UML Skeleton

State

Boards

The 2D playing surface and its associated pieces
Player whitePlayer, blackPlayer
Die[][] board

Boards()
isOnBoard(int x, int y)

Player

A data structure containing the dice owned by any player
Die[] myDice

Stores information about a particular state in the game, and has methods for transforming between states

Die

One of the up-to-14 pieces on the board at any point in time
int top, bottom, ..., right
int x, y
Player player

Die(top, up, left, bottom, down, right, x, y, player)
getTop()
getSide(Direction dir)
roll(Direction dir)
jump(Direction dir)
isAdjacent(Die other)

Direction

A direction in 2D space
Up; Down; Left; Right

GameLogic

Game

Implements the game flow and logic in an abstract class
Boards board
int turn
Player currentPlayer
Controller whitePlayer, blackPlayer
Die currentMoveDie
bool hasMadeMove
Result result

makeMove(int x, int y, Direction direction)
endTurn()
bool isLegalMove()
Boards[] legalTurns()
isGameOver()

PurCubilino

Extends the abstract class with rules specific to this gamemode

ContraCubilino

Result

The outcome of the game
WhiteWins; BlackWins; Draw

Controller

Controller

A controller has the ability to determine what moves to make when requested by Game
bool isHuman
String name

requestMove()

Human

A controller controlled by a human player

EasyAI

An AI controller

DifficultAI

Interface

Draws the UI with JavaFX, relying on the data and methods stored in the Game class, and takes input for human-made moves
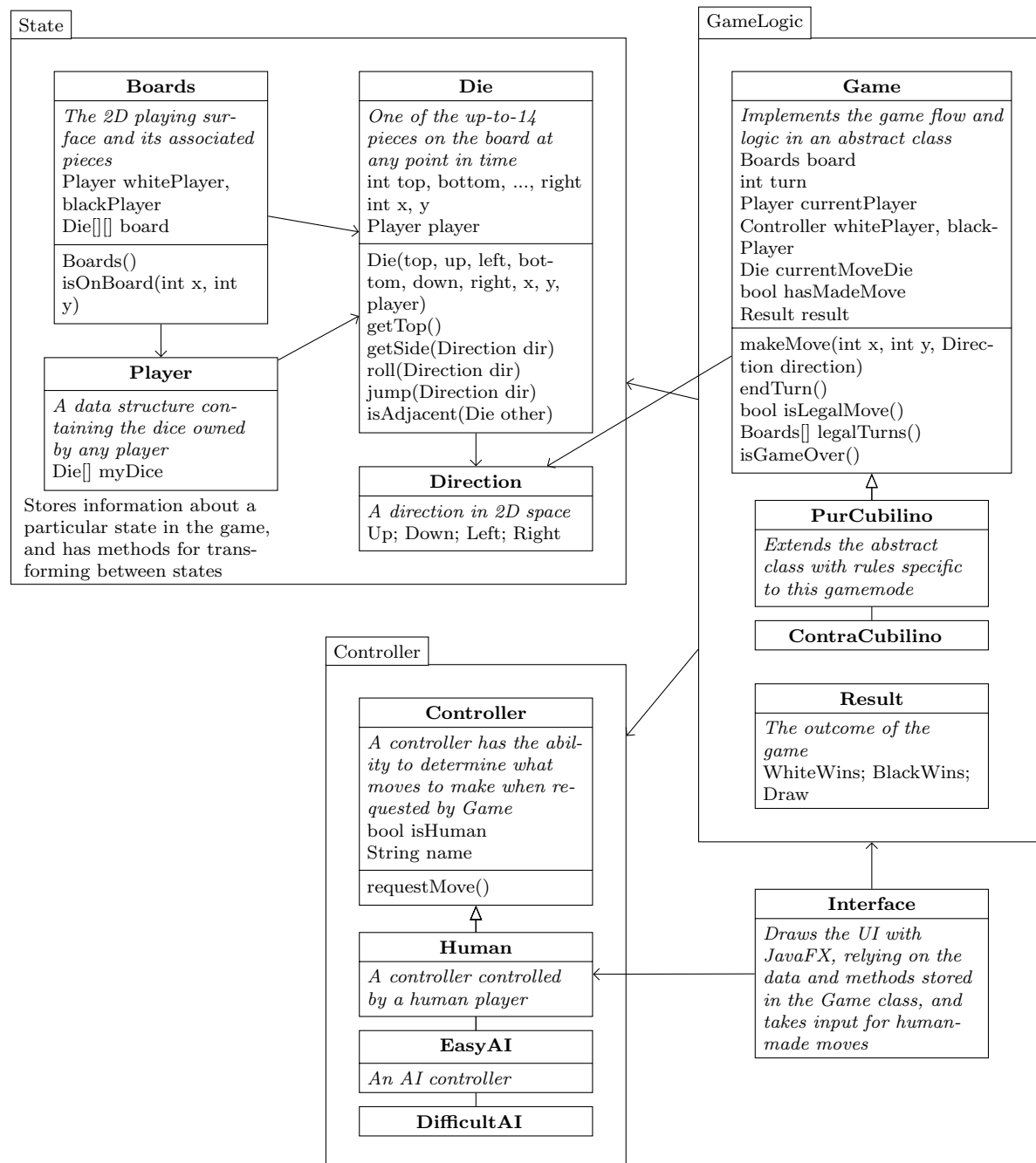
- The exterior boxes represent packages, and interior boxes denote the classes inside them, which contain their name, an italicised description, field variables, and methods.

