

Model Report

Class Model

Version ● Proposed



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1 Class Model

Package in package 'Model'

Class Model
Version Phase 1.0 Proposed
me created on 3/5/2021. Last modified 3/5/2021

1.1 main

Package in package 'Class Model'

main
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

1.1.1 tictactoe

Package in package 'main'

tictactoe
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

1.1.1.1 tictactoe diagram

Class diagram in package 'tictactoe'

tictactoe
Version 1.0
pantz created on 4/5/2021. Last modified 4/5/2021

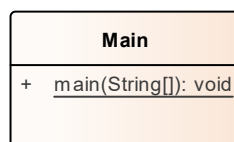


Figure 1: tictactoe

1.1.1.2 controller

Package in package 'tictactoe'

controller
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

1.1.1.2.1 controller diagram

Class diagram in package 'controller'

controller

Version 1.0

pantz created on 4/5/2021. Last modified 4/5/2021

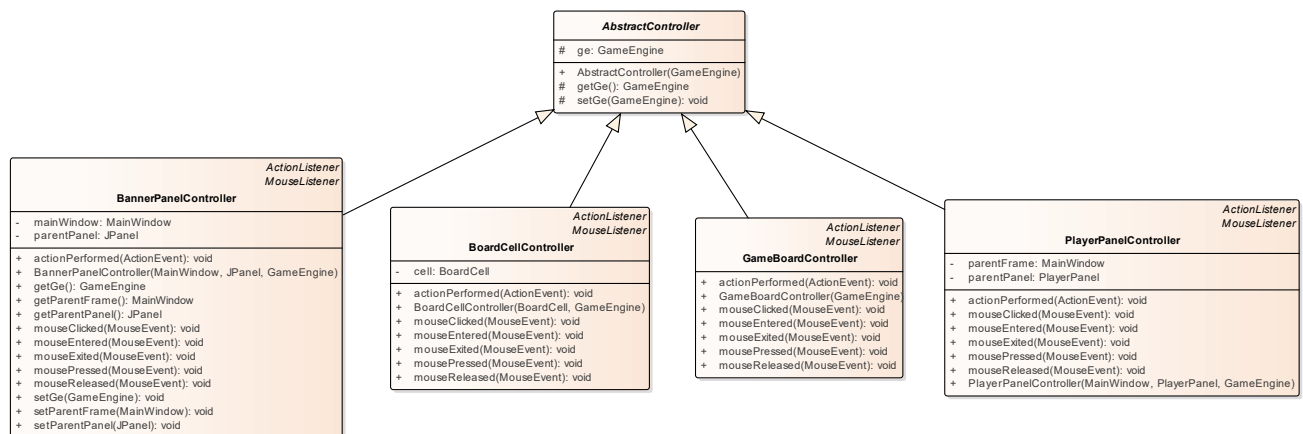


Figure 2: controller

1.1.1.2.2 AbstractController

Class in package 'controller'

This is an abstract controller class which gets the GameEngine instance. All classes extend this class are getting the GameEngine object instantiated

AbstractController

Version 1.0 Phase 1.0 Proposed

pantz created on 4/5/2021. Last modified 4/5/2021

INCOMING STRUCTURAL RELATIONSHIPS	
⇒ Generalization from GameBoardController to AbstractController	[Direction is 'Source -> Destination'.]
⇒ Generalization from PlayerPanelController to AbstractController	[Direction is 'Source -> Destination'.]
⇒ Generalization from BoardCellController to AbstractController	[Direction is 'Source -> Destination'.]
⇒ Generalization from BannerPanelController to AbstractController	[Direction is 'Source -> Destination'.]

ATTRIBUTES	
◆ ge : GameEngine Protected	[Is static False. Containment is Not Specified.]

ASSOCIATIONS	
◆ Association (direction: Source -> Destination)	
Source: Public (Class) AbstractController	Target: Protected ge (Class) GameEngine

ASSOCIATIONS**OPERATIONS**

- ◆ AbstractController (ge : GameEngine) : Public
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
- ◆ getGe () : GameEngine Protected
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
- ◆ setGe (ge : GameEngine) : void Protected
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.2.3 BannerPanelController*Class in package 'controller'*

BannerPanelController
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021
Extends AbstractController, ActionListener, MouseListener

OUTGOING STRUCTURAL RELATIONSHIPS

- ↳ Generalization from BannerPanelController to AbstractController
[Direction is 'Source -> Destination'.]

ATTRIBUTES













- ◆ mainWindow : MainWindow Private
[Is static False. Containment is Not Specified.]
- ◆ parentPanel : JPanel Private
[Is static False. Containment is Not Specified.]

ASSOCIATIONS

- ✎ . Association (direction: Source -> Destination)
Source: Public (Class) BannerPanelController Target: Private mainWindow (Class) MainWindow
- ✎ . Association (direction: Source -> Destination)
Source: Public (Class) BannerPanel Target: Private bannerPanelController (Class) BannerPanelController

OPERATIONS

- ◆ actionPerformed (e : ActionEvent) : void Public
Properties:
annotations = @Override


OPERATIONS	
	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 BannerPanelController (parentFrame : MainWindow , parentPanel : JPanel , ge : GameEngine) : Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getGe () : GameEngine Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getParentFrame () : MainWindow Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getParentPanel () : JPanel Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 mouseClicked (e : MouseEvent) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 mouseEntered (e : MouseEvent) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 mouseExited (e : MouseEvent) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 mousePressed (e : MouseEvent) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 mouseReleased (e : MouseEvent) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setGe (ge : GameEngine) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setParentFrame (parentFrame : MainWindow) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setParentPanel (parentPanel : JPanel) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	

1.1.1.2.4 BoardCellController

Class in package 'controller'

BoardCellController
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021
Extends AbstractController, ActionListener, MouseListener

OUTGOING STRUCTURAL RELATIONSHIPS

 Generalization from BoardCellController to AbstractController
[Direction is 'Source -> Destination'.]


ATTRIBUTES


 cell : BoardCell Private
[Is static False. Containment is Not Specified.]


ASSOCIATIONS


 Association (direction: Source -> Destination)
Source: Public (Class) BoardCellController Target: Private cell (Class) BoardCell


OPERATIONS

 actionPerformed (e : ActionEvent) : void Public
Properties:
annotations = @Override
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]


 BoardCellController (cell : BoardCell, ge : GameEngine) : Public
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 mouseClicked (e : MouseEvent) : void Public
Properties:
annotations = @Override
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 mouseEntered (e : MouseEvent) : void Public
Properties:
annotations = @Override
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 mouseExited (e : MouseEvent) : void Public
Properties:
annotations = @Override
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 mousePressed (e : MouseEvent) : void Public







OPERATIONS
Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 mouseReleased (e : MouseEvent) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.2.5 GameBoardController

Class in package 'controller'

GameBoardController
 Version 1.0 Phase 1.0 Proposed
 pantz created on 4/5/2021. Last modified 4/5/2021
 Extends AbstractController, ActionListener, MouseListener

OUTGOING STRUCTURAL RELATIONSHIPS
 Generalization from GameBoardController to AbstractController [Direction is 'Source -> Destination'.]

