Junkbot - Scrabble V4

Assignment 4 - Challenge

Generated by Doxygen 1.8.17

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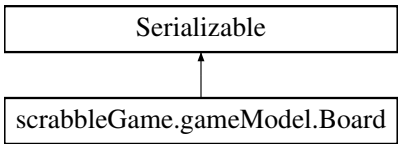
- class SquarePane
- class TilePane

Chapter 6

Class Documentation

6.1 scrabbleGame.gameModel.Board Class Reference

Inheritance diagram for scrabbleGame.gameModel.Board:



Public Member Functions

- Square[ ][ ] getBoard ()
- gameStatus getStatus ()
- void setStatus (gameStatus status)
- ArrayList< String > getWordsPlayed ()
- void addWordPlayed (Move m)
- Board ()
- void resetBoard ()
- int placeWord (Move m, Player p)
- int placeFirstWord (Move m, Player p)
- void printBoard ()
- String toString ()

6.1.1 Detailed Description

Board Class

This class represents the Board in Scrabble. The board is a 15 x 15 array of squares. The board has several methods of adding words to the board and initialising it. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Cal Nolan, Reuben Mulligan, Evan Spendlove

Version

1.0.0

Since

21-02-2020

6.1.2 Constructor & Destructor Documentation

6.1.2.1 Board()

```
scrabbleGame.gameModel.Board.Board ( )
```

Constructor for the Board object. This initialises the board object and then calls setBoard() to read in the board format.

Author

Reuben Mulligan

6.1.3 Member Function Documentation

6.1.3.1 addWordPlayed()

```
void scrabbleGame.gameModel.Board.addWordPlayed (
            Move m )
```

Adds a word played to the wordPlayed ArrayList.

Parameters

m	Pass the word that you want to add.

Author

Reuben Mulligan

6.1.3.2 getBoard()

```
Square [][] scrabbleGame.gameModel.Board.getBoard ( )
```

Getter for the board object.

Returns

square[][] Returns the board which is a 2D array of squares.

Author

Reuben Mulligan

6.1.3.3 getStatus()

```
gameStatus scrabbleGame.gameModel.Board.getStatus ( )
```

Getter for the current game status.

Returns

gameStatus Returns the current game status (as an enum).

Author

Reuben Mulligan

6.1.3.4 getWordsPlayed()

```
ArrayList<String> scrabbleGame.gameModel.Board.getWordsPlayed ( )
```

Getter for the array list of words player so far.

Returns

ArrayList Returns the ArrayList of strings (i.e. words) already played on the board.

Author

Reuben Mulligan

6.1.3.5 placeFirstWord()

```
int scrabbleGame.gameModel.Board.placeFirstWord (
            Move m,
            Player p )
```

Method to handle the first word placed in a game. Calls checkFirstMove to check if the word is valid, and then adds the word to the board.

Parameters

m	Pass the move that you wish to place on the board.
p	Pass the player who made the move so their score can be updated.

Returns

int Returns 2 if the move is successfully placed (also valid), and -1 if not placed.

Author

Cal Nolan

6.1.3.6 placeWord()

```
int scrabbleGame.gameModel.Board.placeWord (
            Move m,
            Player p )
```

Method for placing a word on the board. Calls checkValidMove() to validate a move before it is placed.

Parameters

m	Pass the move that you wish to place on the board.
p	Pass the player who made the move so their score can be updated.

Returns

int Returns 2 if the move is successfully placed (also valid), and -1 if not placed.

Author

Evan Spendlove

6.1.3.7 printBoard()

```
void scrabbleGame.gameModel.Board.printBoard ( )
```

Displays the board in ASCII format to the command line.

Author

Reuben Mulligan

6.1.3.8 resetBoard()

```
void scrabbleGame.gameModel.Board.resetBoard ( )
```

This method resets the board to its default state. It clears the words played and tiles from the board.

Author

Reuben Mulligan

6.1.3.9 setStatus()

```
void scrabbleGame.gameModel.Board.setStatus (
            gameStatus status )
```

Setter for updating the current game status.

Parameters

status	Pass the new game status.

Author

Reuben Mulligan

6.1.3.10 toString()

```
String scrabbleGame.gameModel.Board.toString ( )
```

Returns a user-friendly string representation of the board.

Returns

String Returns the string representation of the board.

Author

Evan Spendlove

The documentation for this class was generated from the following file:

- gameModel/Board.java

6.2 scrabbleGame.UI.components.BoardController Class Reference

Public Member Functions

- Board getBoardObject ()
- void setBoardObject (Board boardObject)
- SquarePane[ ][ ] getBoard ()
- void setBoard (SquarePane[ ][ ] board)
- TilePane removeTileFromBoard (int x, int y) throws TileNotFound
- void updateBoard (Board b)

6.2.1 Detailed Description

BoardController Class

This class is the controller for the board. This class contains all of the methods for interacting with the board Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

26-03-2020

6.2.2 Member Function Documentation

6.2.2.1 getBoard()

```
SquarePane [][] scrabbleGame.UI.components.BoardController.getBoard ( )
```

Getter for the board (SquarePane array)

Returns

SquarePane[][] Returns the board as a SquarePane array.

6.2.2.2 getBoardObject()

```
Board scrabbleGame.UI.components.BoardController.getBoardObject ( )
```

Getter for the board object.

Returns

Board Returns the board object.

6.2.2.3 removeTileFromBoard()

```
TilePane scrabbleGame.UI.components.BoardController.removeTileFromBoard (
            int x,
            int y ) throws TileNotFound
```

Method for removing a tile from the board based on x, y coordinates.

Parameters

x	Pass the x coordinate of the tile
y	Pass the y coordinate of the tile

Returns

TilePane Returns the tilePane object that was removed from the Board.

Exceptions

TileNotFound	Throws an exception if not Tile is found on the board at that location.

6.2.2.4 setBoard()

```
void scrabbleGame.UI.components.BoardController.setBoard (
            SquarePane board[][] )
```

Setter for the board (SquarePane array)

Parameters

board	Pass the board to be set.

6.2.2.5 setBoardObject()

```
void scrabbleGame.UI.components.BoardController.setBoardObject (
            Board boardObject )
```

Setter for the board object.

Parameters

boardObject	Pass the board object to be set.

6.2.2.6 updateBoard()

```
void scrabbleGame.UI.components.BoardController.updateBoard (
            Board b )
```

Method for updating the board and its graphical representation.

Parameters

b	Pass the new board to be set.

The documentation for this class was generated from the following file:

- UI/components/BoardController.java

6.3 scrabbleGame.UI.components.ConsoleController Class Reference

Public Member Functions

- String getLastCommand ()
- void setLastCommand (String lastCommand)
- ScrabbleEngineController getScrabbleEngineController ()
- void setScrabbleEngineController (ScrabbleEngineController scrabbleEngineController)
- void addLineToConsole (String s)
- List< Placement > createPlacement (String word, int[ ] gridRef, int direction)
- void updateLastWordsPlayed (String word)
- void setLastMoveScore (int score)
- int getLastMoveScore ()
- ArrayList< String > getLastWordsPlayed ()
- void challengeWord (String word) throws TileNotFound
- void removeWordFromBoard (Move word) throws TileNotFound
- void addTilesToFrame (Move lastMove, int prevPlayer)
- void deductScore (int scoreLastWord, int prevPlayer)
- void setLastMove (Move m)
- Move getLastMove ()

6.3.1 Detailed Description

ConsoleController Class

This is the Console Controller class, this will handle all of the input and output for the console menu of our scrabble game Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Reuben Mulligan, Evan Spendlove

Version

1.0.0

Since

18-03-20

6.3.2 Member Function Documentation

6.3.2.1 addLineToConsole()

```
void scrabbleGame.UI.components.ConsoleController.addLineToConsole (
            String s )
```

Method takes an input string and appends it to the console window

Parameters

s	The string you want to add to the console

Author

Evan Spendlove

6.3.2.2 addTilesToFrame()

```
void scrabbleGame.UI.components.ConsoleController.addTilesToFrame (
            Move lastMove,
            int prevPlayer )
```

Method addTilesToFrame takes a move and a player number and adds the tiles they played from the last turn back to their frame

Parameters

lastMove	Pass the lastMove - the tiles from this will be added to the frame.
prevPlayer	Pass the previous player whose frame is to be updated.

6.3.2.3 challengeWord()

```
void scrabbleGame.UI.components.ConsoleController.challengeWord (
            String word ) throws TileNotFound
```

Method challengeWord takes a word and checks if it is a real word against a set dictionary, if it isn't it removes the previous players turn. If the challenge fails, it ends the players turn.

