The Good The Bad and The Ugly Scrabble Board Game

4.0

Generated by Doxygen 1.8.17

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 3

Class Documentation

3.1 scrabble.Board Class Reference

Public Member Functions

- Board ()
- Square[ ][ ] getBoardSquares ()
- void resetBoard ()
- Square getSquare (int i, int j)
- String toString ()
- void placeTiles (MoveInfo moveInfo)
- void setWordSquaresNormal (Word word)
- void removeMove (MoveInfo moveInfo)

Static Public Member Functions

- static Boolean checkValidPosition (int[ ] position)

Static Public Attributes

- static final int BOARD_SIZE = 15
- static final int BINGO = 50

Protected Member Functions

- boolean checkValidMove (MoveInfo moveInfo)
- void placeTile (Tile tile, int position_i, int position_j)
- boolean checkPlayerHasTiles (Player player, char[ ] word)
- int calculateScore (MoveInfo moveInfo)

3.1.1 Detailed Description

The Board Class represents the Board for the Scrabble Game as an object

3.1.2 Constructor & Destructor Documentation

3.1.2.1 Board()

```
scrabble.Board.Board ( )
```

Board Constructor

3.1.3 Member Function Documentation

3.1.3.1 calculateScore()

```
int scrabble.Board.calculateScore (
            MoveInfo moveInfo )  [protected]
```

Method to calculate the score of a move

Parameters

moveInfo	Move to calculate the score

Returns

The score of the move

3.1.3.2 checkPlayerHasTiles()

```
boolean scrabble.Board.checkPlayerHasTiles (
            Player player,
            char[] word )  [protected]
```

Method to validate if the Player placing a list of Tiles has each Tile in his Frame

Parameters

player	Player to check if they have the necessary Tiles
word	List of Tiles to check

Returns

True if the player has the tiles

3.1.3.3 checkValidMove()

```
boolean scrabble.Board.checkValidMove (
            MoveInfo moveInfo )  [protected]
```

Method to check that a move from the player is valid

Parameters

moveInfo	The move to validate

Returns

true if valid move

Exceptions

InvalidMoveInfoException	If the Move is Invalid

3.1.3.4 checkValidPosition()

```
static Boolean scrabble.Board.checkValidPosition (
            int[] position )  [static]
```

Method to validate that a position passed in is on the board

Parameters

position	Position to check if its on the board

Returns

True if the position is valid

3.1.3.5 getBoardSquares()

```
Square [][] scrabble.Board.getBoardSquares ( )
```

Method to return the current Board

Returns

the current Board

3.1.3.6 getSquare()

```
Square scrabble.Board.getSquare (
            int i,
            int j )
```

Method that returns a specific board square

Parameters

i	row coordinate
j	column coordinate

Returns

The Square at i and j

Exceptions

InvalidBoardException	Coordinates are not inside the Board

3.1.3.7 placeTile()

```
void scrabble.Board.placeTile (
            Tile tile,
            int position_i,
            int position_j )  [protected]
```

Method to place a Tile on the board

Parameters

tile	Tile to be placed on the Board
position_i	I position on the Board to place the Tile
position_j	J position on the Board to place the Tile

3.1.3.8 placeTiles()

```
void scrabble.Board.placeTiles (
            MoveInfo moveInfo )
```

Method for a Player to place a list of Tiles on the Board

Parameters

moveInfo	The move to place on the Board

3.1.3.9 removeMove()

```
void scrabble.Board.removeMove (
            MoveInfo moveInfo )
```

Method to remove the Tiles place in a move

Parameters

moveInfo	The move to remove

3.1.3.10 resetBoard()

```
void scrabble.Board.resetBoard ( )
```

Method to reset the Board

3.1.3.11 setWordSquaresNormal()

```
void scrabble.Board.setWordSquaresNormal (
            Word word )
```

Method to set all Squares under a word to Normal

Parameters

word	The Word

3.1.3.12 toString()

```
String scrabble.Board.toString ( )
```

toString method that prints the Board

Returns

Returns the board as a string

3.1.4 Member Data Documentation

3.1.4.1 BINGO

```
final int scrabble.Board.BINGO = 50  [static]
```

Bingo Score Bonus

3.1.4.2 BOARD_SIZE

```
final int scrabble.Board.BOARD_SIZE = 15  [static]
```

Constant value for Board size

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

- src/main/java/scrabble/Board.java

3.2 scrabble.BoardTest Class Reference

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

- src/test/java/scrabble/BoardTest.java

3.3 scrabble.UserInput.Direction Enum Reference

Public Attributes

- **VERTICAL**
- **HORIZONTAL**

3.3.1 Detailed Description

direction is an enum type for the types directions a word can be placed on a Board