OPERATIONS
 actionPerformed (e :(ActionEvent)) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 GameBoardController (ge : GameEngine) : Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 mouseClicked (e : MouseEvent) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 mouseEntered (e : MouseEvent) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 mouseExited (e : MouseEvent) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 mousePressed (e : MouseEvent) : void Public

OPERATIONS

Properties:

annotations = @Override

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]



mouseReleased (e : MouseEvent) : void Public

Properties:

annotations = @Override

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.2.6 PlayerPanelController*Class in package 'controller'*

PlayerPanelController

Version 1.0 Phase 1.0 Proposed

pantz created on 4/5/2021. Last modified 4/5/2021

Extends AbstractController, ActionListener, MouseListener

OUTGOING STRUCTURAL RELATIONSHIPS

Generalization from PlayerPanelController to AbstractController

[Direction is 'Source -> Destination'.]

ATTRIBUTES

parentFrame : MainWindow Private

[Is static False. Containment is Not Specified.]



parentPanel : PlayerPanel Private

[Is static False. Containment is Not Specified.]

ASSOCIATIONS

. Association (direction: Source -> Destination)

Source: Public (Class) PlayerPanelController

Target: Private parentPanel (Class) PlayerPanel



. Association (direction: Source -> Destination)

Source: Public (Class) PlayerPanelController

Target: Private parentFrame (Class) MainWindow



. Association (direction: Source -> Destination)

Source: Public (Class) PlayerPanel

Target: Private playerPanelController (Class)
PlayerPanelController**OPERATIONS**

actionPerformed (e :(ActionEvent)) : void Public

Properties:

annotations = @Override

OPERATIONS	
	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 mouseClicked (e : MouseEvent) : void Public Properties: annotations = @Override	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 mouseEntered (e : MouseEvent) : void Public Properties: annotations = @Override	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 mouseExited (e : MouseEvent) : void Public Properties: annotations = @Override	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 mousePressed (e : MouseEvent) : void Public Properties: annotations = @Override	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 mouseReleased (e : MouseEvent) : void Public Properties: annotations = @Override	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 PlayerPanelController (parentFrame : MainWindow , parentPanel : PlayerPanel , ge : GameEngine) : Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.3 io

Package in package 'tictactoe'

io
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

1.1.1.3.1 io diagram

Class diagram in package 'io'

io
Version 1.0
pantz created on 4/5/2021. Last modified 4/5/2021

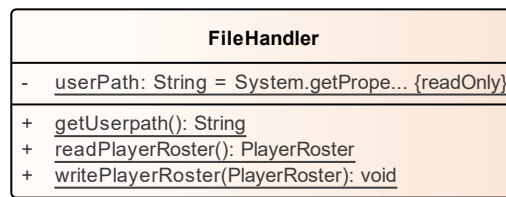






Figure 3: io

1.1.1.3.2 FileHandler

Class in package 'io'

FileHandler
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

ATTRIBUTES	
 <code>userPath : String Private Const = System.getProperty("user.home") + File.separator + "tictactoe.ser"</code>	[Is static True. Containment is Not Specified.]
OPERATIONS	
 <code>getUserpath () : String Public</code>	[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 <code>readPlayerRoster () : PlayerRoster Public</code>	[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 <code>writePlayerRoster (playerRoster : PlayerRoster) : void Public</code>	[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.4 **model**

Package in package 'tictactoe'

model
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

1.1.1.4.1 **model diagram**

Class diagram in package 'model'

model
Version 1.0
pantz created on 4/5/2021. Last modified 4/5/2021

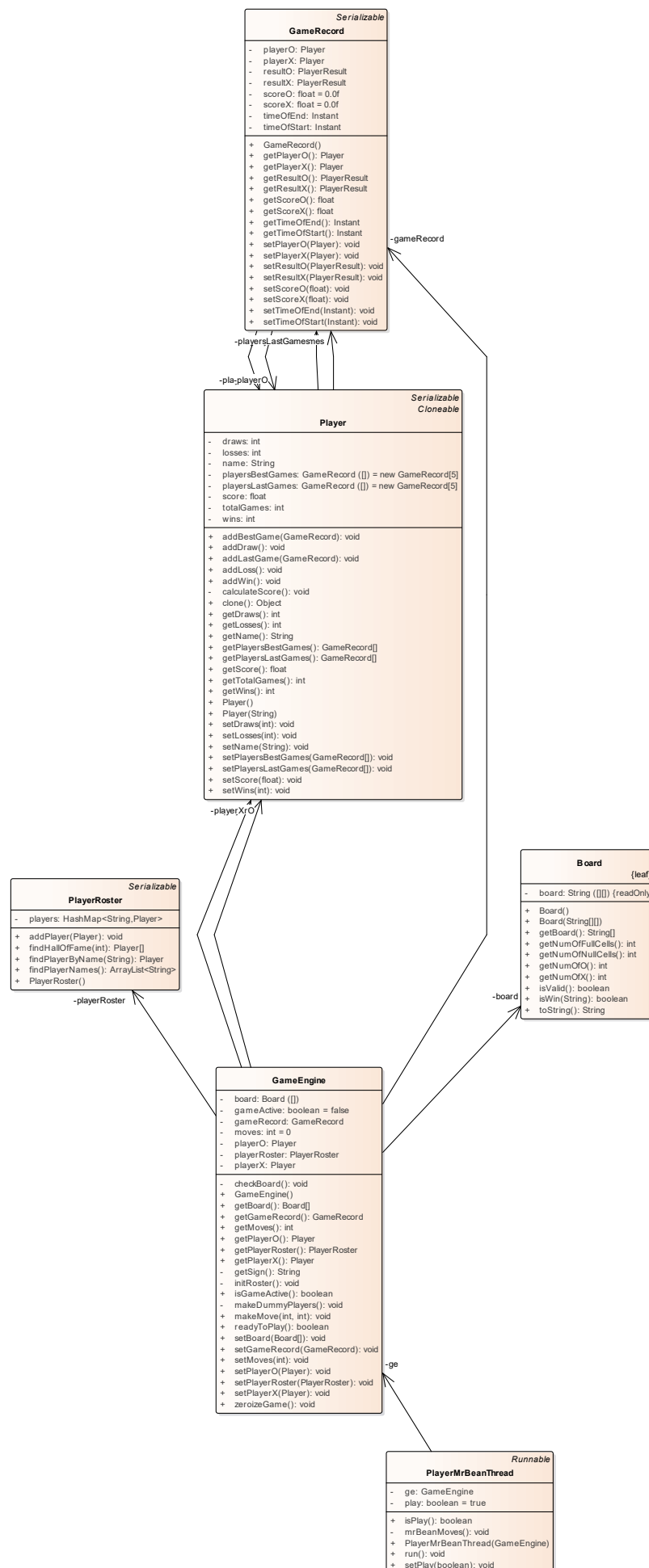


Figure 4: model

1.1.1.4.2 enums

Package in package 'model'

enums
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

1.1.1.4.2.1 enums diagram

Class diagram in package 'enums'

enums
Version 1.0
pantz created on 4/5/2021. Last modified 4/5/2021

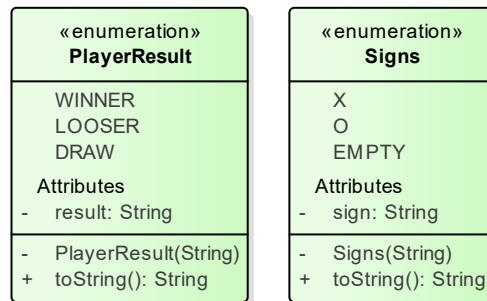





Figure 5: enums

1.1.1.4.2.2 PlayerResult

Enumeration in package 'enums'