Parameters

word	Pass the word to be challenge.

Exceptions

TileNotFound	Throws a TileNotFound if the tile to be removed for a move cannot be found on the board.

6.3.2.4 createPlacement()

```
List<Placement> scrabbleGame.UI.components.ConsoleController.createPlacement (
            String word,
            int[] gridRef,
            int direction )
```

Method createPlacement takes a word, grid reference and a direction and create a list of Placement Objects from it

Parameters

word	Pass the word to be set for the placement.
gridRef	Pass the array [x, y] of integer grid references.
direction	Pass the direction of the placement : 0 = horizontal, 1 = vertical

Returns

placements, a list of Placement objects

6.3.2.5 deductScore()

```
void scrabbleGame.UI.components.ConsoleController.deductScore (
            int scoreLastWord,
            int prevPlayer )
```

Method deductScore takes a score for the last word and a player number and adjusts the players score accordingly

Parameters

scoreLastWord	Pass the score of the last word to be deducted from the Player's score.
prevPlayer	Pass the player number to be updated

6.3.2.6 getLastCommand()

```
String scrabbleGame.UI.components.ConsoleController.getLastCommand ( )
```

Getter for lastCommand

Returns

lastCommand

6.3.2.7 getLastMove()

```
Move scrabbleGame.UI.components.ConsoleController.getLastMove ( )
```

Getter for lastMove which returns the lastMove played.

Returns

lastMove Returns the lastMove played.

6.3.2.8 getLastMoveScore()

```
int scrabbleGame.UI.components.ConsoleController.getLastMoveScore ( )
```

Getter for lastMoveScore

Returns

int Returns the lastMoveScore integer variable

6.3.2.9 getLastWordsPlayed()

```
ArrayList<String> scrabbleGame.UI.components.ConsoleController.getLastWordsPlayed ( )
```

Getter for lastWordsPlayed

Returns

ArrayList(String) Returns the lastWordsPlayed variable.

6.3.2.10 getScrabbleEngineController()

```
ScrabbleEngineController scrabbleGame.UI.components.ConsoleController.getScrabbleEngine↩
Controller ( )
```

Getter for ScrabbleEngineController

Returns

scrabbleEngineController

6.3.2.11 removeWordFromBoard()

```
void scrabbleGame.UI.components.ConsoleController.removeWordFromBoard (
            Move word ) throws TileNotFound
```

Method removeWordFromBoard takes a move and removes the tiles from the board.

Parameters

word	Pass the move to be removed from the board.

Exceptions

TileNotFound	Throws a TileNotFound if the tile to be removed for a move cannot be found on the board.

6.3.2.12 setLastCommand()

```
void scrabbleGame.UI.components.ConsoleController.setLastCommand (
            String lastCommand )
```

Setter for lastCommand

Parameters

lastCommand	Pass the string to be set

6.3.2.13 setLastMove()

```
void scrabbleGame.UI.components.ConsoleController.setLastMove (
            Move m )
```

Setter for lastMove.

Parameters

m	Pass the move to be set.

6.3.2.14 setLastMoveScore()

```
void scrabbleGame.UI.components.ConsoleController.setLastMoveScore (
            int score )
```

Setter for lastMoveScore

Parameters

score	Pass the score to update lastMoveScore with.

6.3.2.15 setScrabbleEngineController()

```
void scrabbleGame.UI.components.ConsoleController.setScrabbleEngineController (
            ScrabbleEngineController scrabbleEngineController )
```

Setter for ScrabbleEngineController

Parameters

scrabbleEngineController	Pass the controller to be set

6.3.2.16 updateLastWordsPlayed()

```
void scrabbleGame.UI.components.ConsoleController.updateLastWordsPlayed (
            String word )
```

Method updateLastWordsPlayed takes a word and adds it to the lastWordsPlayed function

Parameters

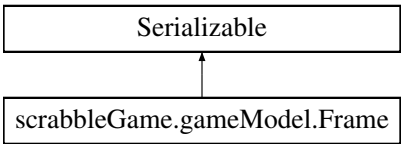
word	Pass the word to be added to lastWordsPlayed

The documentation for this class was generated from the following file:

- UI/components/ConsoleController.java

6.4 scrabbleGame.gameModel.Frame Class Reference

Inheritance diagram for scrabbleGame.gameModel.Frame:



Public Member Functions

- ArrayList< Tile > getTiles ()
- Frame (ArrayList< Tile > startingTiles)
- Frame (Pool p)
- Frame ()
- void addTile (Tile letter)
- void exchangeBlank (Tile t)
- boolean containsTile (Tile letter)
- boolean containsTile (char letter)
- Tile getTile (char letter)
- Tile playTile (Tile letter)
- Tile discardTile (Tile letter)
- boolean isEmpty ()
- void refillFrame (Pool pool)
- String toString ()

6.4.1 Detailed Description

Frame Class

This class represents the Frame (Rack) in Scrabble. The frame contains up to 7 tiles. It has methods for removing and adding tiles. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

07-02-2020

6.4.2 Constructor & Destructor Documentation

6.4.2.1 Frame() [1/3]

```
scrabbleGame.gameModel.Frame.Frame (
            ArrayList< Tile > startingTiles )
```

Constructor which takes an ArrayList of tiles as an argument for initialising tiles field.

Parameters

startingTiles	Pass this argument to initialise the frame with up to 7 tiles.

6.4.2.2 Frame() [2/3]

```
scrabbleGame.gameModel.Frame.Frame (
            Pool p )
```

Constructor which takes an instance of Pool as an argument and initialises tiles field using refillFrame().

Parameters

p	Pass this argument to initialise the frame with tiles from the Pool.

6.4.2.3 Frame() [3/3]

```
scrabbleGame.gameModel.Frame.Frame ( )
```

Empty constructor which initialises the tiles ArrayList to a new ArrayList with capacity for 7 tiles.

6.4.3 Member Function Documentation

6.4.3.1 addTile()

```
void scrabbleGame.gameModel.Frame.addTile (
            Tile letter )
```

Private method used for adding tiles to the Frame.

Parameters

letter	Pass the tile that you want to add to the Frame.

6.4.3.2 containsTile() [1/2]

```
boolean scrabbleGame.gameModel.Frame.containsTile (
            char letter )
```

Method used for checking if the rack contains a given tile.

Parameters

letter	Pass the letter that you want to check (Tile conversion done by method).

Returns

boolean Returns true if the rack contains the tile, else false.

6.4.3.3 containsTile() [2/2]

```
boolean scrabbleGame.gameModel.Frame.containsTile (
            Tile letter )
```

Method used for checking if the rack contains a given tile.

Parameters

letter	Pass the tile that you want to check.

Returns

boolean Returns true if the rack contains the tile, else false.

6.4.3.4 discardTile()

```
Tile scrabbleGame.gameModel.Frame.discardTile (
            Tile letter )
```

Method used for discarding a tile that you do not want.

Parameters

letter	Pass the tile that you do not want to keep.

Returns

Tile Returns the tile that you are discarding.

6.4.3.5 exchangeBlank()

```
void scrabbleGame.gameModel.Frame.exchangeBlank (
            Tile t )
```

Method to exchange a blank tile for a different tile when it is being played.

Parameters

t	Pass the tile which is to be exchanged.

6.4.3.6 getTile()

```
Tile scrabbleGame.gameModel.Frame.getTile (
            char letter )
```

Method used for getting a tile from the rack

Parameters

letter	Pass the letter that you want to get.

Returns

Tile Returns the Tile for the given letter on the rack.

6.4.3.7 getTiles()

```
ArrayList<Tile> scrabbleGame.gameModel.Frame.getTiles ( )
```

Getter for tiles ArrayList.

Returns

ArrayList Returns the ArrayList of tiles stored in the Frame.

6.4.3.8 isEmpty()

```
boolean scrabbleGame.gameModel.Frame.isEmpty ( )
```

Method used for checking if the rack is currently empty.

Returns

boolean Returns true if the rack is empty, else false.

6.4.3.9 playTile()

```
Tile scrabbleGame.gameModel.Frame.playTile (
            Tile letter )
```

Method used for playing a tile on the board.

Parameters

letter	Pass the tile that you want to play.

Returns

Tile Returns the tile after removing it from the rack.

6.4.3.10 refillFrame()

```
void scrabbleGame.gameModel.Frame.refillFrame (
            Pool pool )
```

Method used for refilling the frame to the full 7 tiles from a pool.