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

- src/main/java/scrabble/UserInput.java

3.4 scrabble.Frame Class Reference

Public Member Functions

- Frame (Pool pool)
- void fillFrame ()
- ArrayList< Tile > returnFrame ()
- boolean isEmpty ()
- void removeTile (int i)
- void removeTile (char c)
- void removeTile (Tile t)
- void removeTiles (char[ ] word)
- void removeTiles (ArrayList< Tile > tiles)
- void addTile (Tile tile)
- boolean checkTiles (ArrayList< Tile > tiles)
- boolean checkTiles (char[ ] word)
- Tile getTile (char c)
- Tile getTile (int i)
- ArrayList< Tile > getTiles (char[ ] word)
- void swapTiles (char[ ] tiles)
- void setBlanks (char[ ] tileValues)
- void setToBlank ()
- boolean hasBlank ()
- int tileValues ()
- String toString ()

Static Public Attributes

- static final int FRAME_SIZE = 7

3.4.1 Detailed Description

This class represents the Player's Frame in Scrabble

3.4.2 Constructor & Destructor Documentation

3.4.2.1 Frame()

```
scrabble.Frame.Frame (
            Pool pool )
```

Constructor for Frame

Parameters

pool	The reference to the Pool to access Tiles from

3.4.3 Member Function Documentation

3.4.3.1 addTile()

```
void scrabble.Frame.addTile (
            Tile tile )
```

Method to add a single Tile to the frame

Parameters

tile	To be added to the playerFrame

Exceptions

InvalidFrameException	The Frame is full

3.4.3.2 checkTiles() [1/2]

```
boolean scrabble.Frame.checkTiles (
            ArrayList< Tile > tiles )
```

Method which checks if a series of Tiles are currently in the Frame

Parameters

tiles	List of tiles to be checked

Returns

boolean: Result for if the Frame contains all the Tiles

Exceptions

InvalidFrameException	The Frame is empty

3.4.3.3 checkTiles() [2/2]

```
boolean scrabble.Frame.checkTiles (
            char[] word )
```

Method to check if a list of characters are in the Frame

Parameters

word	List of characters to check

Returns

Boolean answer

Exceptions

InvalidFrameException	The Frame is empty

3.4.3.4 fillFrame()

```
void scrabble.Frame.fillFrame ( )
```

Method to fill the Frame up to the maximum number of Tiles

3.4.3.5 getTile() [1/2]

```
Tile scrabble.Frame.getTile (
            char c )
```

Method that retrieves a Tile with a given character from the Frame

Parameters

c	Character of Tile wanted

Returns

Tile with given character

Exceptions

InvalidFrameException	The Tile is not in the Frame

3.4.3.6 getTile() [2/2]

```
Tile scrabble.Frame.getTile (
            int i )
```

Accessor method for Tile from Frame

Parameters

i	index of the Tile in the Frame

Returns

The Tile at index i in the Frame

Exceptions

InvalidFrameException	The

3.4.3.7 getTiles()

```
ArrayList<Tile> scrabble.Frame.getTiles (
            char[] word )
```

Method to retrieve a list of Tile with given characters from Frame

Parameters

word	list of wanted character Tiles

Returns

List of Tiles

Exceptions

InvalidFrameException	The Frame does not contain the Tiles

3.4.3.8 hasBlank()

```
boolean scrabble.Frame.hasBlank ( )
```

Method to check if the Frame has any blank tiles

Returns

Boolean result to if the Frame has any blank tiles

3.4.3.9 isEmpty()

```
boolean scrabble.Frame.isEmpty ( )
```

Method to check if the playerFrame has Tiles in it

Returns

boolean: Answer for if the playerFrame is empty

3.4.3.10 removeTile() [1/3]

```
void scrabble.Frame.removeTile (
            char c )
```

Method to remove a single Tile from the Frame

Parameters

c	Character of the Tile to be removed

Exceptions

InvalidTileException	If Character is not in the Frame

3.4.3.11 removeTile() [2/3]

```
void scrabble.Frame.removeTile (
            int i )
```

Method to remove a single Tile from the Frame

Parameters

i	Tile index to be removed

Exceptions

InvalidTileException	If index is not in the Frame

3.4.3.12 removeTile() [3/3]

```
void scrabble.Frame.removeTile (
            Tile t )
```

Method to remove a single Tile from the Frame

Parameters

t	Tile to be removed

3.4.3.13 removeTiles() [1/2]

```
void scrabble.Frame.removeTiles (
            ArrayList< Tile > tiles )
```

Method to remove a list of Tiles from the Frame

Parameters

tiles	List of Tiles to be removed

Exceptions

InvalidFrameException	If the Tiles to be removed are in the Frame

3.4.3.14 removeTiles() [2/2]

```
void scrabble.Frame.removeTiles (
            char[] word )
```

