**view**

**com.ipl.training.induction.draughts.view**

**Package Specification**

**Project Reference 999/170**

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**Document History**

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# Package Identity

Package Name - view  
Package Identity - com.ipl.training.induction.draughts.view

# Description

The view package contains views that may be registered with the controller. The view consumes events produced by the controller and renders this information. The view is also responsible for detecting that a GUI action has occurred and calls the appropriate method on the controller when this occurs.

# Interface

All views must implement the IDraughtsView interface.



## Remote View

It would be possible for 2 instances of the draughts program to talk to each other at either the model, view or controller level. Arguments can be made for any solution but this design is based upon the instances talking at a view-view level. As it is possible to connect multiple views to a controller it makes sense that a view can be created sends the information to a remote system. This is what the remote version of view does. Thus as well as implementing IDraughtsView, it must also implement the ISharedObject interface.

# Structure



# Element Descriptions and Interfaces

## Interface ISharedObject

Interface between RemoteView objects shared via RMI.

### Class Details

|  |  |
| --- | --- |
| Attribute | Value |
| Visibility | Public |
| Modifiers | - |
| Extends | Remote |
| Implements | - |

### Package Access Methods

#### gameRequest

Called from a remote system indicating that it wants to play.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | - |
| Throws | RemoteException |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| playerName | String | The name of the player requesting the game |
| playerColour | PlayerColor | The colour of the player requesting the game |
| hostName | String | The host name to connect to |
| port | int | The remote port to connect to |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| boolean | Returns true on success |

#### sendClick

Called from the remote system to inform the local draughts game that a square has been clicked in the remote system.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | - |
| Throws | RemoteException |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| squareID | Integer | The square that was clicked |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| - | - |

#### disconnectNotify

Called from the remote system to inform the local draughts game that the remote player has disconnected.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | - |
| Throws | RemoteException |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| - | - |

#### gameEndedNotify

Called from the remote system to inform the local draughts game that the game has ended.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | - |
| Throws | RemoteException |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| - | - |

## RemoteView

### Class Details

|  |  |
| --- | --- |
| Attribute | Value |
| Visibility | Public |
| Modifiers | Final |
| Extends | - |
| Implements | IDraughtsView, ISharedObject |

Provides a view that is rendered on a remote game instance. This class must be created through the static factory createView().

### Public Methods

#### createView

A new instance of RemoteView as an IDraughtsView.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | static |
| Overrides | - |
| Throws | UnknownHostException when the name of the local host cannot be determined |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| IDraughtsView | A new RemoteView |

#### gameRequest

Called from a remote system indicating that it wants to play.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | ISharedObject.gameRequest |
| Throws | RemoteException |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| playerName | String | The name of the player requesting the game |
| playerColour | PlayerColor | The colour of the player requesting the game |
| hostName | String | The host name to connect to |
| port | int | The remote port to connect to |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| boolean | Returns true on success |

#### getType

Called from the controller in the local instance of the Draughts game. Always returns Type.Remote. Used to indicate that this view is a remote view.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | Final |
| Overrides | IDraughtsView.getType |
| Throws | - |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| Type | Always returns Type.Remote |

#### modelPropertyChange

Called by the controller in the local instance of the Draughts game when it needs to pass along a property change from a model.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | IDraughtsView.modelPropertyChange |
| Throws | - |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| event | PropertyChangeEvent | The property change event, the name of which is defined within IDraughtsController |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| - | - |

#### registerController

Called by the controller in the local Draughts game to register this view with the controller, so the view knows which controller to communicate with.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | IDraughtsView.registerController |
| Throws | - |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| controller | IDraughtsController | The controller that this view is registered with |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| - | - |

#### sendClick

Called from the remote system to inform the local Draughts game that a square has been clicked in the remote system.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | ISharedObject.sendClick |
| Throws | RemoteException |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| squareID | Integer | The square that was clicked |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| - | - |

#### disconnectNotify

Called from the remote system to inform the local Draughts game that the remote player has disconnected.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | ISharedObject.disconnectNotify |
| Throws |  |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| - | - |

#### gameEndedNotify

Called from the remote system to inform the local draughts game that the game has ended, this ensures that no unexpected messages are send after the game has ended.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | ISharedObject.disconnectNotify |
| Throws |  |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