Parameters

pool	Pass the pool from which the letters will be drawn.

6.4.3.11 toString()

```
String scrabbleGame.gameModel.Frame.toString ( )
```

Method overriding toString() from Object to allow custom String for printing

Returns

String Returns a custom String representation of this Class

The documentation for this class was generated from the following file:

- gameModel/Frame.java

6.5 scrabbleGame.UI.components.FrameController Class Reference

Public Member Functions

- Frame getFrameObj ()
- void setFrameObj (Frame frameObj)
- TilePane[ ] getRack ()
- void setRack (TilePane[ ] rack)
- GridPane getFramePanes ()
- void setFramePanes (GridPane framePanes)
- ScrabbleEngineController getScrabbleEngineController ()
- void setScrabbleEngineController (ScrabbleEngineController scrabbleEngineController)
- void updateFrame (Frame f)
- TilePane playTile (int offset)
- void clearFrame ()
- void refillFrame (Pool p)
- int exchangeTiles (char[ ] toChange) throws IllegalArgumentException
- void playWord (Move m)

6.5.1 Member Function Documentation

6.5.1.1 clearFrame()

```
void scrabbleGame.UI.components.FrameController.clearFrame ( )
```

Method to clear the frame and its graphical representation.

6.5.1.2 exchangeTiles()

```
int scrabbleGame.UI.components.FrameController.exchangeTiles (
            char[] toChange ) throws IllegalArgumentException
```

Method to exchange tiles for new tiles in the pool.

Parameters

toChange	Pass the array of characters that you want to exchange.

Returns

int Returns an error-code (-1) if the exchange is unsuccessful.

Exceptions

IllegalArgumentException	Throws an exception if the frame does not contain the tiles to be exchanged.

6.5.1.3 getFrameObj()

```
Frame scrabbleGame.UI.components.FrameController.getFrameObj ( )
```

6.5.1.4 getFramePanes()

```
GridPane scrabbleGame.UI.components.FrameController.getFramePanes ( )
```

6.5.1.5 getRack()

```
TilePane [] scrabbleGame.UI.components.FrameController.getRack ( )
```

6.5.1.6 getScrabbleEngineController()

```
ScrabbleEngineController scrabbleGame.UI.components.FrameController.getScrabbleEngineController
( )
```

6.5.1.7 playTile()

```
TilePane scrabbleGame.UI.components.FrameController.playTile (
            int offset )
```

Method to play a tile which updates the frame after the letter is played.

Parameters

offset	Pass the offset (index in the frame object) of the Tile to be played.

Returns

TilePane Returns the tilePane object that is to be played on the board.

6.5.1.8 playWord()

```
void scrabbleGame.UI.components.FrameController.playWord (
            Move m )
```

Method to ply a word and remove its letters from the frame.

Parameters

m	Pass the move to be played.

6.5.1.9 refillFrame()

```
void scrabbleGame.UI.components.FrameController.refillFrame (
            Pool p )
```

Method to refill the frame (and its graphical representation) using a pool.

Parameters

p	Pass the pool from which the letters are drawn.

6.5.1.10 setFrameObj()

```
void scrabbleGame.UI.components.FrameController.setFrameObj (
            Frame frameObj )
```

6.5.1.11 setFramePanes()

```
void scrabbleGame.UI.components.FrameController.setFramePanes (
            GridPane framePanes )
```

6.5.1.12 setRack()

```
void scrabbleGame.UI.components.FrameController.setRack (
            TilePane[] rack )
```

6.5.1.13 setScrabbleEngineController()

```
void scrabbleGame.UI.components.FrameController.setScrabbleEngineController (
            ScrabbleEngineController scrabbleEngineController )
```

6.5.1.14 updateFrame()

```
void scrabbleGame.UI.components.FrameController.updateFrame (
            Frame f )
```

Method to update the frame object and the visual representation of the frame.

Parameters

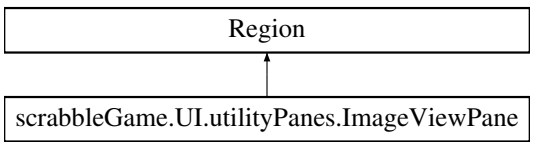
f	Pass the frame to be set.

The documentation for this class was generated from the following file:

- UI/components/FrameController.java

6.6 scrabbleGame.UI.utilityPanes.ImageViewPane Class Reference

Inheritance diagram for scrabbleGame.UI.utilityPanes.ImageViewPane:



Public Member Functions

- ObjectProperty< ImageView > imageViewProperty ()
- ImageView getImageView ()
- void setImageView (ImageView imageView)
- ImageViewPane ()
- ImageViewPane (ImageView imageView)

Protected Member Functions

- void layoutChildren ()

6.6.1 Detailed Description

ImageViewPane Class

This class is a modified ImageView which allows for the image to scale with the screen. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Version

1.0.0

Since

18-03-2020

6.6.2 Constructor & Destructor Documentation

6.6.2.1 ImageViewPane() [1/2]

```
scrabbleGame.UI.utilityPanes.ImageViewPane.ImageViewPane ( )
```

Constructor for ImageViewPane

6.6.2.2 ImageViewPane() [2/2]

```
scrabbleGame.UI.utilityPanes.ImageViewPane.ImageViewPane (
            ImageView imageView )
```

Constructor for ImageViewPane which adds a listener for the the imageView being updated.

Parameters

imageView	Pass the ImageView object to be set.

6.6.3 Member Function Documentation

6.6.3.1 getImageView()

```
ImageView scrabbleGame.UI.utilityPanes.ImageViewPane.getImageView ( )
```

Getter for ImageView

Returns

ImageView

6.6.3.2 imageViewProperty()

```
ObjectProperty<ImageView> scrabbleGame.UI.utilityPanes.ImageViewPane.imageViewProperty ( )
```

Getter for imageViewProperty

Returns

ObjectProperty

6.6.3.3 layoutChildren()

```
void scrabbleGame.UI.utilityPanes.ImageViewPane.layoutChildren ( )  [protected]
```

Method for laying out child objects of the imageViewPane

6.6.3.4 setImageView()

```
void scrabbleGame.UI.utilityPanes.ImageViewPane.setImageView (
            ImageView imageView )
```

Setter for ImageView

Parameters

imageView	Pass the ImageView to be set

The documentation for this class was generated from the following file:

- UI/utilityPanes/ImageViewPane.java

6.7 scrabbleGame.gameModel.Lexicon Class Reference

Public Member Functions

- Lexicon ()

Static Public Member Functions

- static void readInDict ()
- static boolean checkWord (String word)
- static int size ()

6.7.1 Detailed Description

Public class to provide a HashSet that can be used to find whether a given word is in the dictionary Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Cal Nolan

Version

1.0.0

Since

03-03-2020

6.7.2 Constructor & Destructor Documentation

6.7.2.1 Lexicon()

```
scrabbleGame.gameModel.Lexicon.Lexicon ( )
```

Blank constructor which initialises the dictionary by calling readInDict()

6.7.3 Member Function Documentation

6.7.3.1 checkWord()

```
static boolean scrabbleGame.gameModel.Lexicon.checkWord (
            String word )  [static]
```

Checks whether a given word exists within the dictionary

Parameters

word	The word to be checked

Returns

True if the word is found in the dictionary, else returns false

6.7.3.2 readInDict()

```
static void scrabbleGame.gameModel.Lexicon.readInDict ( )  [static]
```

Static method to initialise the dictionary and read in from a text file containing all words.

6.7.3.3 size()

```
static int scrabbleGame.gameModel.Lexicon.size ( )  [static]
```

Returns the size of the dictionary (as a HashSet)

Returns

int Returns the size of the HashSet asn an int

The documentation for this class was generated from the following file:

- gameModel/Lexicon.java

6.8 scrabbleGame.gameModel.MainTest Class Reference

Static Public Member Functions

- static void main (String[ ] args)

6.8.1 Member Function Documentation

6.8.1.1 main()

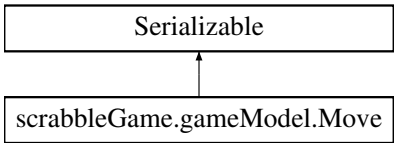
```
static void scrabbleGame.gameModel.MainTest.main (
            String[ ] args )  [static]
```

The documentation for this class was generated from the following file:

- gameModel/MainTest.java

6.9 scrabbleGame.gameModel.Move Class Reference

Inheritance diagram for scrabbleGame.gameModel.Move:



Public Member Functions

- Move (List< Placement > plays, String word, int direction)
- String getWord ()
- int getDirection ()
- List< Placement > getPlays ()
- boolean isBingo ()
- int getScore ()
- void setScore (int score)
- boolean includesBlank ()
- ArrayList< Character > getBlankLetter ()
- void addBlankLetter (char blankLetter)
- String toString ()

6.9.1 Detailed Description

Square Class

This class represents a single square on the Scrabble board. A square can have different multipliers, represented using an enum. There are the relevant getters/setters for accessing the squares fields. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

21-02-2020

6.9.2 Constructor & Destructor Documentation

6.9.2.1 Move()

```
scrabbleGame.gameModel.Move.Move (
            List< Placement > plays,
            String word,
            int direction )
```

Constructor which sets the score to 0 by default and sets bingo based on the number of tiles to be played.