Method to remove a multiple Tile from the Frame

Parameters

word	Array of Tile Characters to be removed

Exceptions

InvalidTileException	If Tile is not in the Frame

3.4.3.15 returnFrame()

```
ArrayList<Tile> scrabble.Frame.returnFrame ( )
```

Accessor method for playerFrame

Returns

playerFrame: The ArrayList of Tiles in playerFrame

3.4.3.16 setBlanks()

```
void scrabble.Frame.setBlanks (
            char[] tileValues )
```

Method to set the Blank Tiles in Frame

Parameters

tileValues	The chars to change the Blank Tiles to

Exceptions

InvalidFrameException	If too many chars are passed

3.4.3.17 setToBlank()

```
void scrabble.Frame.setToBlank ( )
```

Method to set all Blank Tiles to Null

3.4.3.18 swapTiles()

```
void scrabble.Frame.swapTiles (
            char[] tiles )
```

Method used to swap a number of Tiles from the Frame for new ones in the Pool

Parameters

tiles	List of Tiles to be removed

3.4.3.19 tileValues()

```
int scrabble.Frame.tileValues ( )
```

Method to find the total value of the Tiles in a Frame

Returns

The total value of the Tiles

3.4.3.20 toString()

```
String scrabble.Frame.toString ( )
```

Method overriding the toString method

Returns

String: Formatted string of the Tiles in Frame

3.4.4 Member Data Documentation

3.4.4.1 FRAME_SIZE

```
final int scrabble.Frame.FRAME_SIZE = 7  [static]
```

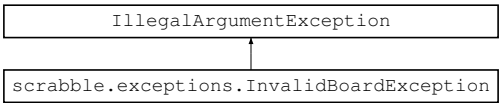
Max amount of Tiles in the Frame

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

- src/main/java/scrabble/Frame.java

3.5 scrabble.exceptions.InvalidBoardException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidBoardException:



Public Member Functions

- **InvalidBoardException** (String s)

3.5.1 Detailed Description

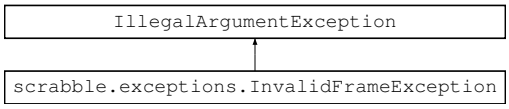
Custom Exception for Board Class

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

- src/main/java/scrabble/exceptions/InvalidBoardException.java

3.6 scrabble.exceptions.InvalidFrameException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidFrameException:



Public Member Functions

- **InvalidFrameException** (String s)

3.6.1 Detailed Description

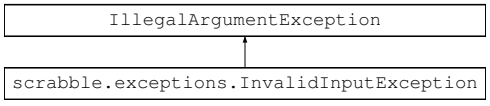
Custom Exception for Frame Class

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

- src/main/java/scrabble/exceptions/InvalidFrameException.java

3.7 scrabble.exceptions.InvalidInputException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidInputException:



Public Member Functions

- **InvalidInputException** (String s)

3.7.1 Detailed Description

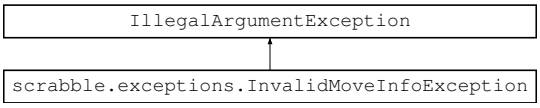
Custom exception for UserInput Class

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

- src/main/java/scrabble/exceptions/InvalidInputException.java

3.8 scrabble.exceptions.InvalidMoveInfoException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidMoveInfoException:



Public Member Functions

- **InvalidMoveInfoException** (String s)

3.8.1 Detailed Description

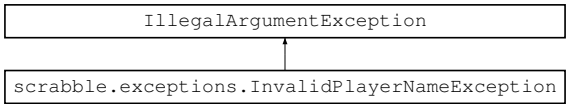
Custom Exception for MoveInfo Class

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

- src/main/java/scrabble/exceptions/InvalidMoveInfoException.java

3.9 scrabble.exceptions.InvalidPlayerNameException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidPlayerNameException:



Public Member Functions

- **InvalidPlayerNameException** (String s)

3.9.1 Detailed Description

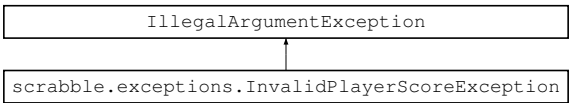
Custom Exception for Name in Player Class

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

- src/main/java/scrabble/exceptions/InvalidPlayerNameException.java

3.10 scrabble.exceptions.InvalidPlayerScoreException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidPlayerScoreException:



Public Member Functions

- **InvalidPlayerScoreException** (String s)

3.10.1 Detailed Description

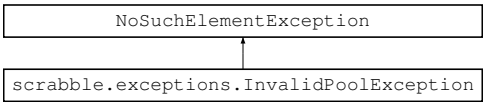
Custom Exception for Score in Player Class

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

- src/main/java/scrabble/exceptions/InvalidPlayerScoreException.java

3.11 scrabble.exceptions.InvalidPoolException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidPoolException:



Public Member Functions

- **InvalidPoolException** (String s)