PlayerResult
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021






ATTRIBUTES	
<div> WINNER : Public </div> <div> Properties: arguments = "WINNER" </div> <div> [Stereotype is «enum». Is static False. Containment is Not Specified.] </div>	
<div> LOOSER : Public </div> <div> Properties: arguments = "LOOSER" </div> <div> [Stereotype is «enum». Is static False. Containment is Not Specified.] </div>	
<div> DRAW : Public </div>	

ATTRIBUTES	
Properties: arguments = "DRAW"	[Stereotype is «enum». Is static False. Containment is Not Specified.]
 result : String Private	[Is static False. Containment is Not Specified.]
OPERATIONS	
 PlayerResult (result : String) : Private	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 toString () : String Public Properties: annotations = @Override	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.4.2.3 Signs

Enumeration in package 'enums'

Signs
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

ATTRIBUTES	
 X : Public Properties: arguments = "X"	[Stereotype is «enum». Is static False. Containment is Not Specified.]
 O : Public Properties: arguments = "O"	[Stereotype is «enum». Is static False. Containment is Not Specified.]
 EMPTY : Public Properties: arguments = " _ "	[Stereotype is «enum». Is static False. Containment is Not Specified.]
 sign : String Private	[Is static False. Containment is Not Specified.]
OPERATIONS	
 Signs (result : String) : Private	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

OPERATIONS

💎 toString () : String Public

Properties:

annotations = @Override

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.4.3 Board

Class in package 'model'

Board

Version 1.0 Phase 1.0 Proposed

pantz created on 4/5/2021. Last modified 4/5/2021

ATTRIBUTES

💎 board : String Private Const

[Is static False. Containment is Not Specified.]

ASSOCIATIONS

✎ . Association (direction: Source -> Destination)

Source: Public (Class) GameEngine

Target: Private board (Class) Board

✎ . Association (direction: Source -> Destination)

Source: Public (Class) BoardTest

Target: Private b3 (Class) Board

✎ . Association (direction: Source -> Destination)

Source: Public (Class) BoardTest

Target: Private b2 (Class) Board

✎ . Association (direction: Source -> Destination)

Source: Public (Class) BoardTest

Target: Private b1 (Class) Board

OPERATIONS

💎 Board () : Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

💎 Board (b : String[][]) : Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

💎 getBoard () : String Public

[Is static False. Is abstract False. Is return array True. Is query False. Is synchronized False.]

💎 getNumOffullCells () : int Public








[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

OPERATIONS	
 <code>getNumOfNullCells () : int Public</code> [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 <code>getNumOfO () : int Public</code> [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 <code>getNumOfX () : int Public</code> [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 <code>isValid () : boolean Public</code> [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 <code>isWin (s : String) : boolean Public</code> [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 <code>toString () : String Public</code> Properties: <code>annotations = @Override</code> [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	

1.1.1.4.4 GameEngine

Class in package 'model'

GameEngine
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

ATTRIBUTES	
 <code>board : Board Private</code> [Is static False. Containment is Not Specified.]	
 <code>gameActive : boolean Private = false</code> [Is static False. Containment is Not Specified.]	
 <code>gameRecord : GameRecord Private</code> [Is static False. Containment is Not Specified.]	
 <code>moves : int Private = 0</code> [Is static False. Containment is Not Specified.]	
 <code>playerO : Player Private</code> [Is static False. Containment is Not Specified.]	
 <code>playerRoster : PlayerRoster Private</code> [Is static False. Containment is Not Specified.]	
 <code>playerX : Player Private</code>	

ATTRIBUTES

[Is static False. Containment is Not Specified.]

ASSOCIATIONS . Association (direction: Source -> Destination)

Source: Public (Class) GameEngine

Target: Private board (Class) Board

 . Association (direction: Source -> Destination)

Source: Public (Class) GameEngine

Target: Private gameRecord (Class) GameRecord

 . Association (direction: Source -> Destination)

Source: Public (Class) GameEngine

Target: Private playerX (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) GameEngine

Target: Private playerO (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) GameEngine

Target: Private playerRoster (Class) PlayerRoster

 . Association (direction: Source -> Destination)

Source: Public (Class) PlayerMrBeanThread

Target: Private ge (Class) GameEngine

 . Association (direction: Source -> Destination)

Source: Public (Class) MainWindow

Target: Private ge (Class) GameEngine

 . Association (direction: Source -> Destination)


Source: Public (Class) AbstractController

Target: Protected ge (Class) GameEngine


 . Association (direction: Source -> Destination)

Source: Public (Class) AbstractPanel


Target: Protected ge (Class) GameEngine

OPERATIONS checkBoard () : void Private


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]















 GameEngine () : Public




[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getBoard () : Board Public

[Is static False. Is abstract False. Is return array True. Is query False. Is synchronized False.]

 getGameRecord () : GameRecord Public









OPERATIONS	
	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 getMoves () : int Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getPlayerO () : Player Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getPlayerRoster () : PlayerRoster Public Getters And Setters [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getPlayerX () : Player Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getSign () : String Private [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 initRoster () : void Private [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 isGameActive () : boolean Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 makeDummyPlayers () : void Private This method makes players with random scores and saves the data to the file. [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 makeMove (row : int , col : int) : void Public This method is the basic method .. [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 readyToPlay () : boolean Public If the game has two players instances, then it is ready to play. @return true or false [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setBoard (board : Board[]) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setGameRecord (gameRecord : GameRecord) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setMoves (moves : int) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setPlayerO (playerO : Player) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	


OPERATIONS	
 setPlayerRoster (playerRoster : PlayerRoster) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setPlayerX (playerX : Player) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 zeroizeGame () : void Public Initializes a new game [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	

1.1.1.4.5 GameRecord

Class in package 'model'

GameRecord
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021
Extends Serializable

ATTRIBUTES	
 playerO : Player Private [Is static False. Containment is Not Specified.]	
 playerX : Player Private [Is static False. Containment is Not Specified.]	
 resultO : PlayerResult Private [Is static False. Containment is Not Specified.]	
 resultX : PlayerResult Private [Is static False. Containment is Not Specified.]	
 scoreO : float Private = 0.0f [Is static False. Containment is Not Specified.]	
 scoreX : float Private = 0.0f [Is static False. Containment is Not Specified.]	
 timeOfEnd : Instant Private [Is static False. Containment is Not Specified.]	
 timeOfStart : Instant Private [Is static False. Containment is Not Specified.]	

ASSOCIATIONS	
 . Association (direction: Source -> Destination)	

ASSOCIATIONS

Source: Public (Class) GameRecord

Target: Private playerO (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) GameRecord

Target: Private playerX (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) Player


Target: Private playersBestGames (Class)
GameRecord . Association (direction: Source -> Destination)

Source: Public (Class) GameEngine


Target: Private gameRecord (Class) GameRecord

 . Association (direction: Source -> Destination)


Source: Public (Class) Player

Target: Private playersLastGames (Class)
GameRecord**OPERATIONS** GameRecord () : Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getPlayerO () : Player Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getPlayerX () : Player Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getResultO () : PlayerResult Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getResultX () : PlayerResult Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getScoreO () : float Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getScoreX () : float Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getTimeOfEnd () : Instant Public








[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getTimeOfStart () : Instant Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 setPlayerO (playerO : Player) : void Public






[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

OPERATIONS	
 setPlayerX (playerX : Player) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setResultO (resultO : PlayerResult) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setResultX (resultX : PlayerResult) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setScoreO (scoreO : float) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setScoreX (scoreX : float) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setTimeOfEnd (timeOfEnd : Instant) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setTimeOfStart (timeOfStart : Instant) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	

1.1.1.4.6 Player

Class in package 'model'

Player
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021
Extends Serializable, Cloneable

ATTRIBUTES	
 draws : int Private [Is static False. Containment is Not Specified.]	
 losses : int Private [Is static False. Containment is Not Specified.]	
 name : String Private [Is static False. Containment is Not Specified.]	
 playersBestGames : GameRecord Private = new GameRecord[5] [Is static False. Containment is Not Specified.]	
 playersLastGames : GameRecord Private = new GameRecord[5] [Is static False. Containment is Not Specified.]	
 score : float Private [Is static False. Containment is Not Specified.]	