Parameters

plays	List of Tile placements.
word	Word to be played on the board (including hook letter)
direction	Direction: 0 = horizontal, 1 = vertical

6.9.3 Member Function Documentation

6.9.3.1 addBlankLetter()

```
void scrabbleGame.gameModel.Move.addBlankLetter (
            char blankLetter )
```

Setter for the character that replaced the blank.

Parameters

blankLetter	Pass the character that replaced the blank tile.

6.9.3.2 getBlankLetter()

```
ArrayList<Character> scrabbleGame.gameModel.Move.getBlankLetter ( )
```

Getter for the character that replaced the blank.

Returns

char Returns the character that replaced the blank.

6.9.3.3 getDirection()

```
int scrabbleGame.gameModel.Move.getDirection ( )
```

Getter for the direction. 0 = horizontal, 1 = vertical.

Returns

int Returns an integer indicating the direction in which the word is placed.

6.9.3.4 getPlays()

```
List<Placement> scrabbleGame.gameModel.Move.getPlays ( )
```

Getter for the List of Tile Placements.

Returns

List Returns a list of Tile Placements.

6.9.3.5 getScore()

```
int scrabbleGame.gameModel.Move.getScore ( )
```

Getter for accessing the score associated with this move.

Returns

int Returns the score associated with the move as an int.

6.9.3.6 getWord()

```
String scrabbleGame.gameModel.Move.getWord ( )
```

Getter for the word

Returns

String Returns the word to be played on the board (including hook letter) as a String.

6.9.3.7 includesBlank()

```
boolean scrabbleGame.gameModel.Move.includesBlank ( )
```

Getter for checking if the move includes a blank letter

Returns

boolean Returns true if the move contains a (previously) blank letter

6.9.3.8 isBingo()

```
boolean scrabbleGame.gameModel.Move.isBingo ( )
```

Getter for checking if a move is to be awarded the bingo bonus.

Returns

boolean Returns a boolean indicating if the move is a bingo-move.

6.9.3.9 setScore()

```
void scrabbleGame.gameModel.Move.setScore (
            int score )
```

Setter for the score associated with this move.

Parameters

score	Pass the score (non-zero) that you wish to set.

6.9.3.10 toString()

```
String scrabbleGame.gameModel.Move.toString ( )
```

Method used for accessing a user-friendly String representation of this object.

Returns

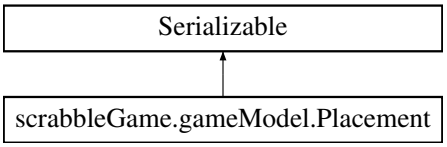
String Returns this object in a user-friendly string format.

The documentation for this class was generated from the following file:

- gameModel/Move.java

6.10 scrabbleGame.gameModel.Placement Class Reference

Inheritance diagram for scrabbleGame.gameModel.Placement:



Public Member Functions

- Placement (int x, int y, char c)
- int getX ()
- void setX (int x)
- int getY ()
- void setY (int y)
- char getLetter ()
- void setLetter (char letter)
- String toString ()

6.10.1 Detailed Description

Placement Class

This class represents a single placement of a tile. It uses x and y coordinates to locate its placement on the board. It also stores the letter to be placed as a character.

Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

22-02-2020

6.10.2 Constructor & Destructor Documentation

6.10.2.1 Placement()

```
scrabbleGame.gameModel.Placement.Placement (
            int x,
            int y,
            char c )
```

Constructor for the Placement class. Calls setters for all variables for proper input-verification.

Parameters

x	Pass the X coordinate you wish to set.
y	Pass the Y coordinate you wish to set.
c	Pass the letter to be placed.

6.10.3 Member Function Documentation

6.10.3.1 getLetter()

```
char scrabbleGame.gameModel.Placement.getLetter ( )
```

Getter for the letter.

Returns

char Returns the letter to be placed as a character.

6.10.3.2 getX()

```
int scrabbleGame.gameModel.Placement.getX ( )
```

Getter for X coordinate.

Returns

int Returns the X coordinate as an int.

6.10.3.3 getY()

```
int scrabbleGame.gameModel.Placement.getY ( )
```

Getter for the Y coordinate.

Returns

int Returns the Y coordinate as an int.

6.10.3.4 setLetter()

```
void scrabbleGame.gameModel.Placement.setLetter (
            char letter )
```

Setter for the letter.

Parameters

letter	Pass the letter to be placed.

6.10.3.5 setX()

```
void scrabbleGame.gameModel.Placement.setX (
            int x )
```

Setter for the X coordinate.

Parameters

x	Pass the X coordinate you wish to set.

6.10.3.6 setY()

```
void scrabbleGame.gameModel.Placement.setY (
            int y )
```

Setter for the Y coordinate.

Parameters

y	Pass the Y coordinate you wish to set.

6.10.3.7 toString()

```
String scrabbleGame.gameModel.Placement.toString ( )
```

This returns the desired String format that represents this object. This form is (X, Y, Letter).

Returns

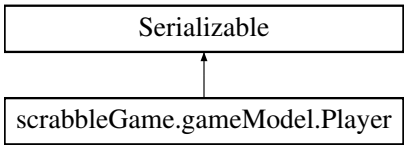
String Returns the desired String format of the object.

The documentation for this class was generated from the following file:

- gameModel/Placement.java

6.11 scrabbleGame.gameModel.Player Class Reference

Inheritance diagram for scrabbleGame.gameModel.Player:



Public Member Functions

- Player (String username, int score, Frame frame)
- Player (String username, int score)
- Player (String username, Frame frame)
- Player (String username)
- String getUsername ()
- int getScore ()
- Frame getFrame ()
- void setFrame (Frame frame)
- void setUsername (String username)
- void setScore (int score)
- void increaseScore (int addition)
- void resetPlayer ()
- String toString ()
- String dumpPlayerInfo ()

6.11.1 Detailed Description

Player Class

This class represents the Player in Scrabble. The player has a username, a score and their frame (rack). The class has the relevant getters and setters, and a reset() method. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Reuben Mulligan

Version

1.0.0

Since

07-02-2020

6.11.2 Constructor & Destructor Documentation

6.11.2.1 Player() [1/4]

```
scrabbleGame.gameModel.Player.Player (
            String username,
            int score,
            Frame frame )
```

This is the full constructor that initialises the username, score and frame.

Parameters

username	Pass the username of the Player as a String.
score	Pass the current score of the Player as an int.
frame	Pass the frame of the Player.

6.11.2.2 Player() [2/4]

```
scrabbleGame.gameModel.Player.Player (
            String username,
            int score )
```

This is a partial constructor that initialises the username, score of the Player and the frame to a new Frame object.

Parameters

username	Pass the username of the Player as a String.
score	Pass the current score of the Player as an int.

6.11.2.3 Player() [3/4]

```
scrabbleGame.gameModel.Player.Player (
            String username,
            Frame frame )
```

This is a partial constructor that initialises the username and frame of the Player and the score to 0.

Parameters

username	Pass the username of the Player as a String.
frame	Pass the frame of the Player.

6.11.2.4 Player() [4/4]

```
scrabbleGame.gameModel.Player.Player (
            String username )
```

This is a partial constructor that initialises the username of the Player, the score to 0 and the frame to a new Frame object.

Parameters

username	Pass the username of the Player as a String.

6.11.3 Member Function Documentation

6.11.3.1 dumpPlayerInfo()

```
String scrabbleGame.gameModel.Player.dumpPlayerInfo ( )
```

Method for dumping all of the information about the Player object as a String.

Returns

Returns a string containing the username, score and frame of the Player.

6.11.3.2 getFrame()

```
Frame scrabbleGame.gameModel.Player.getFrame ( )
```

Getter for private frame field.