3.11.1 Detailed Description

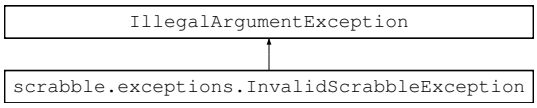
Custom Exception for Pool Class

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

- src/main/java/scrabble/exceptions/InvalidPoolException.java

3.12 scrabble.exceptions.InvalidScrabbleException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidScrabbleException:



Public Member Functions

- **InvalidScrabbleException** (String s)

3.12.1 Detailed Description

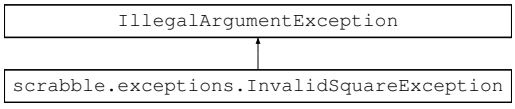
Custom Exception for Scrabble Class

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

- src/main/java/scrabble/exceptions/InvalidScrabbleException.java

3.13 scrabble.exceptions.InvalidSquareException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidSquareException:



Public Member Functions

- **InvalidSquareException** (String s)

3.13.1 Detailed Description

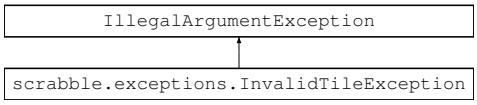
Custom Exception for Square Class

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

- src/main/java/scrabble/exceptions/InvalidSquareException.java

3.14 scrabble.exceptions.InvalidTileException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidTileException:



Public Member Functions

- **InvalidTileException** (String s)

3.14.1 Detailed Description

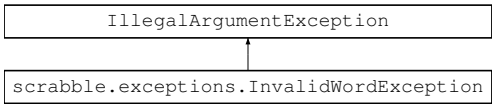
Custom Exception for Tile Class

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

- src/main/java/scrabble/exceptions/InvalidTileException.java

3.15 scrabble.exceptions.InvalidWordException Class Reference

Inheritance diagram for scrabble.exceptions.InvalidWordException:



Public Member Functions

- **InvalidWordException** (String s)

3.15.1 Detailed Description

Custom Exception for Word Class

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

- src/main/java/scrabble/exceptions/InvalidWordException.java

3.16 scrabble.Main Class Reference

Static Public Member Functions

- static void **main** (String[ ] args)

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

- src/main/java/scrabble/Main.java

3.17 scrabble.MoveInfo Class Reference

Public Member Functions

- ArrayList< Word > getAuxiliaryWords ()
- char[ ] getRequiredTiles ()
- int[ ][ ] getRequiredTilesPositions ()
- int getMoveScore ()
- Word getPrimaryWord ()
- Player getPlayer ()
- MoveInfo (Player p, int[ ] coOrdinates, UserInput.Direction d, char[ ] w)
- void addAuxiliaryWord (Word auxWord)
- void setRequiredTiles (char[ ] requiredTiles, int[ ][ ] requiredTilesPositions)

Protected Member Functions

- void setScore (int score)

3.17.1 Detailed Description

Object to store data on a move

3.17.2 Constructor & Destructor Documentation

3.17.2.1 MoveInfo()

```
scrabble.MoveInfo.MoveInfo (
            Player p,
            int[] coOrdinates,
            UserInput.Direction d,
            char[] w )
```

MoveInfo Constructor

Parameters

p	Player making the move
coOrdinates	Position of the first letter of the Word
d	Direction of the Word
w	Word in char array form

Exceptions

InvalidMoveInfoException	Player can not be Null

3.17.3 Member Function Documentation

3.17.3.1 addAuxiliaryWord()

```
void scrabble.MoveInfo.addAuxiliaryWord (
            Word auxWord )
```

Method to add auxiliary Words to the move

Parameters

auxWord	Word to be added

3.17.3.2 getAuxiliaryWords()

```
ArrayList<Word> scrabble.MoveInfo.getAuxiliaryWords ( )
```

Accessor Method for auxiliaryWords

Returns

auxiliaryWords

3.17.3.3 getMoveScore()

```
int scrabble.MoveInfo.getMoveScore ( )
```

Accessor Method for moveScore

Returns

moveScore

3.17.3.4 getPlayer()

```
Player scrabble.MoveInfo.getPlayer ( )
```

Accessor Method for Player

Returns

Player

3.17.3.5 getPrimaryWord()

```
Word scrabble.MoveInfo.getPrimaryWord ( )
```

Accessor Method for moveScore

Returns

moveScore

3.17.3.6 getRequiredTiles()

```
char [] scrabble.MoveInfo.getRequiredTiles ( )
```

Accessor Method for requiredTiles

Returns

requiredTiles

3.17.3.7 getRequiredTilesPositions()

```
int [][] scrabble.MoveInfo.getRequiredTilesPositions ( )
```

Accessor Method for requiredTilesPositions

Returns

requiredTilesPositions

3.17.3.8 setRequiredTiles()

```
void scrabble.MoveInfo.setRequiredTiles (
            char[] requiredTiles,
            int requiredTilesPositions[][] )
```