- Most getter and setter methods are omitted, except for where they operate differently to normal (for example, in the `Die` class).

- White-triangular tipped arrows represent a number of classes extending one parent. Standard arrows represent a connection or reference between multiple classes.

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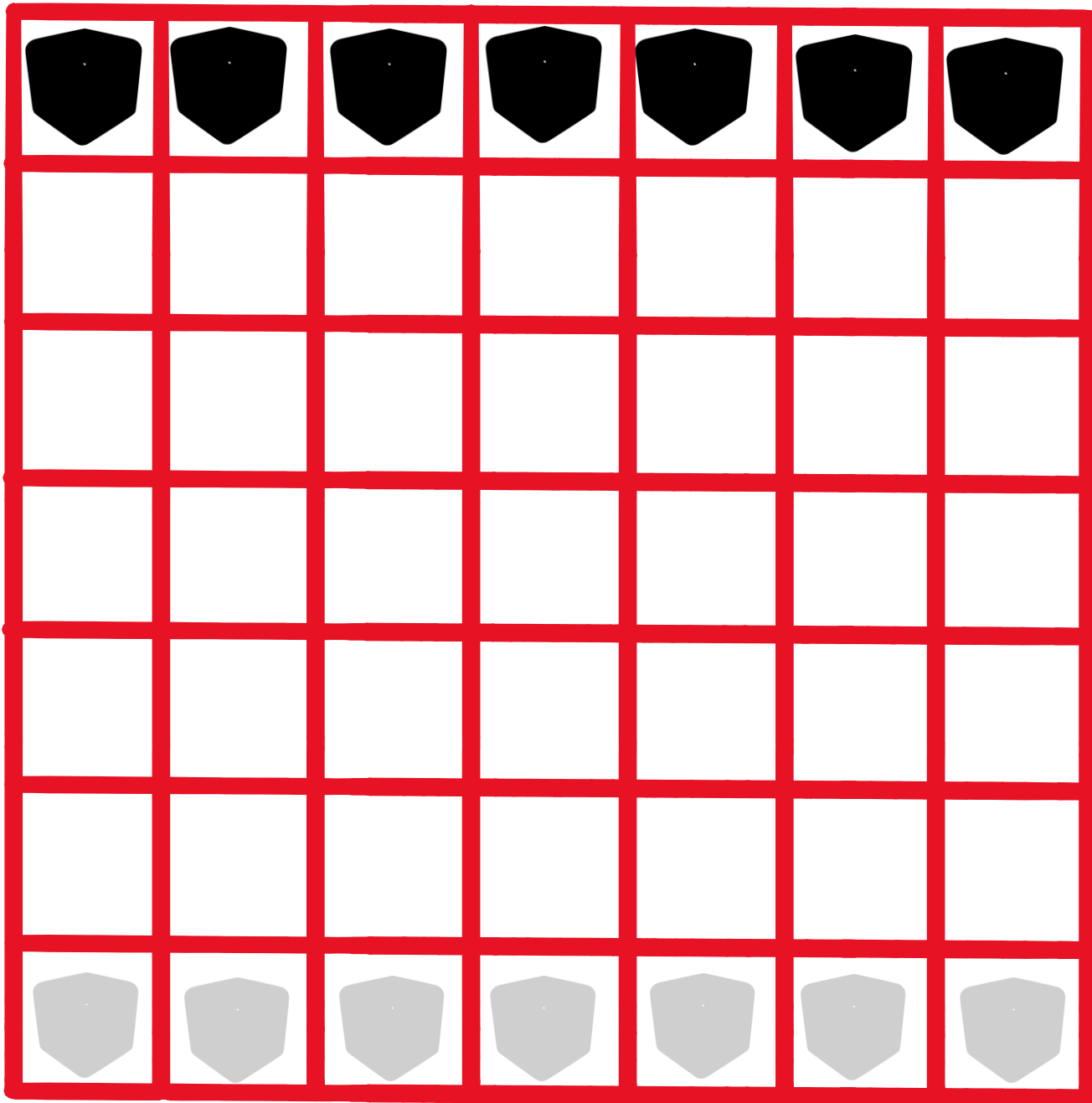
Cubilino

Colour

VS

Opponent

Gamemode

Start Game

Turn

Turn #

Opponent

Gamemode

End Turn

Rewind

Main Menu