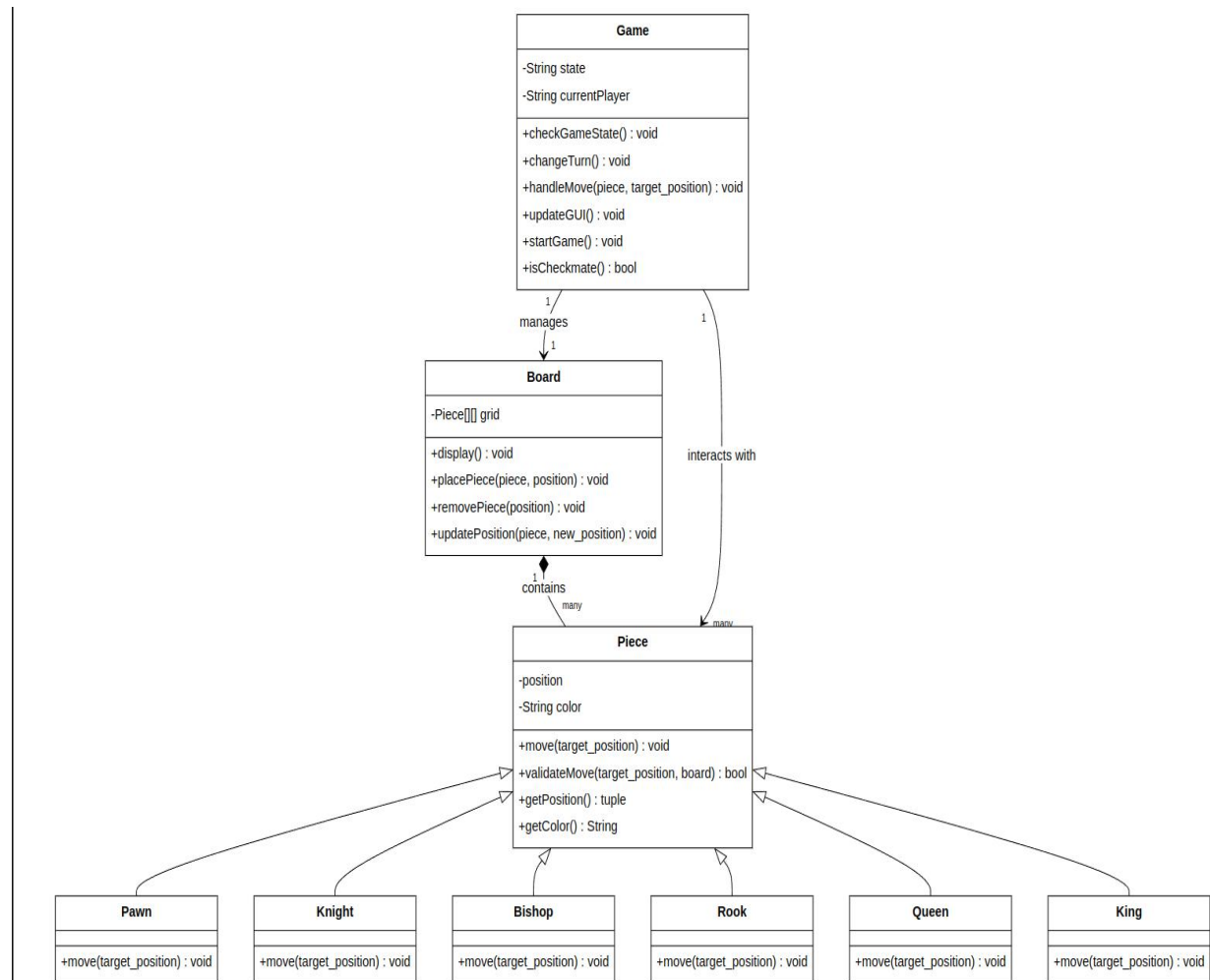
Queen
RESPONSIBILITIES: <ul style="list-style-type: none"> • Represent a Queen chess piece on the board • Rules on how a Queen can move are implemented: whether in diagonal, horizontal, or vertical direction
COLLABORATIONS: <ul style="list-style-type: none"> • Board • Game • <u>Piece</u>

King
RESPONSIBILITIES: <ul style="list-style-type: none"> • Provide an implementation of a King game piece on a chess board • Assess how the King moves (one square in any direction horizontal, vertical, or diagonal) • Assess whether the King is under attack or if the game has reached the stage of checkmate
COLLABORATIONS: <ul style="list-style-type: none"> • Board • Game • Piece

Board
RESPONSIBILITIES: <ul style="list-style-type: none"> • Graphically represent the 8x8 board structured as a chessboard • Ensure the coordination of space structures, operations of adding, moving and removing different playing chips on this space • rendering of the present conditions of this chess surface
COLLABORATIONS: <ul style="list-style-type: none"> • Piece • Game • Bishop • Pawn • King • Queen • Knight • Rook

Game
RESPONSIBILITIES: <ul style="list-style-type: none"> • The game itself should be directed with respect to whose turn it is, whether the game is still on, checks, or checkmates • Players take turns, making and checking moves
COLLABORATIONS: <ul style="list-style-type: none"> • <u>Piece</u> • Board

Class Diagram:



Conclusion:

The completed class diagram and CRC cards for the chess game we will develop in the project are as above. We plan to implement the project with class relationships and responsibilities similar to those shown here.

The UML diagram in our report was created by Sarper Avci. The CRC cards and other parts of the report were prepared through the collective effort of all four of us.