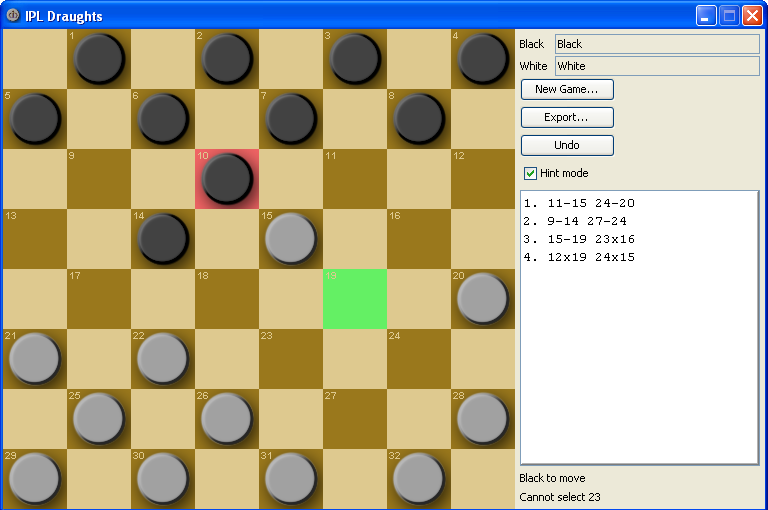
|  |  |
| --- | --- |
| Type | Description |
| - | - |

## DraughtsView

The draughts view is the main screen of the Draughts game. It allows human players to move their pieces and shows moves that have been made by the computer or a remote player. The view also allows a user

* Start a new game
* Export the current game to a PDN file
* Undo the last human move
* Enable hint mode (highlighting possible moves for a selected piece)

The game history is also displayed.



### Class Details

|  |  |
| --- | --- |
| Attribute | Value |
| Visibility | Public |
| Modifiers | Final |
| Extends | - |
| Implements | IDraughtsView |

#### createView

A new instance of DraughtsView as an IDraughtsView.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | static |
| Overrides | - |
| Throws | - |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| IDraughtsView | A new DraughtsView |

#### getType

Always returns Type.Local. Used to indicate that this view is a local view.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | Final |
| Overrides | IDraughtsView.getType |
| Throws | - |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| Type | Always returns Type.Local |

#### modelPropertyChange

Called by the controller when it needs to pass along a property change from a model.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | IDraughtsView.modelPropertyChange |
| Throws | - |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| event | PropertyChangeEvent | The property change event, the name of which is defined within IDraughtsController |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| - | - |

#### registerController

Register this view with a controller so that it will be sent view events.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | IDraughtsView.registerController |
| Throws | - |

**Inputs**

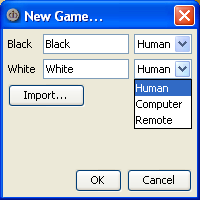
|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| controller | IDraughtsController | The controller that this view is registered with |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| - | - |

## NewGameDialog

The new game dialog presents the following dialog to the user.



It allows the selection of who is controlling both the black and white players as well as the ability to import a PDN file.

For remote players the name is hostname of the remote machine.

### Class Details

|  |  |
| --- | --- |
| Attribute | Value |
| Visibility | Public |
| Modifiers | Final |
| Extends | JDialog |
| Implements | - |

#### NewGameDialog

A new instance of NewGameDialog with view as its parent..

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | - |
| Throws | - |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| view | DraughtsView | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| - | - |

#### getFile

The PDN file to be imported. Null is no file to load.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | - |
| Throws | - |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| File | The PDN file to be imported. Null is no file to load. |

#### getGameData

Get the game data specified by the user via the NewGameDialog. The data contains the type and name of each player, as well as the name of the PDN File.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | - |
| Throws | - |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| GameData | The game data specified by the user via the NewGameDialog |

#### isOK

Checks if the dialog was accepted or cancelled.

|  |  |
| --- | --- |
| Attribute | Value |
| Modifiers | - |
| Overrides | - |
| Throws | - |

**Inputs**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| - | - | - |

**Outputs**

|  |  |
| --- | --- |
| Type | Description |
| boolean | True if ok was pressed, otherwise false |

# Resource Requirements

None.

# Test Plan

There will be no formal package level testing. Each class will be unit tested and then the entire system will undergo system level testing.

# Scenarios

## Game Initiation

Shows the process that creates views. DraughtsGame is responsible for constructing the controller and the views. It then adds the views to the controller.



## User Interaction

The following diagram details the calls made to the controller when different UI elements are used.



## Event handling

All events received by the controller are passed using modelPropertyChange.



# Supporting Documentation

None.

**- End of Document -**