Project OOP

OOP.20222.Team19

Mandarin capture square

Team 19

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Board, test, player, GUI

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Gem, board, player, GUI

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Gem package, application

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Commit images

Mini-project description

-On the main screen:

+ Start: start the game. For convenient, you do not have to create different difficulties
+ Exit: exit the program. Be sure to ask users if they really want to quit the game
+ Help: Show guide for playing the game

-In the game:

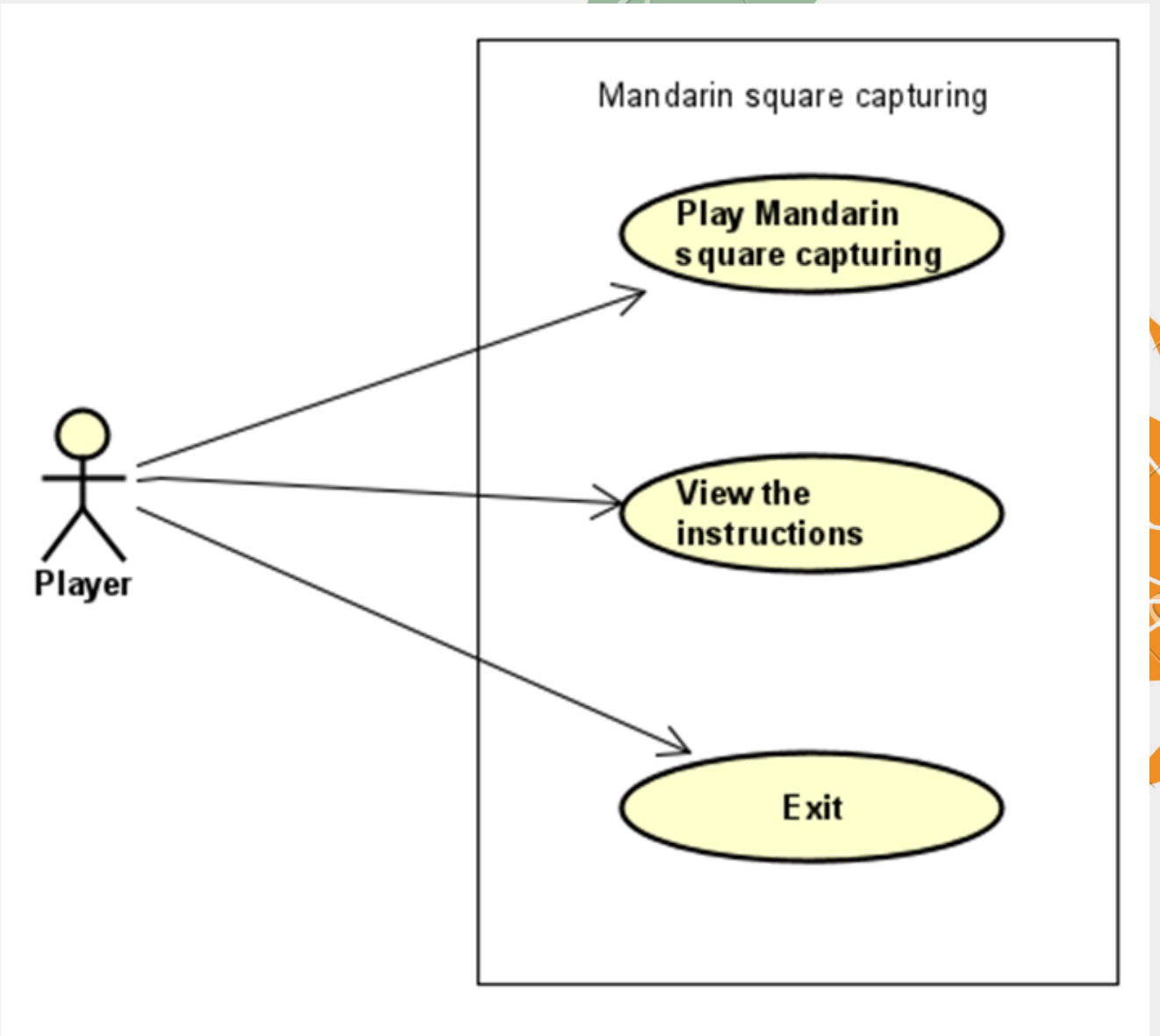
+ Game board: The game board consists of 10 squares, divided into 2 rows, and 2 half- circles on the 2 ends of the board. Initially, each square has 5 small gems, and each half- circle has 1 big gem. Each small gem equals 1 point, and each big gem equals 5 points.
+ The game ends when there is no gem in both half-circles. The application must notify who is the winner and the score of each player.