ATTRIBUTES

totalGames : int Private

[Is static False. Containment is Not Specified.]



wins : int Private

[Is static False. Containment is Not Specified.]

ASSOCIATIONS

. Association (direction: Source -> Destination)

Source: Public (Class) Player

Target: Private playersBestGames (Class)
GameRecord

. Association (direction: Source -> Destination)

Source: Public (Class) Player

Target: Private playersLastGames (Class)
GameRecord

. Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p5 (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) PlayerRosterTest

Target: Package p5 (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) GameRecord

Target: Private playerO (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) PlayerRosterTest

Target: Package p3 (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p3 (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) PlayerRosterTest

Target: Package p6 (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p6 (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p1 (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) PlayerTest

Target: Package p2 (Class) Player

ASSOCIATIONS

 . Association (direction: Source -> Destination)

Source: Public (Class) PlayerTest

Target: Package p (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) PlayerTest

Target: Package p1 (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) PlayerRosterTest

Target: Package p4 (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) PlayerRosterTest

Target: Package p1 (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) PlayerTest

Target: Package p3 (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p2 (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) GameEngine

Target: Private playerX (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p4 (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) GameRecord

Target: Private playerX (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) GameEngine

Target: Private playerO (Class) Player

 . Association (direction: Source -> Destination)


Source: Public (Class) PlayerRosterTest

Target: Package p2 (Class) Player















OPERATIONS

 addBestGame (gr : GameRecord) : void Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 addDraw () : void Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

OPERATIONS	
 addLastGame (gr : GameRecord) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 addLoss () : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 addWin () : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 calculateScore () : void Private Score calculator [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 clone () : Object Public Properties: throws = CloneNotSupportedException [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getDraws () : int Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getLosses () : int Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getName () : String Public Getters and Setters [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getPlayersBestGames () : GameRecord Public [Is static False. Is abstract False. Is return array True. Is query False. Is synchronized False.]	
 getPlayersLastGames () : GameRecord Public [Is static False. Is abstract False. Is return array True. Is query False. Is synchronized False.]	
 getScore () : float Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getTotalGames () : int Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 getWins () : int Public public void setTotalGames(int totalGames) { this.totalGames = totalGames; } [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 Player () : Public Default empty constructor [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	

OPERATIONS
<p>◆ Player (name : String) : Public</p> <p>Constructor of the class, which uses the setter method [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ setDraws (draws : int) : void Public</p> <p>[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ setLosses (losses : int) : void Public</p> <p>[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ setName (name : String) : void Public</p> <p>This setter removes leading and trailing spaces from the name and ensures that only the first 20 characters are kept. [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ setPlayersBestGames (playersBestGames : GameRecord[]) : void Public</p> <p>[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ setPlayersLastGames (playersLastGames : GameRecord[]) : void Public</p> <p>[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ setScore (score : float) : void Public</p> <p>[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ setWins (wins : int) : void Public</p> <p>[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>

1.1.1.4.7 PlayerMrBeanThread

Class in package 'model'

PlayerMrBeanThread
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021
Extends Runnable

ATTRIBUTES
<p>◆ ge : GameEngine Private</p> <p>[Is static False. Containment is Not Specified.]</p>
<p>◆ play : boolean Private = true</p> <p>[Is static False. Containment is Not Specified.]</p>
ASSOCIATIONS
<p>✎ Association (direction: Source -> Destination)</p> <p>Source: Public (Class) PlayerMrBeanThread Target: Private ge (Class) GameEngine</p>

OPERATIONS	
 isPlay () : boolean Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 mrBeanMoves () : void Private Properties: throws = InterruptedException [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 PlayerMrBeanThread (ge : GameEngine) : Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 run () : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setPlay (play : boolean) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	

1.1.1.4.8 PlayerRoster

Class in package 'model'

PlayerRoster
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021
Extends Serializable

ATTRIBUTES	
 players : HashMap<String,Player> Private [Is static False. Containment is Not Specified.]	

ASSOCIATIONS	
 . Association (direction: Source -> Destination) Source: Public (Class) PlayerRosterTest Target: Package roster (Class) PlayerRoster	
 . Association (direction: Source -> Destination) Source: Public (Class) FileHandlerTest Target: Package roster (Class) PlayerRoster	
 . Association (direction: Source -> Destination) Source: Public (Class) GameEngine Target: Private playerRoster (Class) PlayerRoster	

OPERATIONS

OPERATIONS

◆ **addPlayer (p : Player) : void Public**

This method adds a player to the HashMap<String,Player>. Before saving, checks if the given name already exists.

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

◆ **findHallOfFame (n : int) : Player Public**

This method returns the best n players of the Players Roster.

@return Player[]

[Is static False. Is abstract False. Is return array True. Is query False. Is synchronized False.]

◆ **findPlayerByName (name : String) : Player Public**

Finds a player by its name.

@return Player

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

◆ **findPlayerNames () : ArrayList<String> Public**

This method returns an array with all the names of players.

@return ArrayList<String>

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

◆ **PlayerRoster () : Public**

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.5 utils

Package in package 'tictactoe'

utils

Version 1.0 Phase 1.0 Proposed

pantz created on 4/5/2021. Last modified 4/5/2021

1.1.1.5.1 utils diagram

Class diagram in package 'utils'

utils

Version 1.0

pantz created on 4/5/2021. Last modified 4/5/2021

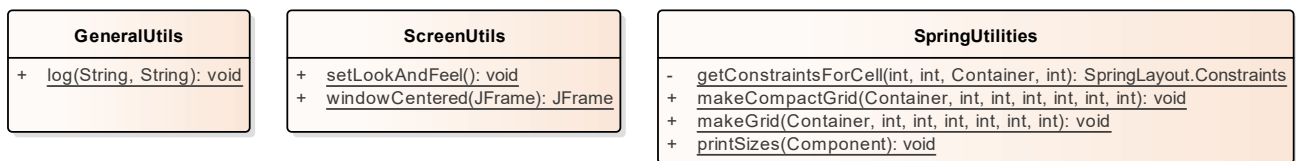


Figure 6: utils

1.1.1.5.2 GeneralUtils

Class in package 'utils'

GeneralUtils

Version 1.0 Phase 1.0 Proposed

pantz created on 4/5/2021. Last modified 4/5/2021

OPERATIONS
<p>◆ log (className : String , log : String) : void Public [Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>

1.1.1.5.3 ScreenUtils

Class in package 'utils'

ScreenUtils

Version 1.0 Phase 1.0 Proposed

pantz created on 4/5/2021. Last modified 4/5/2021

OPERATIONS
<p>◆ setLookAndFeel () : void Public [Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ windowCentered (frame : JFrame) : JFrame Public [Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>

1.1.1.5.4 SpringUtilities

Class in package 'utils'

A 1.4 file that provides utility methods for creating form- or grid-style layouts with SpringLayout. These utilities are used by several programs, such as SpringBox and SpringCompactGrid.