Returns

Frame Returns the Frame object from the Player instance.

6.11.3.3 getScore()

```
int scrabbleGame.gameModel.Player.getScore ( )
```

Getter for private score field.

Returns

int Returns the score of the Player in int format.

6.11.3.4 getUsername()

```
String scrabbleGame.gameModel.Player.getUsername ( )
```

Getter for private username field.

Returns

String Returns the username of the Player in String format.

6.11.3.5 increaseScore()

```
void scrabbleGame.gameModel.Player.increaseScore (
            int addition )
```

Method to increase the Player's score by a certain amount.

Parameters

addition	Pass the amount you want to add to the Player's current score.

6.11.3.6 resetPlayer()

```
void scrabbleGame.gameModel.Player.resetPlayer ( )
```

Method to reset the entire Player object (username, score, frame).

6.11.3.7 setFrame()

```
void scrabbleGame.gameModel.Player.setFrame (
            Frame frame )
```

Setter for the private frame field.

Parameters

frame	Pass the frame that you want to set.

6.11.3.8 setScore()

```
void scrabbleGame.gameModel.Player.setScore (
            int score )
```

Setter for the private score field with error checking.

Parameters

score	Pass the score (in int format) that you want to set.

6.11.3.9 setUsername()

```
void scrabbleGame.gameModel.Player.setUsername (
            String username )
```

Setter for the private username field with error checking.

Parameters

username	Pass the username (in String format) that you want to set.

6.11.3.10 toString()

```
String scrabbleGame.gameModel.Player.toString ( )
```

This method overrides the default String method of the Object class.

Returns

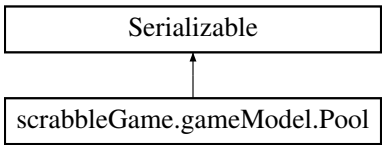
Returns a String containing the username and score in a formatted manner.

The documentation for this class was generated from the following file:

- gameModel/Player.java

6.12 scrabbleGame.gameModel.Pool Class Reference

Inheritance diagram for scrabbleGame.gameModel.Pool:



Public Member Functions

- void addTile (Tile t)
- Pool ()
- int size ()
- boolean isEmpty ()
- void reset ()
- Tile draw ()
- int getValue (char c)
- String toString ()

6.12.1 Detailed Description

Pool Class

This class represents the bag of tiles (called the pool) in Scrabble. The pool contains 100 tiles, each a letter in the chosen alphabet. For our implementation, we are using the 26-letter english alphabet, with two additional blank tiles. The pool can be reset and you can draw tiles from the pool. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Cal Nolan

Version

1.0

Since

07-02-2020

6.12.2 Constructor & Destructor Documentation

6.12.2.1 Pool()

```
scrabbleGame.gameModel.Pool.Pool ( )
```

This is the constructor for the Pool class. The constructor initialises the pool field and calls the resetPool() method.

6.12.3 Member Function Documentation

6.12.3.1 addTile()

```
void scrabbleGame.gameModel.Pool.addTile (
            Tile t )
```

Public method for adding a tile to the pool.

Parameters

t	Takes a tile, t, as input and adds it to the pool.

6.12.3.2 draw()

```
Tile scrabbleGame.gameModel.Pool.draw ( )
```

This method removes a randomly chosen tile from the pool and returns it.

Returns

Tile Returns the randomly chosen tile.

6.12.3.3 getValue()

```
int scrabbleGame.gameModel.Pool.getValue (
            char c )
```

This method allows users to check the value of a tile by passing the character.

Parameters

c	The character for which you want to get the value (worth) of the tile.

Returns

int This returns the value of the Tile associated with this character.

6.12.3.4 isEmpty()

```
boolean scrabbleGame.gameModel.Pool.isEmpty ( )
```

This method is used to test if the pool contains any tiles.

Returns

boolean This returns true if the pool is empty, else it returns false.

6.12.3.5 reset()

```
void scrabbleGame.gameModel.Pool.reset ( )
```

This method is used to reset the pool to its original state, containing all tiles.

6.12.3.6 size()

```
int scrabbleGame.gameModel.Pool.size ( )
```

This method is used to get the current size of the pool (i.e. the remaining tiles).

Returns

int This returns the size of the pool field.

6.12.3.7 toString()

```
String scrabbleGame.gameModel.Pool.toString ( )
```

This method overrides the default String method of the Object class.

Returns

String Returns the String format of the pool ArrayList;

The documentation for this class was generated from the following file:

- gameModel/Pool.java

6.13 scrabbleGame.gameEngine.Scrabble Class Reference

Static Public Member Functions

- static void main (String[ ] args)

6.13.1 Detailed Description

Scrabble Class

This class calls the main method of UI. This is necessary for the JAR file to properly launch the JavaFX application. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Reuben Mulligan

Version

1.0.0

Since

25-03-2020

6.13.2 Member Function Documentation

6.13.2.1 main()

```
static void scrabbleGame.gameEngine.Scrabble.main (
            String[] args )  [static]
```

Main method to launch the JavaFX appplication.

Parameters

args	Pass any arguments to be passed to the JavaFX start() method.

The documentation for this class was generated from the following file:

- gameEngine/Scrabble.java

6.14 scrabbleGame.gameEngine.ScrabbleEngineController Class Reference

Public Member Functions

- void switchPlayer ()
- void switchPlayerDelay ()
- void updateUsername (int player, String username)
- void updateScore ()
- int scoring (Move m)
- int finalScore (Frame f)
- int getCurrentPlayerNum ()
- Frame getCurrentFrame ()
- Board getBoard ()
- Pool getPool ()
- Player getPlayer (int playerNum)
- Player getPlayer1 ()
- Player getPlayer2 ()
- void incrementCurrentPlayerNum ()
- void incrementTurnCounter ()
- int getTurnCounter ()
- Lexicon getDictionary ()
- void setDictionary (Lexicon dictionary)

Public Attributes

- FrameController currentFrameController
- ConsoleController consoleController
- BoardController boardController
- TextArea switchPlayerPrompt

Static Public Attributes

- static final boolean USING_THEMED_BOARD = false

6.14.1 Detailed Description

ScrabbleEngineController Class

This class is the Main Scrabble Engine Controller. This class contains all of the game controls and runs the game. We utilised a multi controller backend to properly integrate our existing java classes into JavaFX. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Cal Nolan, Reuben Mulligan, Evan Spendlove

Version

1.0.0

Since

18-03-2020

6.14.2 Member Function Documentation

6.14.2.1 finalScore()

```
int scrabbleGame.gameEngine.ScrabbleEngineController.finalScore (
            Frame f )
```

Method to calculate value of tiles in a frame at the end of a game.

Parameters

f	Pass the frame for which the final deduction is to be calculated.

Returns

Total score to be deducted.

6.14.2.2 getBoard()

```
Board scrabbleGame.gameEngine.ScrabbleEngineController.getBoard ( )
```

Getter for board object

Returns

board

6.14.2.3 getCurrentFrame()

```
Frame scrabbleGame.gameEngine.ScrabbleEngineController.getCurrentFrame ( )
```

Getter for current Frame

Returns

currentFrame

6.14.2.4 getCurrentPlayerNum()

```
int scrabbleGame.gameEngine.ScrabbleEngineController.getCurrentPlayerNum ( )
```

Getter for current player number.

Returns

currentPlayerNum

6.14.2.5 getDictionary()

```
Lexicon scrabbleGame.gameEngine.ScrabbleEngineController.getDictionary ( )
```

Getter for Dictionary

Returns

Lexicon Returns the dictionary.

6.14.2.6 getPlayer()

```
Player scrabbleGame.gameEngine.ScrabbleEngineController.getPlayer (
            int playerNum )
```

Get player by their number (1 or 2).

Parameters

playerNum	

Returns

player

6.14.2.7 getPlayer1()

```
Player scrabbleGame.gameEngine.ScrabbleEngineController.getPlayer1 ( )
```

Getter for Player 1

Returns

player1

6.14.2.8 getPlayer2()

```
Player scrabbleGame.gameEngine.ScrabbleEngineController.getPlayer2 ( )
```

Getter for Player 1

Returns

player2

6.14.2.9 getPool()

```
Pool scrabbleGame.gameEngine.ScrabbleEngineController.getPool ( )
```

Getter for Pool object.

Returns

pool

6.14.2.10 getTurnCounter()

```
int scrabbleGame.gameEngine.ScrabbleEngineController.getTurnCounter ( )
```

Getter for turn counter.

