Spencer Klem (group name: Spencer & Friends)
Period 6
Final Project: Tetris & TetrisBot
Description: it is Tetris, use the arrow keys to move the piece, and q and e to rotate the piece. Press P to activate “AImode”, in which a mediocre AI plays the game for you. The AI only breaks occasionally so it is not bad, and takes into account created holes and height. The AI is heuristical, meaning it analyzes every possible state, and determines the “best” one, but currently it is good at finding a mediocre state, and awful at finding the best state. This is due to three things: a lack of testing, a lack of foresight, and the fact that I have no idea how to play tetris. Apparently pros take bumpiness into account and I have no idea why, I thought that was a good thing.

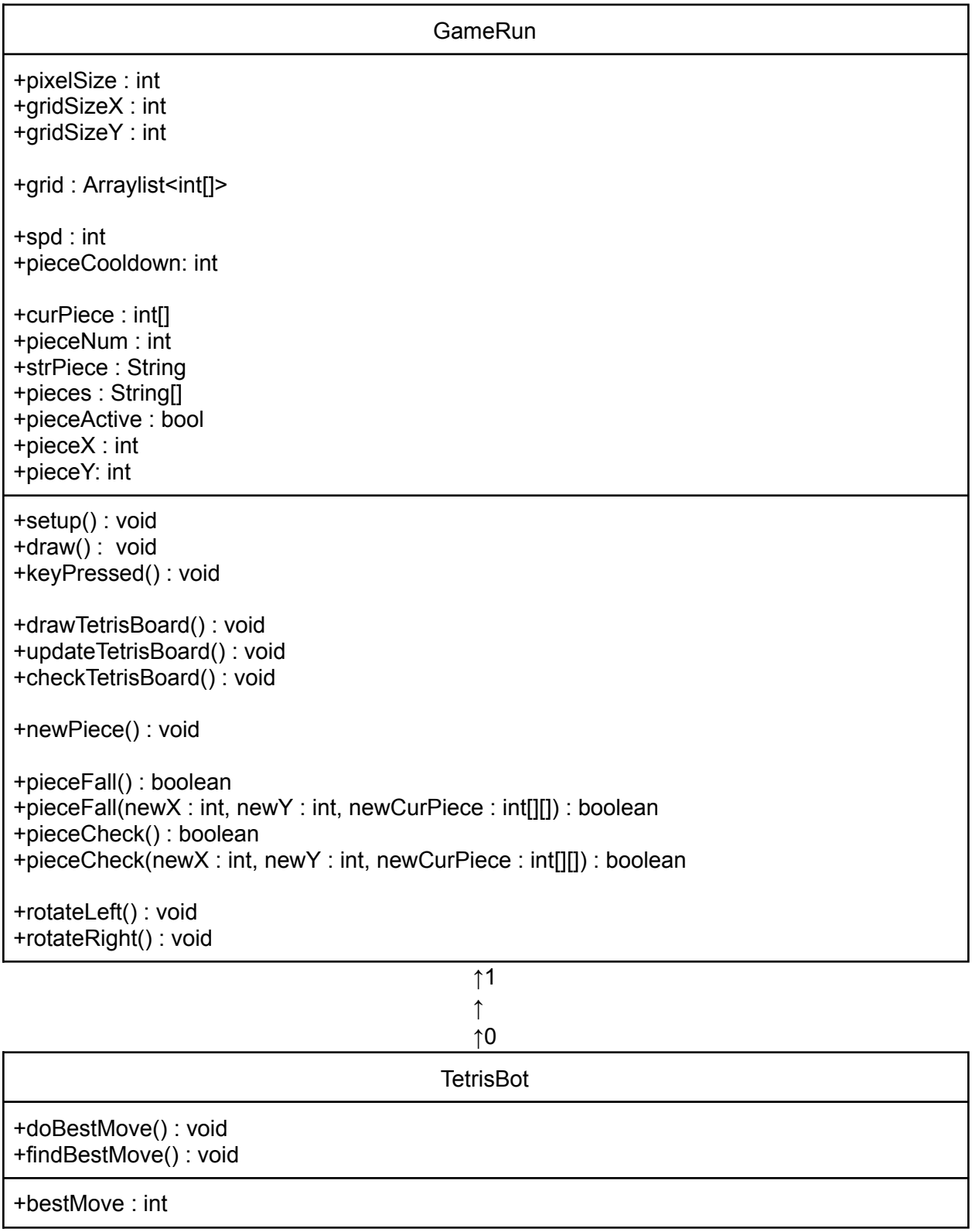
Current functionalities:

- You can play Tetris
- TetrisBot can play Tetris

How to play:

1. Press the run button, make sure you have a large enough screen (400 x 800)
2. Controls
    a. Q - rotate left
    b. E - rotate right
    c. Left arrow - move piece left
    d. Right arrow - move piece right
    e. Down arrow - move piece downward
    f. P - enter / exit AImode

UML


GameRun
+pixelSize : int
+gridSizeX : int
+gridSizeY : int
+grid : Arraylist<int[]>
+spd : int
+pieceCooldown: int
+curPiece : int[]
+pieceNum : int
+strPiece : String
+pieces : String[]
+pieceActive : bool
+pieceX : int
+pieceY: int
+setup() : void
+draw() : void
+keyPressed() : void
+drawTetrisBoard() : void
+updateTetrisBoard() : void
+checkTetrisBoard() : void
+newPiece() : void
+pieceFall() : boolean
+pieceFall(newX : int, newY : int, newCurPiece : int[][]) : boolean
+pieceCheck() : boolean
+pieceCheck(newX : int, newY : int, newCurPiece : int[][]) : boolean
+rotateLeft() : void
+rotateRight() : void
↑1
↑
↑0
TetrisBot
+doBestMove() : void
+findBestMove() : void
+bestMove : int