SpringUtilities
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

OPERATIONS
<p>◆ getConstraintsForCell (row : int , col : int , parent : Container , cols : int) : SpringLayout.Constraints Private</p> <p>Used by makeCompactGrid.</p> <p>[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ makeCompactGrid (parent : Container , rows : int , cols : int , initialX : int , initialY : int , xPad : int , yPad : int) : void Public</p> <p>Aligns the first <code>rows</code> * <code>cols</code> components of <code>parent</code> in a grid. Each component in a column is as wide as the maximum preferred width of the components in that column; height is similarly determined for each row. The parent is made just big enough to fit them all.</p> <p>[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ makeGrid (parent : Container , rows : int , cols : int , initialX : int , initialY : int , xPad : int , yPad : int) : void Public</p> <p>Aligns the first <code>rows</code> * <code>cols</code> components of <code>parent</code> in a grid. Each component is as big as the maximum preferred width and height of the components. The parent is made just big enough to fit them all.</p> <p>[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p>◆ printSizes (c : Component) : void Public</p> <p>A debugging utility that prints to stdout the component's minimum, preferred, and maximum sizes.</p> <p>[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>

1.1.1.6 **view**

Package in package 'tictactoe'

view
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

1.1.1.6.1 **view diagram**

Class diagram in package 'view'

view
Version 1.0
pantz created on 4/5/2021. Last modified 4/5/2021

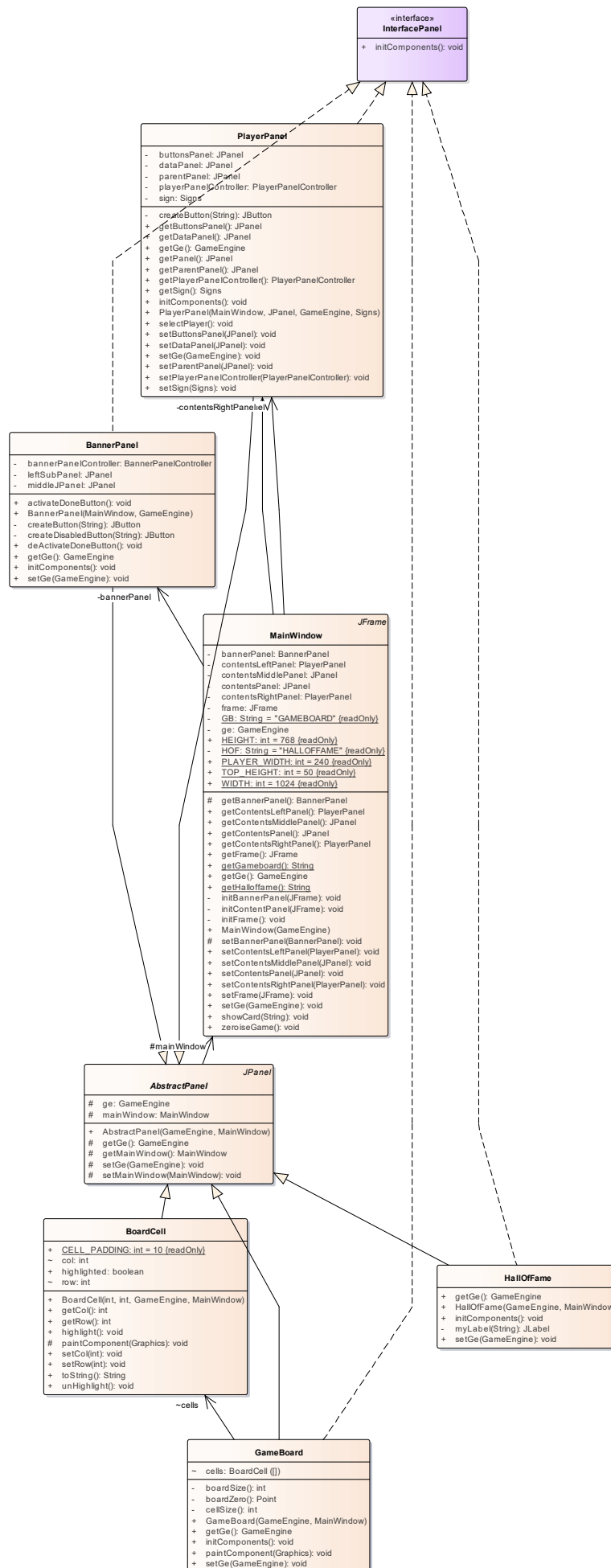


Figure 7: view

1.1.1.6.2 AbstractPanel

Class in package 'view'

This is an Abstract Class which inherits all the attributes of a JPanel. All methods have access modifier protected in order to be used only by classes which extend this class.

AbstractPanel
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021
Extends JPanel



INCOMING STRUCTURAL RELATIONSHIPS	
⇒ Generalization from BannerPanel to AbstractPanel	[Direction is 'Source -> Destination'.]
⇒ Generalization from PlayerPanel to AbstractPanel	[Direction is 'Source -> Destination'.]
⇒ Generalization from BoardCell to AbstractPanel	[Direction is 'Source -> Destination'.]
⇒ Generalization from GameBoard to AbstractPanel	[Direction is 'Source -> Destination'.]
⇒ Generalization from HallOfFame to AbstractPanel	[Direction is 'Source -> Destination'.]
ATTRIBUTES	
ge : GameEngine Protected	[Is static False. Containment is Not Specified.]
mainWindow : MainWindow Protected	[Is static False. Containment is Not Specified.]
ASSOCIATIONS	
. Association (direction: Source -> Destination)	
Source: Public (Class) AbstractPanel	Target: Protected mainWindow (Class) MainWindow
. Association (direction: Source -> Destination)	
Source: Public (Class) AbstractPanel	Target: Protected ge (Class) GameEngine
OPERATIONS	




OPERATIONS
<p> AbstractPanel (ge : GameEngine , mainWindow : MainWindow) : Public</p> <p>Constructor with one argument of GameEngine instance. [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p> getGe () : GameEngine Protected</p> <p>Getters and Setters. [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p> getMainWindow () : MainWindow Protected</p> <p>[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p> setGe (ge : GameEngine) : void Protected</p> <p>[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>
<p> setMainWindow (mainWindow : MainWindow) : void Protected</p> <p>[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]</p>

1.1.1.6.3 BannerPanel

Class in package 'view'

BannerPanel
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021
Extends AbstractPanel

OUTGOING STRUCTURAL RELATIONSHIPS
<p> Generalization from BannerPanel to AbstractPanel [Direction is 'Source -> Destination'.]</p>
<p> Realization from BannerPanel to InterfacePanel [Direction is 'Source -> Destination'.]</p>

ATTRIBUTES
<p> bannerPanelController : BannerPanelController Private [Is static False. Containment is Not Specified.]</p>
<p> leftSubPanel : JPanel Private [Is static False. Containment is Not Specified.]</p>
<p> middleJPanel : JPanel Private [Is static False. Containment is Not Specified.]</p>

ASSOCIATIONS
<p> . Association (direction: Source -> Destination)</p>

ASSOCIATIONS

Source: Public (Class) BannerPanel

Target: Private bannerPanelController (Class)
BannerPanelController Association (direction: Source -> Destination)

Source: Public (Class) MainWindow


Target: Private bannerPanel (Class) BannerPanel

OPERATIONS activateDoneButton () : void Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 BannerPanel (parentFrame : MainWindow , ge : GameEngine) : Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 createButton (text : String) : JButton Private

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 createDisabledButton (text : String) : JButton Private

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 deActivateDoneButton () : void Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getGe () : GameEngine Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 initComponents () : void Public

Properties:

annotations = @Override

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 setGe (ge : GameEngine) : void Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.6.4 BoardCell*Class in package 'view'*

BoardCell

Version 1.0 Phase 1.0 Proposed

pantz created on 4/5/2021. Last modified 4/5/2021



Extends AbstractPanel

OUTGOING STRUCTURAL RELATIONSHIPS Generalization from BoardCell to AbstractPanel



[Direction is 'Source -> Destination'.]