USE CASE DIAGRAM

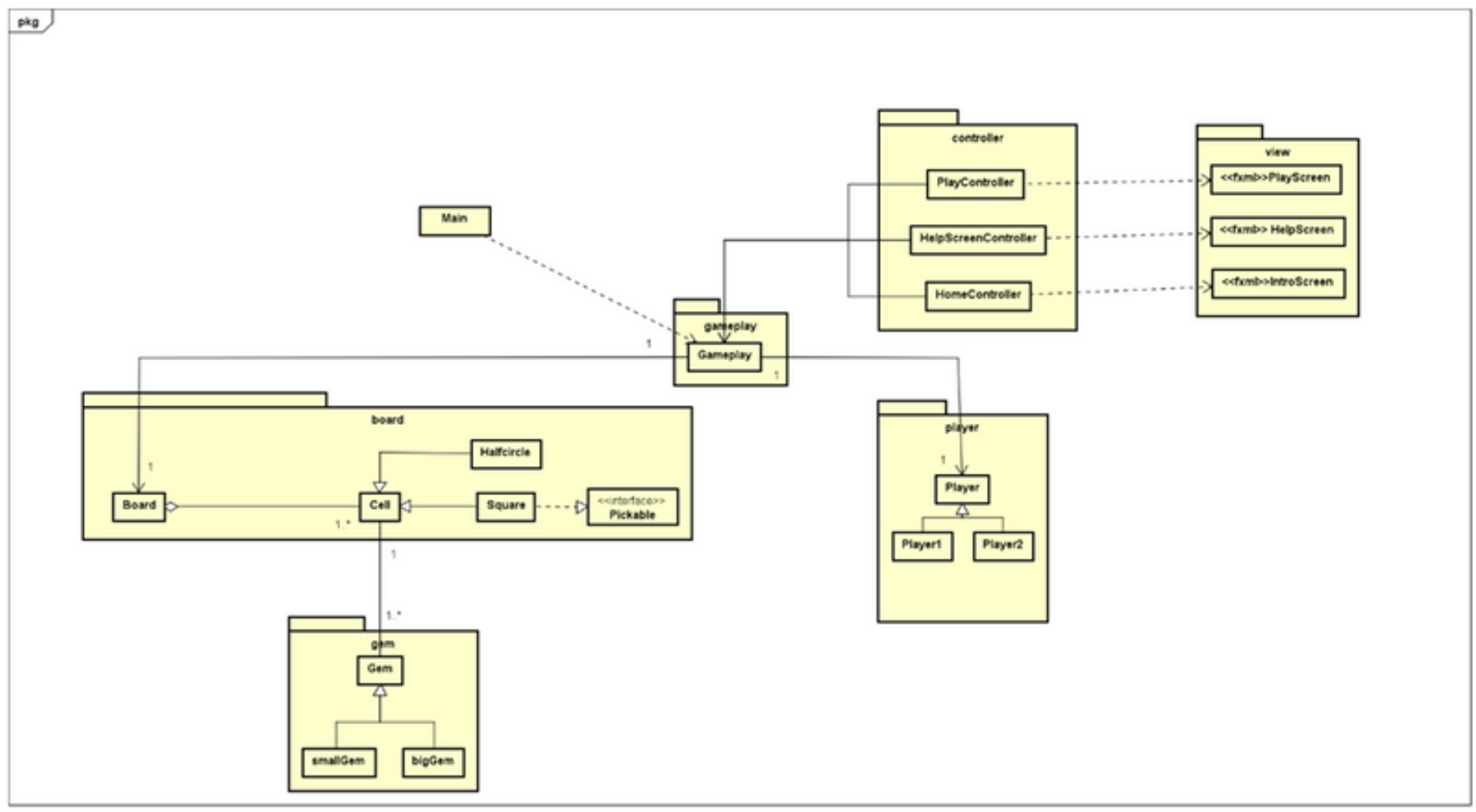
-Play game: When play choose to start the game (by clicking the Start button in the Intro Screen), the program displays a playing board, the player then plays the game following the rules stated in until the game is finished

Show instructions: Player can press Help to access the Help Menu from the Intro Screen to read about the instructions, the program should display a board showing rules of the game.