Mutator Method for requiredTiles and requiredTilesPositions

Parameters

requiredTiles	The Tiles required for the move
requiredTilesPositions	The positions for the Tiles on the Board

3.17.3.9 setScore()

```
void scrabble.MoveInfo.setScore (
            int score )  [protected]
```

Mutator Method for Score

Parameters

score	The Score of the move

Exceptions

InvalidMoveInfoException	The move must have a positive score

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

- src/main/java/scrabble/MoveInfo.java

3.18 scrabble.MoveInfoTest Class Reference

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

- src/test/java/scrabble/MoveInfoTest.java

3.19 scrabble.Player Class Reference

Public Member Functions

- Player (String namePlayer, Pool pool)
- void playerReset (String newName)
- String getName ()
- void setName (String name)
- int getScore ()
- void increaseScore (int scoreIncrease)
- void decreaseScore (int scoreDecrease)
- Frame getPlayerFrame ()
- boolean **charUserInputCheck** (char letter)
- String toString ()

3.19.1 Detailed Description

Class that represents a player. Contains the information of each players

3.19.2 Constructor & Destructor Documentation

3.19.2.1 Player()

```
scrabble.Player.Player (
            String namePlayer,
            Pool pool )
```

Player Constructor

Parameters

namePlayer	String for the name of the Player
pool	Reference to the Pool of the game

Exceptions

InvalidPlayerNameException	If inputted name is invalid

3.19.3 Member Function Documentation

3.19.3.1 decreaseScore()

```
void scrabble.Player.decreaseScore (
            int scoreDecrease )
```

Mutator method for score to decrease the players score

Parameters

scoreDecrease	The value for the score to be increased by

Exceptions

InvalidPlayerScoreException	If a negative value is passed into Decrease_Score

3.19.3.2 getName()

```
String scrabble.Player.getName ( )
```

Accessor Method for Name

Returns

The name of the player

3.19.3.3 getPlayerFrame()

```
Frame scrabble.Player.getPlayerFrame ( )
```

Accessing Method player's frame

Returns

The value of playerFrame

3.19.3.4 getScore()

```
int scrabble.Player.getScore ( )
```

Accessor Method for Player Score

Returns

The Player's Score

3.19.3.5 increaseScore()

```
void scrabble.Player.increaseScore (
            int scoreIncrease )
```

Mutator method for score to increase the players score

Parameters

scoreIncrease	The value for the score to be increased by

Exceptions

InvalidPlayerScoreException	If player's score is increased by a negative value

3.19.3.6 playerReset()

```
void scrabble.Player.playerReset (
            String newName )
```

Resetting the score and name of the player

Parameters

newName	The new player name after the player is reset

Exceptions

InvalidPlayerNameException	If inputted name is invalid

3.19.3.7 setName()

```
void scrabble.Player.setName (
            String name )
```

Mutator Method for name

Parameters

name	The new Name of the Player

Exceptions

InvalidPlayerNameException	If inputted name is invalid

3.19.3.8 toString()

```
String scrabble.Player.toString ( )
```

A toString method to print the Player class variables

Returns

The Player class variables

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

- src/main/java/scrabble/Player.java

3.20 scrabble.Pool Class Reference

Public Member Functions

- void poolFill () throws InvalidTileException
- String toString ()
- Tile removeTile () throws InvalidPoolException
- void receiveTile (Tile tileAdded)
- int tilesInPool ()
- boolean isEmpty ()
- Pool ()

Static Public Member Functions

- static void **main** (String[ ] args)

3.20.1 Detailed Description

Class that represent a Character Tile for the Game of Scrabble

3.20.2 Constructor & Destructor Documentation

3.20.2.1 Pool()

```
scrabble.Pool.Pool ( )
```

Pool constructor

3.20.3 Member Function Documentation

3.20.3.1 isEmpty()

```
boolean scrabble.Pool.isEmpty ( )
```

Method to Check if the pool is empty

Returns

True if pool is empty

3.20.3.2 poolFill()

```
void scrabble.Pool.poolFill ( ) throws InvalidTileException
```

Function to fill the array with the set amount of each Tile in the standard English rules

3.20.3.3 receiveTile()

```
void scrabble.Pool.receiveTile (
            Tile tileAdded )
```

Method to take in a tile and add it to a pool

Parameters

tileAdded	The tile to be added to the pool

3.20.3.4 removeTile()

```
Tile scrabble.Pool.removeTile ( ) throws InvalidPoolException
```

Method to remove a random tile from the pool and return the tile that was removed