ATTRIBUTES

ATTRIBUTES

 CELL_PADDING : int Public Const = 10	[Is static True. Containment is Not Specified.]
 col : int Package	[Is static False. Containment is Not Specified.]
 highlighted : boolean Public	[Is static False. Containment is Not Specified.]
 row : int Package	[Is static False. Containment is Not Specified.]

ASSOCIATIONS

 . Association (direction: Source -> Destination)	
Source: Public (Class) GameBoard	Target: Package cells (Class) BoardCell
 . Association (direction: Source -> Destination)	
Source: Public (Class) BoardCellController	Target: Private cell (Class) BoardCell

OPERATIONS

 BoardCell (row : int , col : int , ge : GameEngine , mainWindow : MainWindow) : Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 getCol () : int Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 getRow () : int Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 highlight () : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 paintComponent (g : Graphics) : void Protected	
Properties: annotations = @Override	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 setCol (col : int) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 setRow (row : int) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 toString () : String Public	
Properties:	

OPERATIONS

annotations = @Override

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]



unHighlight () : void Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.6.5 GameBoard

Class in package 'view'

GameBoard

Version 1.0 Phase 1.0 Proposed

pantz created on 4/5/2021. Last modified 4/5/2021

Extends AbstractPanel

OUTGOING STRUCTURAL RELATIONSHIPS

Realization from GameBoard to InterfacePanel

[Direction is 'Source -> Destination'.]



Generalization from GameBoard to AbstractPanel

[Direction is 'Source -> Destination'.]

ATTRIBUTES

cells : BoardCell Package

[Is static False. Containment is Not Specified.]

ASSOCIATIONS

Association (direction: Source -> Destination)

Source: Public (Class) GameBoard

Target: Package cells (Class) BoardCell

OPERATIONS

boardSize () : int Private

Returns the internal size of the real board

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]



boardZero () : Point Private

Returns the upper left corner of the board

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]



cellSize () : int Private

Computes the cell size along with paddings (min Panel dimension / 5)

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]





GameBoard (ge : GameEngine , mainWindow : MainWindow) : Public





OPERATIONS	
	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 getGe () : GameEngine Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 initComponents () : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 paintComponent (g : Graphics) : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setGe (ge : GameEngine) : void Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	

1.1.1.6.6 HallOfFame

Class in package 'view'

HallOfFame
 Version 1.0 Phase 1.0 Proposed
 pantz created on 4/5/2021. Last modified 4/5/2021
 Extends AbstractPanel

OUTGOING STRUCTURAL RELATIONSHIPS	
 Realization from HallOfFame to InterfacePanel [Direction is 'Source -> Destination'.]	
 Generalization from HallOfFame to AbstractPanel [Direction is 'Source -> Destination'.]	

OPERATIONS	
 getGe () : GameEngine Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 HallOfFame (ge : GameEngine , mainWindow : MainWindow) : Public [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 initComponents () : void Public Properties: annotations = @Override [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 myLabel (text : String) : JLabel Private [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	

OPERATIONS

◆ setGe (ge : GameEngine) : void Public
 [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.6.7 MainWindow

Class in package 'view'

MainWindow
 Version 1.0 Phase 1.0 Proposed
 pantz created on 4/5/2021. Last modified 4/5/2021
 Extends JFrame

ATTRIBUTES

◆ bannerPanel : BannerPanel Private	[Is static False. Containment is Not Specified.]
◆ contentsLeftPanel : PlayerPanel Private	[Is static False. Containment is Not Specified.]
◆ contentsMiddlePanel : JPanel Private	[Is static False. Containment is Not Specified.]
◆ contentsPanel : JPanel Private	[Is static False. Containment is Not Specified.]
◆ contentsRightPanel : PlayerPanel Private	[Is static False. Containment is Not Specified.]
◆ frame : JFrame Private	[Is static False. Containment is Not Specified.]
◆ GB : String Private Const = "GAMEBOARD"	[Is static True. Containment is Not Specified.]
◆ ge : GameEngine Private	[Is static False. Containment is Not Specified.]
◆ HEIGHT : int Public Const = 768	[Is static True. Containment is Not Specified.]
◆ HOF : String Private Const = "HALLOFFAME"	[Is static True. Containment is Not Specified.]
◆ PLAYER_WIDTH : int Public Const = 240	[Is static True. Containment is Not Specified.]
◆ TOP_HEIGHT : int Public Const = 50	[Is static True. Containment is Not Specified.]

ATTRIBUTES

 WIDTH : int Public Const = 1024

[Is static True. Containment is Not Specified.]

ASSOCIATIONS

 . Association (direction: Source -> Destination)

Source: Public (Class) MainWindow

Target: Private contentsLeftPanel (Class)
PlayerPanel

 . Association (direction: Source -> Destination)

Source: Public (Class) MainWindow

Target: Private ge (Class) GameEngine

 . Association (direction: Source -> Destination)

Source: Public (Class) MainWindow

Target: Private contentsRightPanel (Class)
PlayerPanel

 . Association (direction: Source -> Destination)

Source: Public (Class) MainWindow

Target: Private bannerPanel (Class) BannerPanel

 . Association (direction: Source -> Destination)

Source: Public (Class) BannerPanelController

Target: Private mainWindow (Class) MainWindow

 . Association (direction: Source -> Destination)

Source: Public (Class) AbstractPanel


Target: Protected mainWindow (Class)
MainWindow

 . Association (direction: Source -> Destination)

Source: Public (Class) PlayerPanelController

Target: Private parentFrame (Class) MainWindow

OPERATIONS

 getBannerPanel () : BannerPanel Protected

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getContentsLeftPanel () : PlayerPanel Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
















 getContentsMiddlePanel () : JPanel Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]



 getContentsPanel () : JPanel Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getContentsRightPanel () : PlayerPanel Public

OPERATIONS	
	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 getFrame () : JFrame Public Getters And Setters	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 getGameboard () : String Public	[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 getGe () : GameEngine Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 getHalloffame () : String Public	[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 initBannerPanel (frame : JFrame) : void Private	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 initContentPanel (frame : JFrame) : void Private	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 initFrame () : void Private	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 MainWindow (ge : GameEngine) : Public Properties: throws = HeadlessException	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 setBannerPanel (bannerPanel : BannerPanel) : void Protected	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 setContentsLeftPanel (contentsLeftPanel : PlayerPanel) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 setContentsMiddlePanel (contentsMiddlePanel : JPanel) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 setContentsPanel (contentsPanel : JPanel) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 setContentsRightPanel (contentsRightPanel : PlayerPanel) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 setFrame (frame : JFrame) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 setGe (ge : GameEngine) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]



OPERATIONS

-  showCard (cardname : String) : void Public
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
-  zeroiseGame () : void Public
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.6.8 PlayerPanel*Class in package 'view'*

PlayerPanel
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021
Extends AbstractPanel



OUTGOING STRUCTURAL RELATIONSHIPS

-  Generalization from PlayerPanel to AbstractPanel
[Direction is 'Source -> Destination'.]
-  Realization from PlayerPanel to InterfacePanel
[Direction is 'Source -> Destination'.]