Returns

turnCounter

6.14.2.11 incrementCurrentPlayerNum()

```
void scrabbleGame.gameEngine.ScrabbleEngineController.incrementCurrentPlayerNum ( )
```

Switches the player number

Author

Evan Spendlove

6.14.2.12 incrementTurnCounter()

```
void scrabbleGame.gameEngine.ScrabbleEngineController.incrementTurnCounter ( )
```

Increases the turn counter

6.14.2.13 scoring()

```
int scrabbleGame.gameEngine.ScrabbleEngineController.scoring (
            Move m )
```

Method to call other scoring methods.

Parameters

m	Pass the move to be scored.

Returns

total score of played move.

6.14.2.14 setDictionary()

```
void scrabbleGame.gameEngine.ScrabbleEngineController.setDictionary (
            Lexicon dictionary )
```

Setter for the dictionary.

Parameters

dictionary	Pass the dictionary to be set.

6.14.2.15 switchPlayer()

```
void scrabbleGame.gameEngine.ScrabbleEngineController.switchPlayer ( )
```

This method switches the players, it is a nested method of switchPlayerDelay It switches the instance variables around, refills the player frame if its not the start of the game. It then updates the frame on the board and prints a message

Author

Evan Spendlove

6.14.2.16 switchPlayerDelay()

```
void scrabbleGame.gameEngine.ScrabbleEngineController.switchPlayerDelay ( )
```

This method implements a delay between player switches as to avoid cheating and stop players from seeing their opponents racks. @uses Timer Uses timer to add a delay between turns. Adds a countdown on screen and switches the players after a set time.

Author

Evan Spendlove

6.14.2.17 updateScore()

```
void scrabbleGame.gameEngine.ScrabbleEngineController.updateScore ( )
```

Method to update the graphical representation of the score displayed on the game window.

Author

Evan Spendlove

6.14.2.18 updateUsername()

```
void scrabbleGame.gameEngine.ScrabbleEngineController.updateUsername (
            int player,
            String username )
```

Method to update the username of a Player both in the Player object and on the board.

Parameters

player	Pass the player number to be updated.
username	Pass the desired username to be set.

Author

Evan Spendlove

6.14.3 Member Data Documentation

6.14.3.1 boardController

```
BoardController scrabbleGame.gameEngine.ScrabbleEngineController.boardController
```

Holds the Board controller

6.14.3.2 consoleController

```
ConsoleController scrabbleGame.gameEngine.ScrabbleEngineController.consoleController
```

Holds the console controller

6.14.3.3 currentFrameController

```
FrameController scrabbleGame.gameEngine.ScrabbleEngineController.currentFrameController
```

Holds the Frame controller

6.14.3.4 switchPlayerPrompt

```
TextArea scrabbleGame.gameEngine.ScrabbleEngineController.switchPlayerPrompt
```

Holds the switchPlayerPrompt Text area

6.14.3.5 USING_THEMED_BOARD

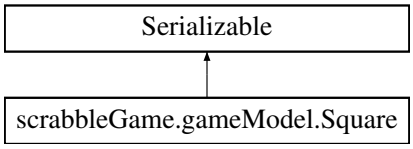
```
final boolean scrabbleGame.gameEngine.ScrabbleEngineController.USING_THEMED_BOARD = false
[static]
```

The documentation for this class was generated from the following file:

- gameEngine/ScrabbleEngineController.java

6.15 scrabbleGame.gameModel.Square Class Reference

Inheritance diagram for scrabbleGame.gameModel.Square:



Classes

- enum squareType

Public Member Functions

- squareType getType ()
- void setType (squareType t)
- boolean isOccupied ()
- Tile getTile ()
- void setTile (Tile tile) throws IllegalStateException
- void clearTile () throws IllegalStateException
- Square ()
- String toString ()

6.15.1 Detailed Description

Square Class

This class represents a single square on the Scrabble board. A square can have different multipliers, represented using an enum. There are the relevant getters/setters for accessing the squares fields. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

21-02-2020

6.15.2 Constructor & Destructor Documentation

6.15.2.1 Square()

```
scrabbleGame.gameModel.Square.Square ( )
```

Constructor for the Square object. The occupied field is false by default, and it is a regular square (no multiplier, not a star) by default.

6.15.3 Member Function Documentation

6.15.3.1 clearTile()

```
void scrabbleGame.gameModel.Square.clearTile ( ) throws IllegalStateException
```

Clears the tile from the square.

Exceptions

IllegalStateException	Cannot remove a tile from a square without a tile.

6.15.3.2 getTile()

```
Tile scrabbleGame.gameModel.Square.getTile ( )
```

Getter for the tile currently on the square.

Returns

Tile Returns the tile currently on the square, or null if no tile on the square.

6.15.3.3 getType()

```
squareType scrabbleGame.gameModel.Square.getType ( )
```

Getter for the square type

Returns

squareType Returns the enum value for the square.

6.15.3.4 isOccupied()

```
boolean scrabbleGame.gameModel.Square.isOccupied ( )
```

Getter for checking if the square currently has a tile on it.

Returns

boolean Returns true if there is a currently a tile on this square.

6.15.3.5 setTile()

```
void scrabbleGame.gameModel.Square.setTile (
            Tile tile ) throws IllegalStateException
```

Setter for the Tile object.

Parameters

tile	Pass the tile which you wish to place on the square.

Exceptions

IllegalStateException	Throws an exception if there is already a tile on the square.

6.15.3.6 setType()

```
void scrabbleGame.gameModel.Square.setType (
            squareType t )
```

Setter for the square type

Parameters

t	Pass the type that you want to set for the square.

6.15.3.7 toString()

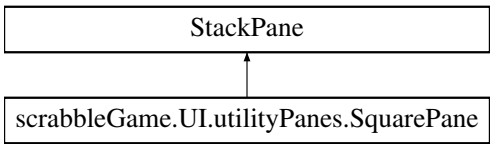
```
String scrabbleGame.gameModel.Square.toString ( )
```

The documentation for this class was generated from the following file:

- gameModel/Square.java

6.16 scrabbleGame.UI.utilityPanes.SquarePane Class Reference

Inheritance diagram for scrabbleGame.UI.utilityPanes.SquarePane:



Public Member Functions

- SquarePane ()
- SquarePane (Square input)
- Square getSquare ()
- TilePane getTilePane ()
- void updateSquare (Square newSquare)
- void updateSquare (Square newSquare, String message)
- void addTile (TilePane t)
- TilePane removeTile ()
- String toString ()

6.16.1 Detailed Description

SquarePane Class

This JavaFX class represented the squares on the board.
As such, it contains the square and can have a tile played on it.
Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

26-03-2020

6.16.2 Constructor & Destructor Documentation

6.16.2.1 SquarePane() [1/2]

```
scrabbleGame.UI.utilityPanes.SquarePane.SquarePane ( )
```

Empty Constructor

6.16.2.2 SquarePane() [2/2]

```
scrabbleGame.UI.utilityPanes.SquarePane.SquarePane (
            Square input )
```

Partial Constructor

Parameters

input	Pass the Square to be set on this pane.

6.16.3 Member Function Documentation

6.16.3.1 addTile()

```
void scrabbleGame.UI.utilityPanes.SquarePane.addTile (
            TilePane t )
```

Method for adding a tile (tilePane) onto a square.

Parameters

t	Pass the tilePane to be added to the square.

6.16.3.2 getSquare()

```
Square scrabbleGame.UI.utilityPanes.SquarePane.getSquare ( )
```

Getter for Square

Returns

Square Returns the square.

6.16.3.3 getTilePane()

```
TilePane scrabbleGame.UI.utilityPanes.SquarePane.getTilePane ( )
```

Getter for TilePane

Returns

TilePane Returns the tilePane object

6.16.3.4 removeTile()

```
TilePane scrabbleGame.UI.utilityPanes.SquarePane.removeTile ( )
```

Method for removing a tile from a square.

Returns

TilePane Returns the removed TilePane from the square.

6.16.3.5 toString()

```
String scrabbleGame.UI.utilityPanes.SquarePane.toString ( )
```

Method for getting a string representation of the object.

Returns

String Returns the string representation of the object.

6.16.3.6 updateSquare() [1/2]

```
void scrabbleGame.UI.utilityPanes.SquarePane.updateSquare (
            Square newSquare )
```

Setter for the square which updates its graphical representation.

Parameters

newSquare	Pass the square to be set.