Returns

The tile which was randomly removed from the pool

Exceptions

InvalidPoolException	If the pool is empty

3.20.3.5 tilesInPool()

```
int scrabble.Pool.tilesInPool ( )
```

Method to find the number of tiles in pool

Returns

The number of tiles in pool

3.20.3.6 toString()

```
String scrabble.Pool.toString ( )
```

Pool toString Method

Returns

Pool information in the form of a String

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

- src/main/java/scrabble/Pool.java

3.21 scrabble.PoolTest Class Reference

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

- src/test/java/scrabble/PoolTest.java

3.22 scrabble.Scrabble Class Reference

Public Member Functions

- Scrabble () throws FileNotFoundException
- Board getBoard ()
- Pool getPool ()
- Player[ ] getPlayers ()
- ArrayList< MoveInfo > getMoveHistory ()
- void createPlayer (String name, int playerNumber)
- void playerMove (int[ ] startPosition, UserInput.Direction direction, char[ ] word, Player player)
- boolean isGameOver ()
- void gameOver ()
- boolean dictionaryWords (MoveInfo move)

3.22.1 Constructor & Destructor Documentation

3.22.1.1 Scrabble()

```
scrabble.Scrabble.Scrabble ( ) throws FileNotFoundException
```

Scrabble Game Constructor

Creates a new game of Scrabble

Exceptions

FileNotFoundException	If Scanner fails to find Scrabble Dictionary

3.22.2 Member Function Documentation

3.22.2.1 createPlayer()

```
void scrabble.Scrabble.createPlayer (
            String name,
            int playerNumber )
```

Method to create a player with an inputted name

Parameters

name	The name of the player
playerNumber	The index of the player in the players array

Exceptions

InvalidScrabbleException	If the index is out of bounds of the players array

3.22.2.2 dictionaryWords()

```
boolean scrabble.Scrabble.dictionaryWords (
            MoveInfo move )
```

Method to validate the words created in a move

Parameters

move	The move to validate

Returns

True if all words are valid

3.22.2.3 gameOver()

```
void scrabble.Scrabble.gameOver ( )
```

Method to subtract Frame Tile values from Players' scores at the end of the game

3.22.2.4 getBoard()

```
Board scrabble.Scrabble.getBoard ( )
```

Accessor Method for Board

Returns

The Board

3.22.2.5 getMoveHistory()

```
ArrayList<MoveInfo> scrabble.Scrabble.getMoveHistory ( )
```

Accessor Method for MoveHistory

Returns

The MoveHistory ArrayList

3.22.2.6 getPlayers()

```
Player [] scrabble.Scrabble.getPlayers ( )
```

Accessor Method for Players

Returns

The Players array

3.22.2.7 getPool()

```
Pool scrabble.Scrabble.getPool ( )
```

Accessor Method for Pool

Returns

The Poll

3.22.2.8 isGameOver()

```
boolean scrabble.Scrabble.isGameOver ( )
```

Method to check if the game is over

Returns

True if the game is over

3.22.2.9 playerMove()

```
void scrabble.Scrabble.playerMove (
            int[] startPosition,
            UserInput.Direction direction,
            char[] word,
            Player player )
```

Method to complete a Player move

Parameters

startPosition	Start position of the Word
direction	Direction of the Word
word	Word in char array form
player	Player making the move

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

- src/main/java/scrabble/Scrabble.java

3.23 scrabble.ScrabbleTest Class Reference

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

- src/test/java/scrabble/ScrabbleTest.java

3.24 scrabble.Square Class Reference

Classes

- enum SquareType

Public Member Functions

- Square (SquareType type)
- SquareType getType ()
- Tile getTile ()
- Boolean isEmpty ()
- SquareType setNormal ()
- void setTile (Tile tile)
- String toString ()
- Tile setEmpty ()

3.24.1 Detailed Description

The Square Class represents the square on the Scrabble Board as objects

3.24.2 Constructor & Destructor Documentation

3.24.2.1 Square()

```
scrabble.Square.Square (
            SquareType type )
```

Square Constructor

Parameters

type	The SquareType of the Square

3.24.3 Member Function Documentation

3.24.3.1 getTile()

```
Tile scrabble.Square.getTile ( )
```

Accessor Method for the Tile on the Square

Returns

The Tile on the Square

3.24.3.2 getType()

```
SquareType scrabble.Square.getType ( )
```

Accessor Method for the SquareType of the Square

Returns

The SquareType of the Square

3.24.3.3 isEmpty()

```
Boolean scrabble.Square.isEmpty ( )
```

Method to find if the Square has a Tile

Returns

True if the Square has no Tile on it

3.24.3.4 setEmpty()

```
Tile scrabble.Square.setEmpty ( )
```

Method to setSquare to empty

Returns

The Tile on the Square

Exceptions

InvalidSquareException	The Square was empty

3.24.3.5 setNormal()

```
SquareType scrabble.Square.setNormal ( )
```

Method to set the SquareType of a Square to NORMAL

Returns

The SquareType of the Square before setting to normal

3.24.3.6 setTile()

```
void scrabble.Square.setTile (
            Tile tile )
```