ATTRIBUTES

-  buttonsPanel : JPanel Private
[Is static False. Containment is Not Specified.]
-  dataPanel : JPanel Private
[Is static False. Containment is Not Specified.]
-  parentPanel : JPanel Private
[Is static False. Containment is Not Specified.]
-  playerPanelController : PlayerPanelController Private
[Is static False. Containment is Not Specified.]
-  sign : Signs Private
[Is static False. Containment is Not Specified.]

ASSOCIATIONS

-  . Association (direction: Source -> Destination)
Source: Public (Class) PlayerPanel Target: Private playerPanelController (Class)
PlayerPanelController
-  . Association (direction: Source -> Destination)
Source: Public (Class) MainWindow Target: Private contentsLeftPanel (Class)
PlayerPanel

ASSOCIATIONS

 . Association (direction: Source -> Destination)

Source: Public (Class) PlayerPanelController


Target: Private parentPanel (Class) PlayerPanel

 . Association (direction: Source -> Destination)

Source: Public (Class) MainWindow

Target: Private contentsRightPanel (Class)
PlayerPanel


OPERATIONS

 createButton (text : String) : JButton Private

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getButtonsPanel () : JPanel Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getDataPanel () : JPanel Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getGe () : GameEngine Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getPanel () : JPanel Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getParentPanel () : JPanel Public


[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getPlayerPanelController () : PlayerPanelController Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 getSign () : Signs Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 initComponents () : void Public


Properties:

annotations = @Override

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 PlayerPanel (mainWindow : MainWindow , parentPanel : JPanel , ge : GameEngine , sign : Signs) : Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 selectPlayer () : void Public

Properties:

throws = CloneNotSupportedException

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 setButtonsPanel (buttonsPanel : JPanel) : void Public

OPERATIONS	
	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
◆ setDataPanel (dataPanel : JPanel) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
◆ setGe (ge : GameEngine) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
◆ setParentPanel (parentPanel : JPanel) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
◆ setPlayerPanelController (playerPanelController : PlayerPanelController) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
◆ setSign (sign : Signs) : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.6.9 InterfacePanel

Interface in package 'view'

InterfacePanel
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

INCOMING STRUCTURAL RELATIONSHIPS	
⇒ Realization from HallOfFame to InterfacePanel	[Direction is 'Source -> Destination'.]
⇒ Realization from GameBoard to InterfacePanel	[Direction is 'Source -> Destination'.]
⇒ Realization from BannerPanel to InterfacePanel	[Direction is 'Source -> Destination'.]
⇒ Realization from PlayerPanel to InterfacePanel	[Direction is 'Source -> Destination'.]
OPERATIONS	
◆ initComponents () : void Public	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.1.1.7 Main

Class in package 'tictactoe'


This application is a Java GUI (Swing Based) application for tic-tac-toe game. This is the entry point (main) of the whole

application. All comments are in English language because I hate greeklish. Sorry...

Main

Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021

OPERATIONS

 `main (args : String[]) : void Public`

Main method

[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.2 test

Package in package 'Class Model'

test

Version 1.0 Phase 1.0 Proposed

pantz created on 4/5/2021. Last modified 4/5/2021

1.2.1 test diagram

Class diagram in package 'test'

test

Version 1.0

pantz created on 4/5/2021. Last modified 4/5/2021

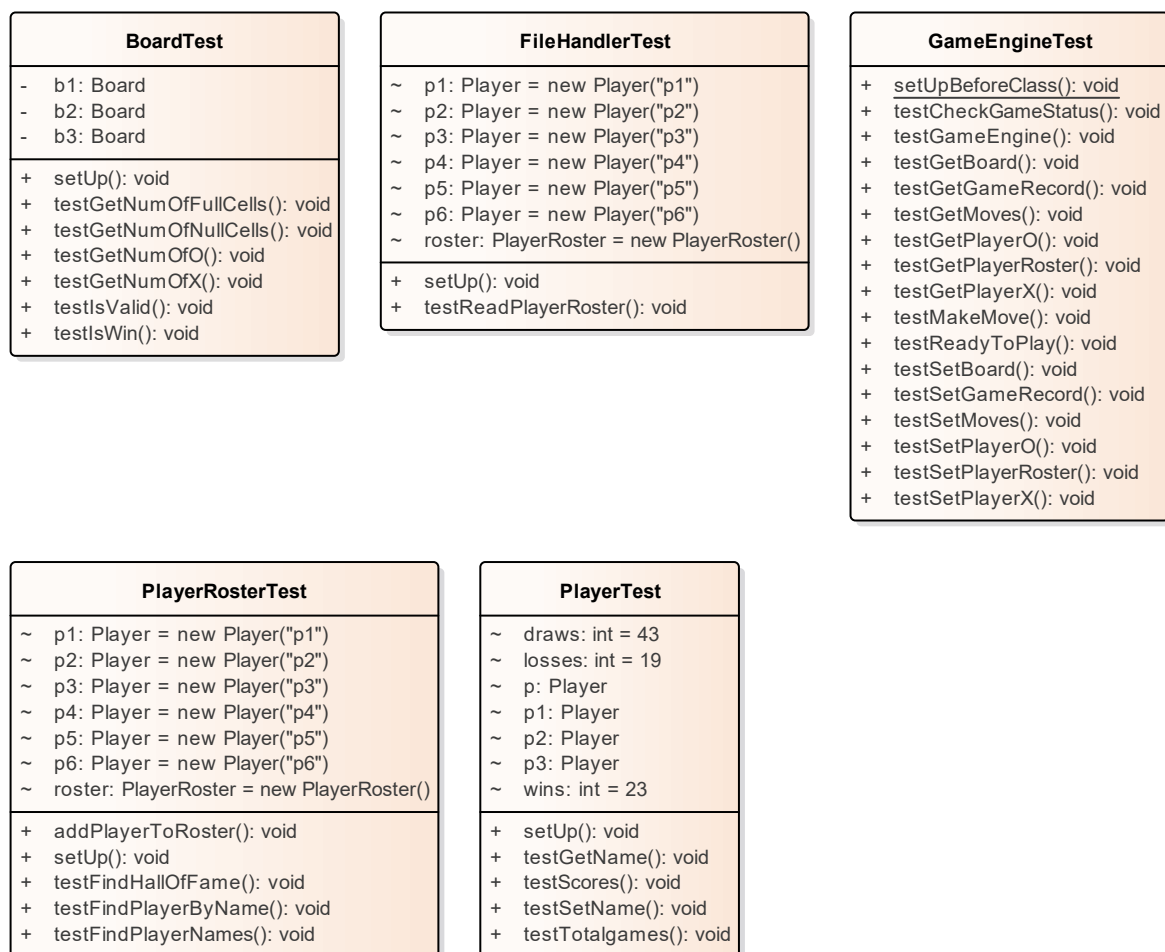


Figure 8: test

1.2.2 BoardTest

Class in package 'test'

BoardTest

Version 1.0 Phase 1.0 Proposed

pantz created on 4/5/2021. Last modified 4/5/2021

ATTRIBUTES
 b1 : Board Private

[Is static False. Containment is Not Specified.]

 b2 : Board Private

[Is static False. Containment is Not Specified.]

 b3 : Board Private

[Is static False. Containment is Not Specified.]