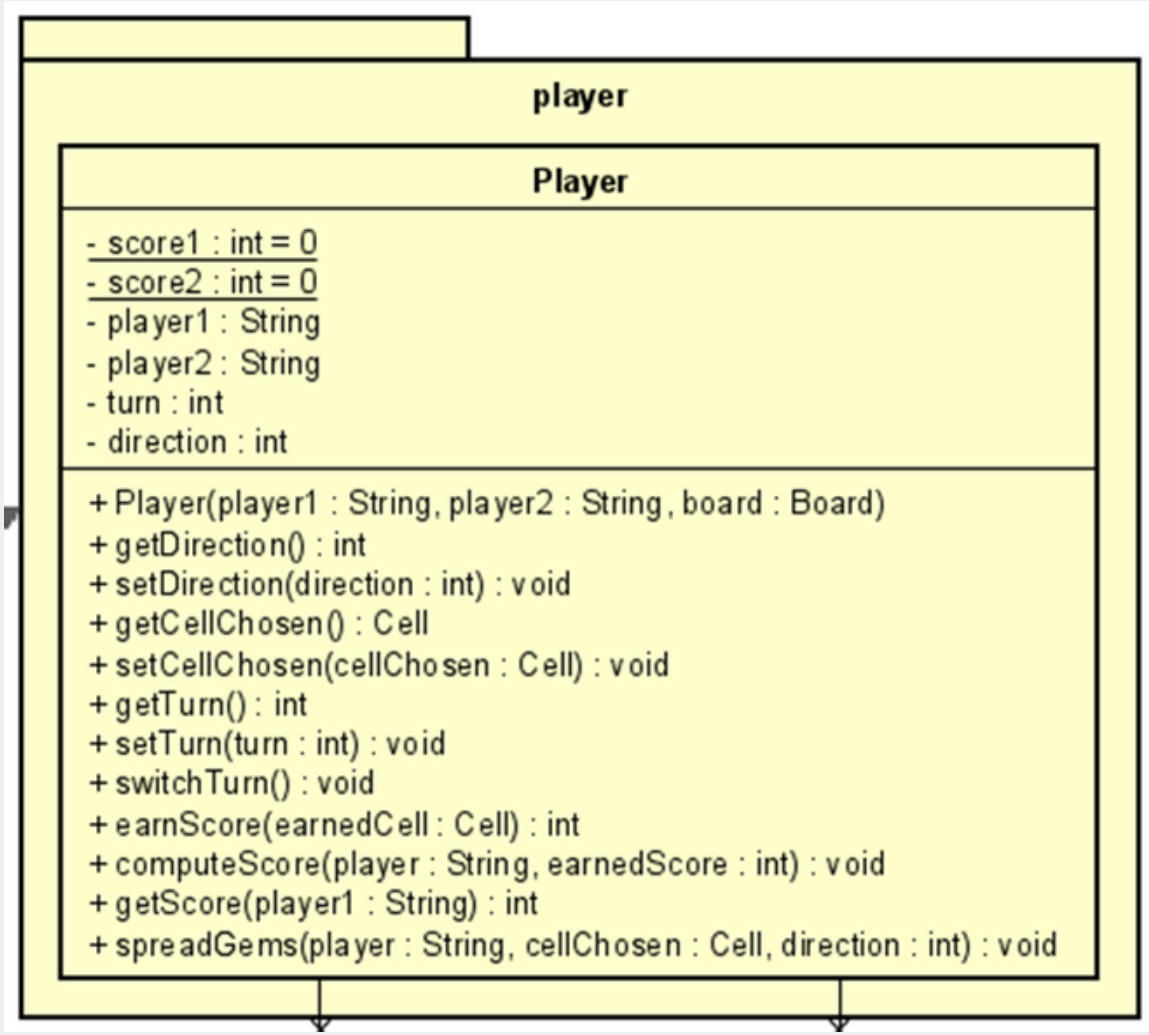
-Exit: Ask player to comfirm whether they want to exit or just misclick.