Mutator Method for Tile on Square

Parameters

tile	Tile to be placed on the Square

Exceptions

InvalidSquareException	The Square has a Tile on it already or the Tile is a null Tile

3.24.3.7 toString()

```
String scrabble.Square.toString ( )
```

toString Method for Square

Returns

the String form of Square

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

- src/main/java/scrabble/Square.java

3.25 scrabble.SquareTest Class Reference

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

- src/test/java/scrabble/SquareTest.java

3.26 scrabble.Square.SquareType Enum Reference

Public Attributes

- **NORMAL**
- **START**
- **DOUBLE_WORD**
- **TRIPLE_WORD**
- **DOUBLE_LETTER**
- **TRIPLE_LETTER**

3.26.1 Detailed Description

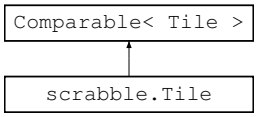
SquareType is an Enum of possible Types of Square on the Scrabble Board

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

- src/main/java/scrabble/Square.java

3.27 scrabble.Tile Class Reference

Inheritance diagram for scrabble.Tile:



Public Member Functions

- int compareTo (Tile t)
- boolean equals (Object obj)
- short getValue ()
- char getCharacter ()
- void setCharacter (char character) throws InvalidTileException
- void setNull ()
- Tile (char c) throws InvalidTileException
- String toString ()

Static Public Member Functions

- static void main (String[ ] args)

3.27.1 Detailed Description

Class that represent a Character Tile for the Game of Scrabble

3.27.2 Constructor & Destructor Documentation

3.27.2.1 Tile()

```
scrabble.Tile.Tile (
            char c ) throws InvalidTileException
```

Constructor for Tile

Parameters

c	Character for the Tile

Exceptions

InvalidTileException	If an invalid character is inputted

3.27.3 Member Function Documentation

3.27.3.1 compareTo()

```
int scrabble.Tile.compareTo (
            Tile t )
```

Method to compare Tile objects by Character then Value

Parameters

t	Tile for this tile to be compared to

Returns

Returns 0 if equal. Returns 1 if this Character is greater or Characters are equals and this Value is greater else returns -1

3.27.3.2 equals()

```
boolean scrabble.Tile.equals (
            Object obj )
```

Method to see if this Tile equals another object

Parameters

obj	Object to be compared to

Returns

Returns True if the objects are equal

3.27.3.3 getCharacter()

```
char scrabble.Tile.getCharacter ( )
```

Accessor method for character of the Tile

Returns

Char of the Tile

3.27.3.4 getValue()

```
short scrabble.Tile.getValue ( )
```

Accessor method for value of the tile

Returns

Short value of the tile

3.27.3.5 main()

```
static void scrabble.Tile.main (
            String[] args )  [static]
```

Main Function

Parameters

args	Arguments

3.27.3.6 setCharacter()

```
void scrabble.Tile.setCharacter (
            char character ) throws InvalidTileException
```

Method to change the character of a blank Tile

Parameters

character	New char for the Tile

Exceptions

InvalidTileException	If an invalid char inputted or the Tile is not blank

3.27.3.7 setNull()

```
void scrabble.Tile.setNull ( )
```

Method to set Blank Tiles Character back to null

Exceptions

InvalidTileException	If the tile is not a blank tile

3.27.3.8 toString()

```
String scrabble.Tile.toString ( )
```

toString Method for Tile

Returns

The string of Tile

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

- src/main/java/scrabble/Tile.java

3.28 scrabble.UserInput Class Reference

Classes

- enum Direction
- enum UserInputType

Public Member Functions

- UserInput (UserInputType type)
- UserInput (UserInputType type, char[ ] tileExchange)
- UserInput (UserInputType type, String UserName)
- UserInput (UserInputType type, char[ ] w, int[ ] position, Direction d)
- UserInputType getInputType ()
- char[ ] getWord ()
- String getName ()
- int[ ] getStartPosition ()
- Direction getWordDirection ()

Static Public Member Functions

- static UserInput parseInput (String input)

3.28.1 Constructor & Destructor Documentation

3.28.1.1 UserInput() [1/4]

```
scrabble.UserInput.UserInput (
            UserInputType type )
```

Constructor for cases with one token such as 'HELP' or 'PASS'

Parameters

type	The UserInputType

3.28.1.2 UserInput() [2/4]

```
scrabble.UserInput.UserInput (
            UserInputType type,
            char[] tileExchange )
```

Constructor for when user is swapping a Tile(s)

Parameters

type	The UserInputType
tileExchange	An array of characters that are to be swapped

Exceptions

InvalidInputException	If user input are not valid tiles

3.28.1.3 UserInput() [3/4]

```
scrabble.UserInput.UserInput (
            UserInputType type,
            String UserName )
```