6.16.3.7 updateSquare() [2/2]

```
void scrabbleGame.UI.utilityPanes.SquarePane.updateSquare (
            Square newSquare,
            String message )
```

Setter for the square which updates its graphical representation.

Parameters

newSquare	Pass the square to be set.

The documentation for this class was generated from the following file:

- UI/utilityPanes/SquarePane.java

6.17 scrabbleGame.gameModel.Square.squareType Enum Reference

Public Attributes

- STAR
- REGULAR

- DB_LETTER
- DB_WORD
- TR_LETTER
- TR_WORD

6.17.1 Detailed Description

Enum for storing the type of square. There is only one star at the centre of the board. The other types are multipliers for letters or words.

6.17.2 Member Data Documentation

6.17.2.1 DB_LETTER

`scrabbleGame.gameModel.Square.squareType.DB_LETTER`

6.17.2.2 DB_WORD

`scrabbleGame.gameModel.Square.squareType.DB_WORD`

6.17.2.3 REGULAR

`scrabbleGame.gameModel.Square.squareType.REGULAR`

6.17.2.4 STAR

`scrabbleGame.gameModel.Square.squareType.STAR`

6.17.2.5 TR_LETTER

`scrabbleGame.gameModel.Square.squareType.TR_LETTER`

6.17.2.6 TR_WORD

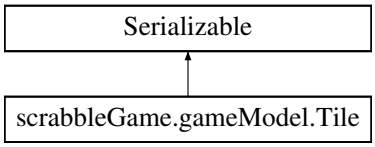
`scrabbleGame.gameModel.Square.squareType.TR_WORD`

The documentation for this enum was generated from the following file:

- gameModel/Square.java

6.18 scrabbleGame.gameModel.Tile Enum Reference

Inheritance diagram for scrabbleGame.gameModel.Tile:



Public Member Functions

- Tile (char c, int value)
- char character ()
- int value ()
- String toString ()

Static Public Member Functions

- static Tile getInstance (char c)
- static int getValue (char c)
- static int getValue (String letter)

Public Attributes

- BLANK =('#', 0)
- A =('A', 1)
- B =('B', 3)
- C =('C', 3)
- D =('D', 2)
- E =('E',1)
- F =('F', 4)
- G =('G', 2)
- H =('H',4)
- I =('I', 1)
- J =('J', 8)
- K =('K', 5)
- L =('L', 1)
- M =('M', 3)
- N =('N', 1)

- O =('O', 1)
- P =('P', 3)
- Q =('Q', 10)
- R =('R', 1)
- S =('S', 1)
- T =('T', 1)
- U =('U', 1)
- V =('V', 4)
- W =('W', 4)
- X =('X', 8)
- Y =('Y', 4)
- Z =('Z', 10)

6.18.1 Detailed Description

Tile Class

This represents a tile in Scrabble, which has an associated character and value.

Team: JunkBot

- Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

07-02-2020

6.18.2 Constructor & Destructor Documentation

6.18.2.1 Tile()

```
scrabbleGame.gameModel.Tile.Tile (
            char c,
            int value )
```

Default constructor for an enum class.

Parameters

c	takes a character as input for the constructor
value	takes a value as input for the constructor

6.18.3 Member Function Documentation

6.18.3.1 character()

```
char scrabbleGame.gameModel.Tile.character ( )
```

This accessor allows access to the character field of the current Tile instance.

Returns

char this returns the character field of this current Tile instance

6.18.3.2 getInstance()

```
static Tile scrabbleGame.gameModel.Tile.getInstance (
            char c )  [static]
```

This method returns and instance of the Tile class for the character passed

Parameters

c	the letter for which you want an instance of Tile

Returns

Tile This returns an instance of the Tile class for the character passed.

6.18.3.3 getValue() [1/2]

```
static int scrabbleGame.gameModel.Tile.getValue (
            char c )  [static]
```

This method returns the value associated with the character passed as per the enum.

Parameters

c	pass a character for which you want the associated value.

Returns

int Returns the value associated with the character passed.

6.18.3.4 getValue() [2/2]

```
static int scrabbleGame.gameModel.Tile.getValue (
            String letter )  [static]
```

This method returns the value associated with the String passed as per the enum.

Parameters

letter	pass a String for which you want the associated value.

Returns

int Returns the value associated with the String passed.

6.18.3.5 toString()

```
String scrabbleGame.gameModel.Tile.toString ( )
```

This method overrides the toString() method of object for a custom String return value.

Returns

String Returns only the character of the current Tile instance

6.18.3.6 value()

```
int scrabbleGame.gameModel.Tile.value ( )
```

This accessor allows access to the value field of the current Tile instance.

Returns

int this returns the value field of this current Tile instance

6.18.4 Member Data Documentation

6.18.4.1 A

```
scrabbleGame.gameModel.Tile.A =('A', 1)
```

6.18.4.2 B

```
scrabbleGame.gameModel.Tile.B =('B', 3)
```

6.18.4.3 BLANK

```
scrabbleGame.gameModel.Tile.BLANK =('#', 0)
```

6.18.4.4 C

```
scrabbleGame.gameModel.Tile.C =('C', 3)
```

6.18.4.5 D

```
scrabbleGame.gameModel.Tile.D =('D', 2)
```

6.18.4.6 E

```
scrabbleGame.gameModel.Tile.E =('E',1)
```

6.18.4.7 F

```
scrabbleGame.gameModel.Tile.F =('F', 4)
```

6.18.4.8 G

```
scrabbleGame.gameModel.Tile.G =('G', 2)
```

6.18.4.9 H

```
scrabbleGame.gameModel.Tile.H =('H',4)
```

6.18.4.10 I

```
scrabbleGame.gameModel.Tile.I =('I', 1)
```

6.18.4.11 J

```
scrabbleGame.gameModel.Tile.J =('J', 8)
```

6.18.4.12 K

```
scrabbleGame.gameModel.Tile.K =('K', 5)
```

6.18.4.13 L

```
scrabbleGame.gameModel.Tile.L =('L', 1)
```

6.18.4.14 M

```
scrabbleGame.gameModel.Tile.M =('M', 3)
```

6.18.4.15 N

```
scrabbleGame.gameModel.Tile.N =('N', 1)
```

6.18.4.16 O

```
scrabbleGame.gameModel.Tile.O =('O', 1)
```

6.18.4.17 P

```
scrabbleGame.gameModel.Tile.P =('P', 3)
```

6.18.4.18 Q

```
scrabbleGame.gameModel.Tile.Q =('Q', 10)
```

6.18.4.19 R

```
scrabbleGame.gameModel.Tile.R =('R', 1)
```

6.18.4.20 S

```
scrabbleGame.gameModel.Tile.S =('S', 1)
```

6.18.4.21 T

```
scrabbleGame.gameModel.Tile.T =('T', 1)
```

6.18.4.22 U

```
scrabbleGame.gameModel.Tile.U =('U', 1)
```

6.18.4.23 V

```
scrabbleGame.gameModel.Tile.V =('V', 4)
```

6.18.4.24 W

```
scrabbleGame.gameModel.Tile.W =('W', 4)
```

6.18.4.25 X

```
scrabbleGame.gameModel.Tile.X =('X', 8)
```

6.18.4.26 Y

```
scrabbleGame.gameModel.Tile.Y =('Y', 4)
```

6.18.4.27 Z

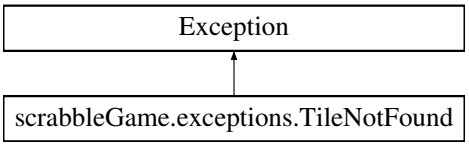
```
scrabbleGame.gameModel.Tile.Z =('Z', 10)
```

The documentation for this enum was generated from the following file:

- gameModel/Tile.java

6.19 scrabbleGame.exceptions.TileNotFound Class Reference

Inheritance diagram for scrabbleGame.exceptions.TileNotFound:



Public Member Functions

- TileNotFound (String message)

6.19.1 Detailed Description

TileNotFound Exception Class

This exception is used when a method tries to access a tile that is not found where expected. E.g. accessing a tile from the board using invalid coordinates. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

20-03-2020

6.19.2 Constructor & Destructor Documentation

6.19.2.1 TileNotFound()

```
scrabbleGame.exceptions.TileNotFound.TileNotFound (
            String message )
```

Constructor for TileNotFound

Parameters

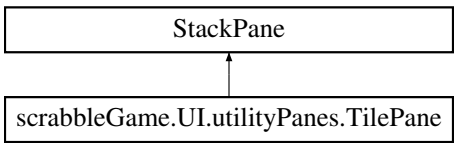
message	Pass the message for the exception to throw

The documentation for this class was generated from the following file:

- exceptions/TileNotFound.java

6.20 scrabbleGame.UI.utilityPanes.TilePane Class Reference

Inheritance diagram for scrabbleGame.UI.utilityPanes.TilePane:



Public Member Functions

- TilePane ()
- TilePane (Tile input)
- Tile getTile ()
- void setTile (Tile tile)
- void updateTile (Tile newTile)
- String toString ()

6.20.1 Detailed Description

TilePane Class

This class represents the Tile object in JavaFX form. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

26-03-2020

6.20.2 Constructor & Destructor Documentation

6.20.2.1 TilePane() [1/2]

```
scrabbleGame.UI.utilityPanes.TilePane.TilePane ( )
```

Empty Constructor

6.20.2.2 TilePane() [2/2]

```
scrabbleGame.UI.utilityPanes.TilePane.TilePane (
            Tile input )
```

Partial Constructor

Parameters

input	Pass the tile to be set.