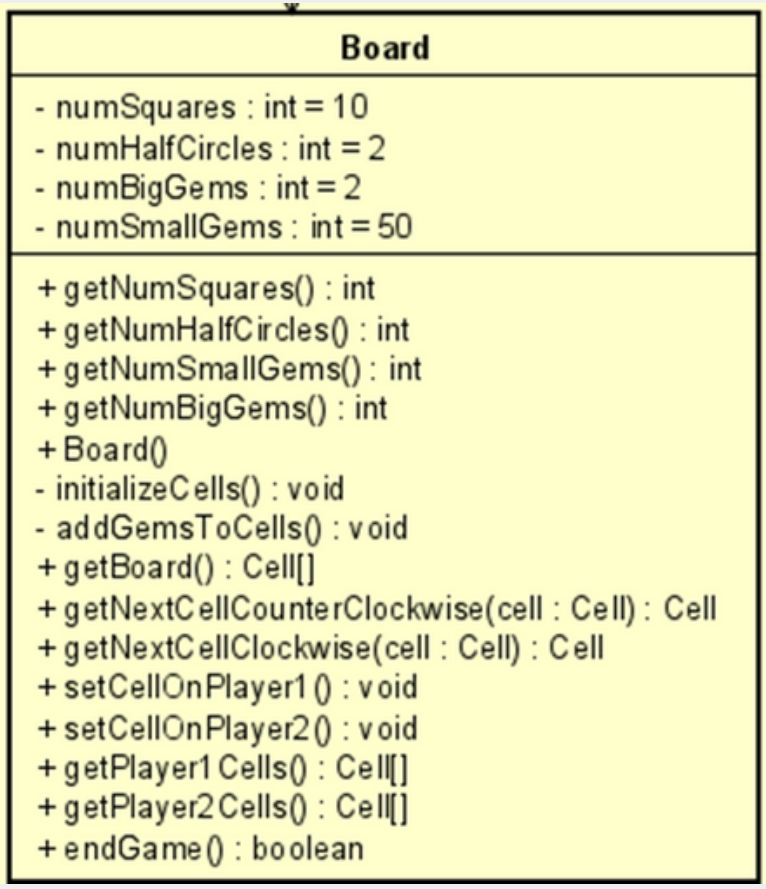
GENERAL CLASS DIAGRAM

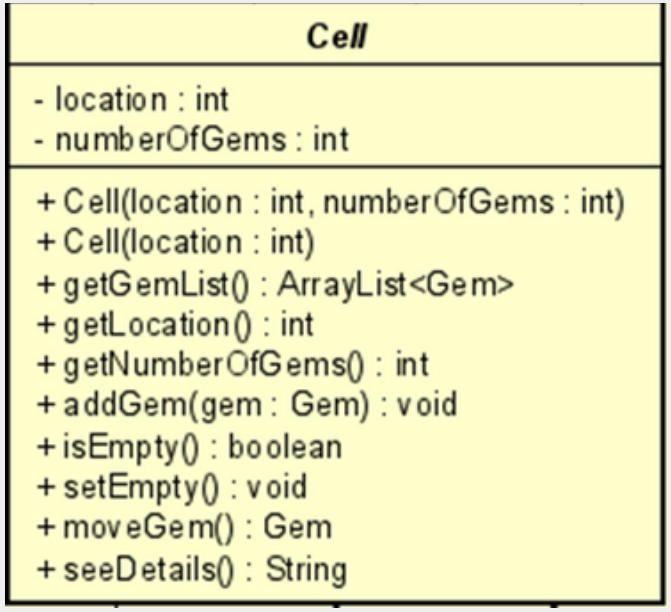


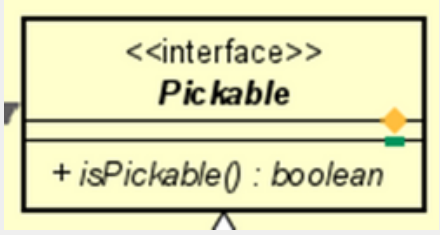
Detailed class diagram

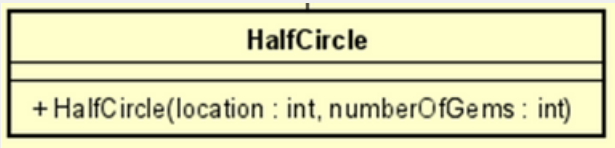


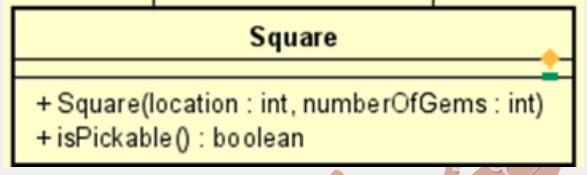
Detailed class diagram



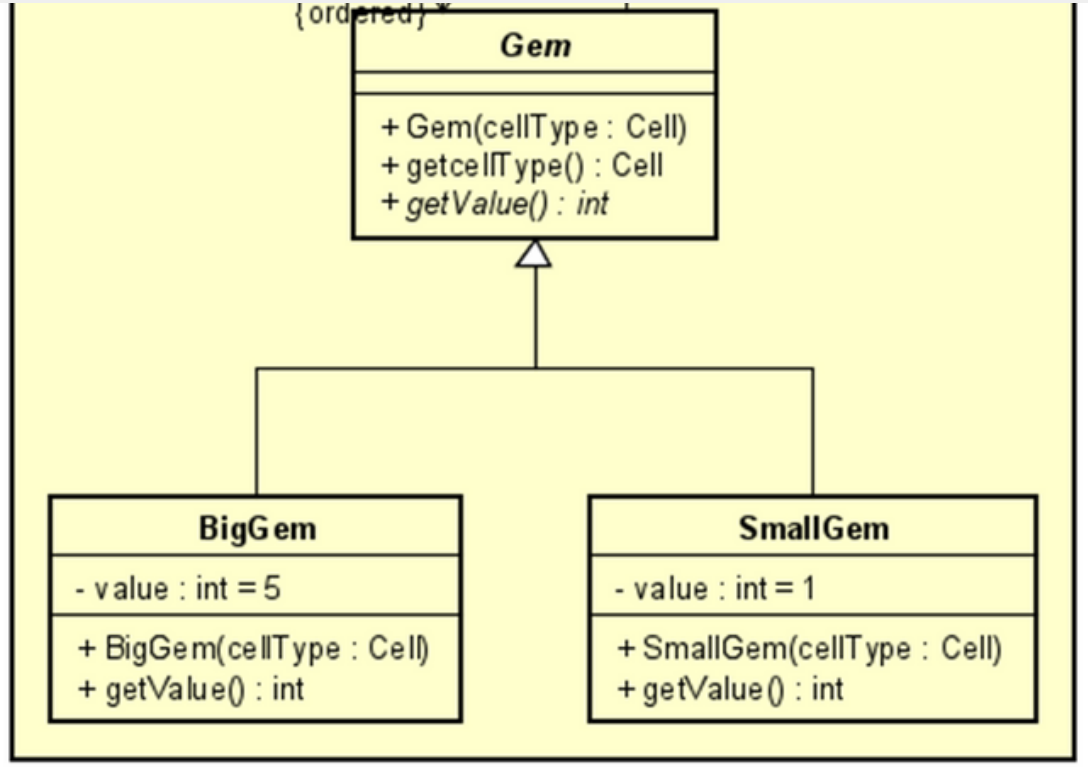








Detailed class diagram



Explanation of OOP techniques

Inheritance

Class smallGem and bigGem inherit Gem

Multi-level inheritance: Class Halfcircle and Square inherit Cell, and Square implement interface Pickable

Player1 and Player2 inherit Player

Explanation of OOP techniques

Association

Classes Cell and Board have aggregation relationship

Gem is a component of Cell (one-to-many association)

Classes Gameplay associates with board (one-to-one)

Classes Gameplay associates with Player (one-to-many)

Explanation of OOP techniques

Polymorphism

It can be utilized in both the bigGem and smallGem as objects of the Gem class, but with distinct values assigned to their attribute

It is also used in square and halfcircle as only square implements pickable.

DEMO VIDEO

Thank You !!