Parameters

type	The UserInputType
UserName	A String that the User inputted for their name

3.28.1.4 UserInput() [4/4]

```
scrabble.UserInput.UserInput (
            UserInputType type,
            char[] w,
            int[] position,
            Direction d )
```

Constructor for when the user wants to place a word on the Board

Parameters

type	The UserInputType
w	The word that the user wants to place on the Board
position	The position of the coordinate of the first Tile of the word
d	The direction of the word

3.28.2 Member Function Documentation

3.28.2.1 getInputType()

```
UserInputType scrabble.UserInput.getInputType ( )
```

Accessor method for getting the type of input

Returns

Returns the input type

3.28.2.2 getName()

```
String scrabble.UserInput.getName ( )
```

Accessor method for getting the name of the player that the user inputted

Returns

Returns a string which contains the inputted user name

3.28.2.3 getStartPosition()

```
int [] scrabble.UserInput.getStartPosition ( )
```

Accessor method for getting the coordinates of the first Tile of the word the user wants to place on the board

Returns

Returns the coordinates of the first Tile of the word the user wants to place on the board

3.28.2.4 getWord()

```
char [] scrabble.UserInput.getWord ( )
```

Accessor method for getting the word when placing a Tile. Also used for accessing the Tiles a user wants to swap.

Returns

Returns an array of characters which contains either the word the user wants to place or the Tiles the user wants to swap

3.28.2.5 getWordDirection()

```
Direction scrabble.UserInput.getWordDirection ( )
```

Accessor method for getting the direction of the word that is to be placed on the Board

Returns

Returns the direction of the word that is to be placed on the Board

3.28.2.6 parseInput()

```
static UserInput scrabble.UserInput.parseInput (
            String input )  [static]
```

Parameters

input	The string that the User inputted into the FX console which will be broken down and parsed

Returns

Returns an object UserInput which contains the user's input which has been broken down and parsed

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

- src/main/java/scrabble/UserInput.java

3.29 scrabble.UserInputTest Class Reference

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

- src/test/java/scrabble/UserInputTest.java

3.30 scrabble.UserInput.UserInputType Enum Reference

Public Attributes

- **QUIT**
- **HELP**
- **PASS**
- **EXCHANGE**
- **PLACE_TILE**
- **ERROR**
- **BLANK**
- **CHALLENGE**
- **RESTART**
- **NAME**

3.30.1 Detailed Description

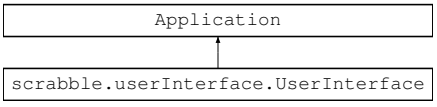
UserInputType is an enum type for the types of possible expected user inputs

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

- src/main/java/scrabble/UserInput.java

3.31 scrabble.userInterface.UserInterface Class Reference

Inheritance diagram for scrabble.userInterface.UserInterface:



Public Member Functions

- void start (Stage gameStage)

Static Public Member Functions

- static void main (String[ ] args)

3.31.1 Member Function Documentation

3.31.1.1 main()

```
static void scrabble.userInterface.UserInterface.main (
            String[ ] args )  [static]
```

Main method to launch application

Parameters

args	empty argument

3.31.1.2 start()

```
void scrabble.userInterface.UserInterface.start (
            Stage gameStage )
```

Method to start the javaFx application

Parameters

gameStage	Stage to be used in the application

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

- src/main/java/scrabble/userInterface/UserInterface.java

3.32 scrabble.Word Class Reference

Public Member Functions

- Word (int[ ] coOrdinates, UserInput.Direction d, char[ ] w)

- char[ ] getWord ()
- UserInput.Direction getDirection ()
- int[ ] getStartPosition ()
- String toString ()

3.32.1 Detailed Description

Word Class to store information about a word on the board

3.32.2 Constructor & Destructor Documentation

3.32.2.1 Word()

```
scrabble.Word.Word (
            int[] coOrdinates,
            UserInput.Direction d,
            char[] w )
```

Word Constructor

Parameters

coOrdinates	The starting position on the board (row, col)
d	The direction of the Word
w	The word in char array form

Exceptions

InvalidWordException	The Word must be between 1 - 15 letters

3.32.3 Member Function Documentation

3.32.3.1 getDirection()

```
UserInput.Direction scrabble.Word.getDirection ( )
```

Accessor Method for the Direction

Returns

The Direction of the Word

3.32.3.2 getStartPosition()

```
int [] scrabble.Word.getStartPosition ( )
```

Accessor Method for the Start Position

Returns

The co-ordinates for the Start Position (row, col)

3.32.3.3 getWord()

```
char [] scrabble.Word.getWord ( )
```

Accessor Method for the Word

Returns

The word in char array form

3.32.3.4 toString()

```
String scrabble.Word.toString ( )
```

toString method for Word

Returns

Word in string form

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

- src/main/java/scrabble/Word.java

3.33 scrabble.WordTest Class Reference

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

- src/test/java/scrabble/WordTest.java

Index