6.20.3 Member Function Documentation

6.20.3.1 getTile()

```
Tile scrabbleGame.UI.utilityPanes.TilePane.getTile ( )
```

Getter for Tile object

Returns

Tile Returns the tile object

6.20.3.2 setTile()

```
void scrabbleGame.UI.utilityPanes.TilePane.setTile (
            Tile tile )
```

Setter for Tile object

Parameters

tile	Pass the tile to be set.

6.20.3.3 toString()

```
String scrabbleGame.UI.utilityPanes.TilePane.toString ( )
```

Method for getting a string representation of the TilePane.

Returns

String Returns the string representation of the TilePane.

6.20.3.4 updateTile()

```
void scrabbleGame.UI.utilityPanes.TilePane.updateTile (
            Tile newTile )
```

Method for updating the tile object and its graphical representation.

Parameters

newTile	

The documentation for this class was generated from the following file:

- UI/utilityPanes/TilePane.java

6.21 scrabbleGame.UI.components.Timer Class Reference

Public Member Functions

- Timer ()

Static Public Member Functions

- static void run (ScrabbleEngineController engine, int time, TextArea displayArea, String message)
- static void endGame (ScrabbleEngineController engine, int time, TextArea displayArea, String message)

6.21.1 Detailed Description

Timer Class

This class is a timer which is used for delaying the screen between player changes. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

26-03-2020

6.21.2 Constructor & Destructor Documentation

6.21.2.1 Timer()

```
scrabbleGame.UI.components.Timer.Timer ( )
```

6.21.3 Member Function Documentation

6.21.3.1 endGame()

```
static void scrabbleGame.UI.components.Timer.endGame (
            ScrabbleEngineController engine,
            int time,
            TextArea displayArea,
            String message )  [static]
```

Method to run the timer for the chosen period of time and update the textarea. Used for ending the game - so calls System.exit(0) at end.

Parameters

engine	Pass the current instance of the engine controller.
time	Pass the number of seconds to wait for.
displayArea	Pass the TextArea to be updated with the wait message.
message	Pass the message to be displayed.

6.21.3.2 run()

```
static void scrabbleGame.UI.components.Timer.run (
            ScrabbleEngineController engine,
            int time,
            TextArea displayArea,
            String message )  [static]
```

Method to run the timer for the chosen period of time and update the textarea.

Parameters

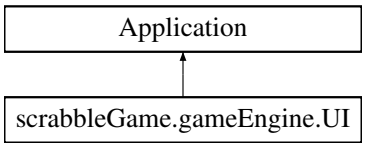
engine	Pass the current instance of the engine controller.
time	Pass the number of seconds to wait for.
displayArea	Pass the TextArea to be updated with the wait message.
message	Pass the message to be displayed.

The documentation for this class was generated from the following file:

- UI/components/Timer.java

6.22 scrabbleGame.gameEngine.UI Class Reference

Inheritance diagram for scrabbleGame.gameEngine.UI:



Public Member Functions

- void start (Stage primaryStage) throws Exception

Static Public Member Functions

- static void main (String[ ] args)

6.22.1 Detailed Description

UI Class

This class extends Application to launch the JavaFX application. Team: JunkBot Members: Reuben Mulligan (18733589), Evan Spendlove (18492656), Cal Nolan(18355103)

Author

Evan Spendlove

Version

1.0.0

Since

25-03-2020

6.22.2 Member Function Documentation

6.22.2.1 main()

```
static void scrabbleGame.gameEngine.UI.main (
            String[] args )  [static]
```

Main method to launch the JavaFX application.

Parameters

args	Pass any arguments to be handled inside the start of the JavaFX application.

6.22.2.2 start()

```
void scrabbleGame.gameEngine.UI.start (
            Stage primaryStage ) throws Exception
```

The start method for the JavaFX application - automatically called by launch().

Parameters

primaryStage	Pass the stage to be set (automatically done by launch();

Exceptions

Exception	Throws an IOException if the FXML file cannot be loaded.

The documentation for this class was generated from the following file:

- gameEngine/UI.java

Chapter 7

File Documentation

7.1 exceptions/TileNotFound.java File Reference

Classes

- class scrabbleGame.exceptions.TileNotFound

Packages

- package scrabbleGame.exceptions

7.2 gameEngine/Scrabble.java File Reference

Classes

- class scrabbleGame.gameEngine.Scrabble

Packages

- package scrabbleGame.gameEngine

7.3 gameEngine/ScrabbleEngineController.java File Reference

Classes

- class scrabbleGame.gameEngine.ScrabbleEngineController

Packages

- package scrabbleGame.gameEngine

7.4 gameEngine/UI.java File Reference

Classes

- class scrabbleGame.gameEngine.UI

Packages

- package scrabbleGame.gameEngine

7.5 gameModel/Board.java File Reference

Classes

- class scrabbleGame.gameModel.Board

Packages

- package scrabbleGame.gameModel

7.6 gameModel/Frame.java File Reference

Classes

- class scrabbleGame.gameModel.Frame

Packages

- package scrabbleGame.gameModel

7.7 gameModel/Lexicon.java File Reference

Classes

- class scrabbleGame.gameModel.Lexicon

Packages

- package scrabbleGame.gameModel

7.8 gameModel/MainTest.java File Reference

Classes

- class scrabbleGame.gameModel.MainTest

Packages

- package scrabbleGame.gameModel

7.9 gameModel/Move.java File Reference

Classes

- class scrabbleGame.gameModel.Move

Packages

- package scrabbleGame.gameModel

7.10 gameModel/Placement.java File Reference

Classes

- class scrabbleGame.gameModel.Placement

Packages

- package scrabbleGame.gameModel

7.11 gameModel/Player.java File Reference

Classes

- class scrabbleGame.gameModel.Player

Packages

- package scrabbleGame.gameModel

7.12 gameModel/Pool.java File Reference

Classes

- class scrabbleGame.gameModel.Pool

Packages

- package scrabbleGame.gameModel

7.13 gameModel/Square.java File Reference

Classes

- class scrabbleGame.gameModel.Square
- enum scrabbleGame.gameModel.Square.squareType

Packages

- package scrabbleGame.gameModel

7.14 gameModel/Tile.java File Reference

Classes

- enum scrabbleGame.gameModel.Tile

Packages

- package scrabbleGame.gameModel

7.15 UI/components/BoardController.java File Reference

Classes

- class scrabbleGame.UI.components.BoardController

Packages

- package scrabbleGame.UI.components

7.16 UI/components/ConsoleController.java File Reference

Classes

- class scrabbleGame.UI.components.ConsoleController

Packages

- package scrabbleGame.UI.components

7.17 UI/components/FrameController.java File Reference

Classes

- class scrabbleGame.UI.components.FrameController

Packages

- package scrabbleGame.UI.components

7.18 UI/components/Timer.java File Reference

Classes

- class scrabbleGame.UI.components.Timer

Packages

- package scrabbleGame.UI.components

7.19 UI/utilityPanes/ImageViewPane.java File Reference

Classes

- class scrabbleGame.UI.utilityPanes.ImageViewPane

Packages

- package scrabbleGame.UI.utilityPanes

7.20 UI/utilityPanes/SquarePane.java File Reference

Classes

- class scrabbleGame.UI.utilityPanes.SquarePane

Packages

- package scrabbleGame.UI.utilityPanes

7.21 UI/utilityPanes/TilePane.java File Reference

Classes

- class scrabbleGame.UI.utilityPanes.TilePane

Packages

- package scrabbleGame.UI.utilityPanes

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