ASSOCIATIONS
 . Association (direction: Source -> Destination)

Source: Public (Class) BoardTest

Target: Private b3 (Class) Board

 . Association (direction: Source -> Destination)


Source: Public (Class) BoardTest

Target: Private b2 (Class) Board

 . Association (direction: Source -> Destination)

Source: Public (Class) BoardTest

Target: Private b1 (Class) Board

OPERATIONS
 setUp () : void Public

Properties:

annotations = @Before

throws = Exception

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 testGetNumOfFullCells () : void Public

Properties:

annotations = @Test

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 testGetNumOfNullCells () : void Public

Properties:

annotations = @Test

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 testGetNumOfO () : void Public

Properties:



annotations = @Test

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 testGetNumOfX () : void Public

Properties:








annotations = @Test

OPERATIONS	
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 testIsValid () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testIsWin () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.2.3 FileHandlerTest

Class in package 'test'

FileHandlerTest
 Version 1.0 Phase 1.0 Proposed
 pantz created on 4/5/2021. Last modified 4/5/2021

ATTRIBUTES	
 p1 : Player Package = new Player("p1")	[Is static False. Containment is Not Specified.]
 p2 : Player Package = new Player("p2")	[Is static False. Containment is Not Specified.]
 p3 : Player Package = new Player("p3")	[Is static False. Containment is Not Specified.]
 p4 : Player Package = new Player("p4")	[Is static False. Containment is Not Specified.]
 p5 : Player Package = new Player("p5")	[Is static False. Containment is Not Specified.]
 p6 : Player Package = new Player("p6")	[Is static False. Containment is Not Specified.]
 roster : PlayerRoster Package = new PlayerRoster()	[Is static False. Containment is Not Specified.]

ASSOCIATIONS	
 . Association (direction: Source -> Destination) Source: Public (Class) FileHandlerTest Target: Package p5 (Class) Player	

ASSOCIATIONS
 . Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p3 (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p6 (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p1 (Class) Player

 . Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p2 (Class) Player

 . Association (direction: Source -> Destination)


Source: Public (Class) FileHandlerTest

Target: Package roster (Class) PlayerRoster

 . Association (direction: Source -> Destination)

Source: Public (Class) FileHandlerTest

Target: Package p4 (Class) Player

OPERATIONS
 setUp () : void Public

Properties:

annotations = @Before

throws = Exception

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

 testReadPlayerRoster () : void Public

Properties:

annotations = @Test

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.2.4 GameEngineTest

Class in package 'test'








GameEngineTest
Version 1.0 Phase 1.0 Proposed
pantz created on 4/5/2021. Last modified 4/5/2021







OPERATIONS
 setUpBeforeClass () : void Public

Properties:

annotations = @BeforeClass

throws = Exception



OPERATIONS	
	[Is static True. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testCheckGameStatus () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testGameEngine () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testGetBoard () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testGetGameRecord () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testGetMoves () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testGetPlayerO () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testGetPlayerRoster () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testGetPlayerX () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testMakeMove () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testReadyToPlay () : void Public	






OPERATIONS	
Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testSetBoard () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testSetGameRecord () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testSetMoves () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testSetPlayerO () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testSetPlayerRoster () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
 testSetPlayerX () : void Public Properties: annotations = @Test	[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]








1.2.5 PlayerRosterTest

Class in package 'test'

PlayerRosterTest
 Version 1.0 Phase 1.0 Proposed
 pantz created on 4/5/2021. Last modified 4/5/2021

ATTRIBUTES	
 p1 : Player Package = new Player("p1")	[Is static False. Containment is Not Specified.]
 p2 : Player Package = new Player("p2")	

ATTRIBUTES	
	[Is static False. Containment is Not Specified.]
 p3 : Player Package = new Player("p3")	[Is static False. Containment is Not Specified.]
 p4 : Player Package = new Player("p4")	[Is static False. Containment is Not Specified.]
 p5 : Player Package = new Player("p5")	[Is static False. Containment is Not Specified.]
 p6 : Player Package = new Player("p6")	[Is static False. Containment is Not Specified.]
 roster : PlayerRoster Package = new PlayerRoster()	[Is static False. Containment is Not Specified.]

ASSOCIATIONS	
 . Association (direction: Source -> Destination)	
Source: Public (Class) PlayerRosterTest	Target: Package roster (Class) PlayerRoster
 . Association (direction: Source -> Destination)	
Source: Public (Class) PlayerRosterTest	Target: Package p5 (Class) Player
 . Association (direction: Source -> Destination)	
Source: Public (Class) PlayerRosterTest	Target: Package p3 (Class) Player
 . Association (direction: Source -> Destination)	
Source: Public (Class) PlayerRosterTest	Target: Package p6 (Class) Player
 . Association (direction: Source -> Destination)	
Source: Public (Class) PlayerRosterTest	Target: Package p4 (Class) Player
 . Association (direction: Source -> Destination)	
Source: Public (Class) PlayerRosterTest	Target: Package p1 (Class) Player
 . Association (direction: Source -> Destination)	
Source: Public (Class) PlayerRosterTest	Target: Package p2 (Class) Player

OPERATIONS	
 addPlayerToRoster () : void Public	
Properties:	

OPERATIONS	
annotations = @Test [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 setUp () : void Public Properties: annotations = @Before throws = Exception [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 testFindHallOfFame () : void Public Properties: annotations = @Test [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 testFindPlayerByName () : void Public Properties: annotations = @Test [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	
 testFindPlayerNames () : void Public Properties: annotations = @Test [Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]	

1.2.6 PlayerTest

Class in package 'test'

PlayerTest
 Version 1.0 Phase 1.0 Proposed
 pantz created on 4/5/2021. Last modified 4/5/2021

ATTRIBUTES	
 draws : int Package = 43 [Is static False. Containment is Not Specified.]	
 losses : int Package = 19 [Is static False. Containment is Not Specified.]	
 p : Player Package [Is static False. Containment is Not Specified.]	
 p1 : Player Package [Is static False. Containment is Not Specified.]	
 p2 : Player Package [Is static False. Containment is Not Specified.]	

ATTRIBUTES

p3 : Player Package

[Is static False. Containment is Not Specified.]



wins : int Package = 23

[Is static False. Containment is Not Specified.]

ASSOCIATIONS

. Association (direction: Source -> Destination)

Source: Public (Class) PlayerTest

Target: Package p2 (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) PlayerTest

Target: Package p (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) PlayerTest

Target: Package p1 (Class) Player



. Association (direction: Source -> Destination)

Source: Public (Class) PlayerTest

Target: Package p3 (Class) Player

OPERATIONS

setUp () : void Public

Properties:

annotations = @Before

throws = Exception

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]



testGetName () : void Public

Properties:

annotations = @Test

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]



testScores () : void Public

Properties:

annotations = @Test

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]



testSetName () : void Public

Properties:

annotations = @Test

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]



testTotalgames () : void Public

Properties:

annotations = @Test

OPERATIONS

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]