

BME Guesser: Programozói dokumentáció

Házi feladat a programozás alapjai 3. tárgyra.

Készítette: Funk Gábor (2025.11.22.)

A program fő céljának ismertetése

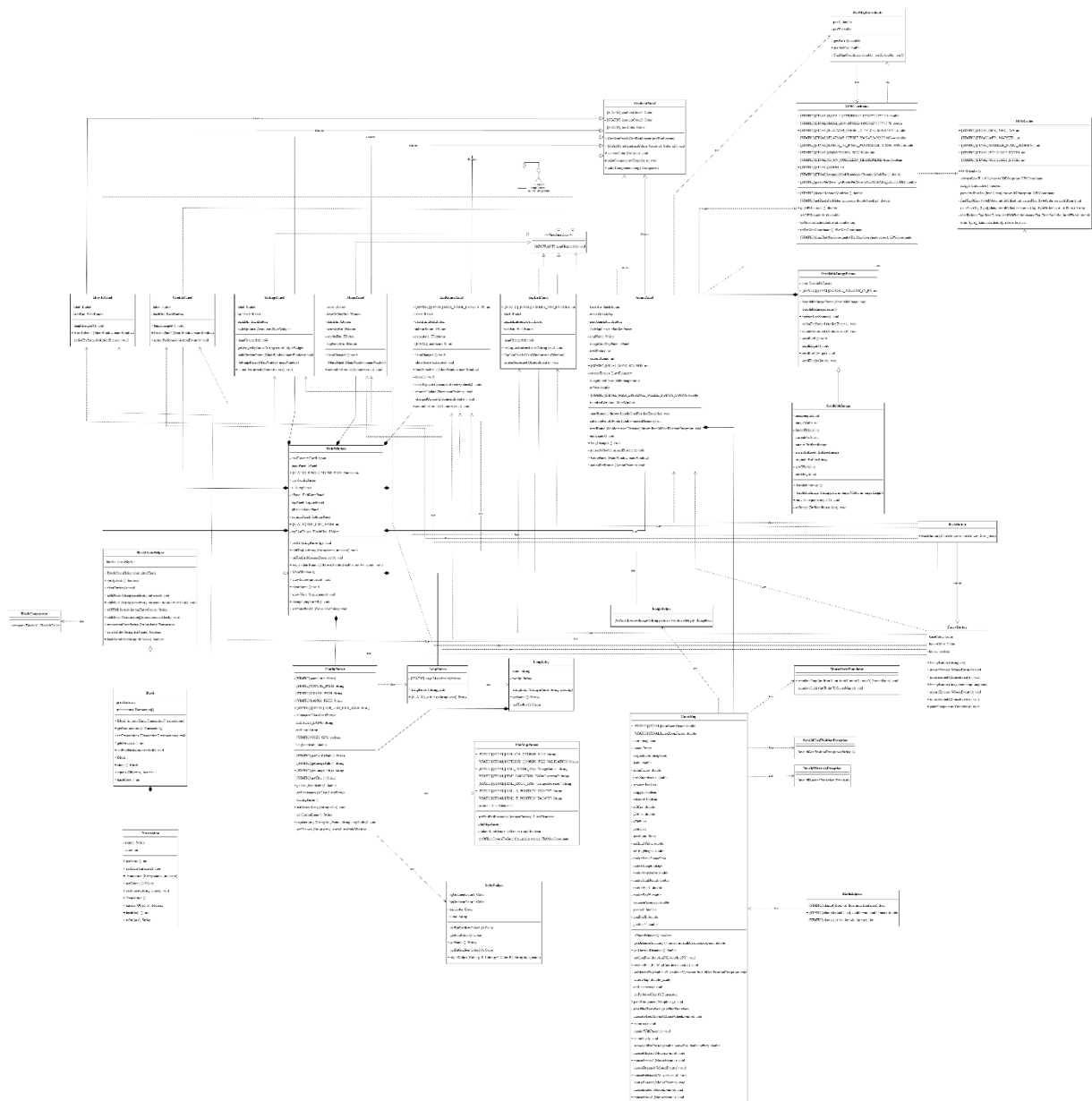
A BMEGuesser egy GEOGuesser klón, ami 5 körből álló játszmákat biztosít a végfelhasználónak ilyen formában: A felhasználó kap egy panoráma képet, amin körül tud nézni. A panoráma kép melletti térképre kattintva meg tudja „tippelni”, hogy az adott képet hol készítették. A tipp pontosságától függően kap 0-tól 100-ig pontokat. Egy kör maximum 500 pontos lehet. A felhasználó képes elmenteni (magát a toplistában) és betölteni a toplistát.

A program a java Swing könyvtárát, SaxBuilder-t XML IO-ra és JUnit-ot használ Java 17-en, ezen felül semmi külső könyvtár nem kerül használatla. A stílusokat és a GPS koordináta beolvasás EXIF-ből is én valósítottam meg.

A program a Gradle build systemet használja és egy FatJar-t állít elő, melybe belerakja az összes dependency-t (JUnit)

A doxygen leírás és metódusok dokumentálása a bevezetés után található.

Osztálydiagram



Az elkészített osztálydiagram mérete miatt nem igazán előnyös a PDF-be tárolása a nehéz olvashatóság miatt. Ehhez készítettem egy külső elérési linket hozzá:

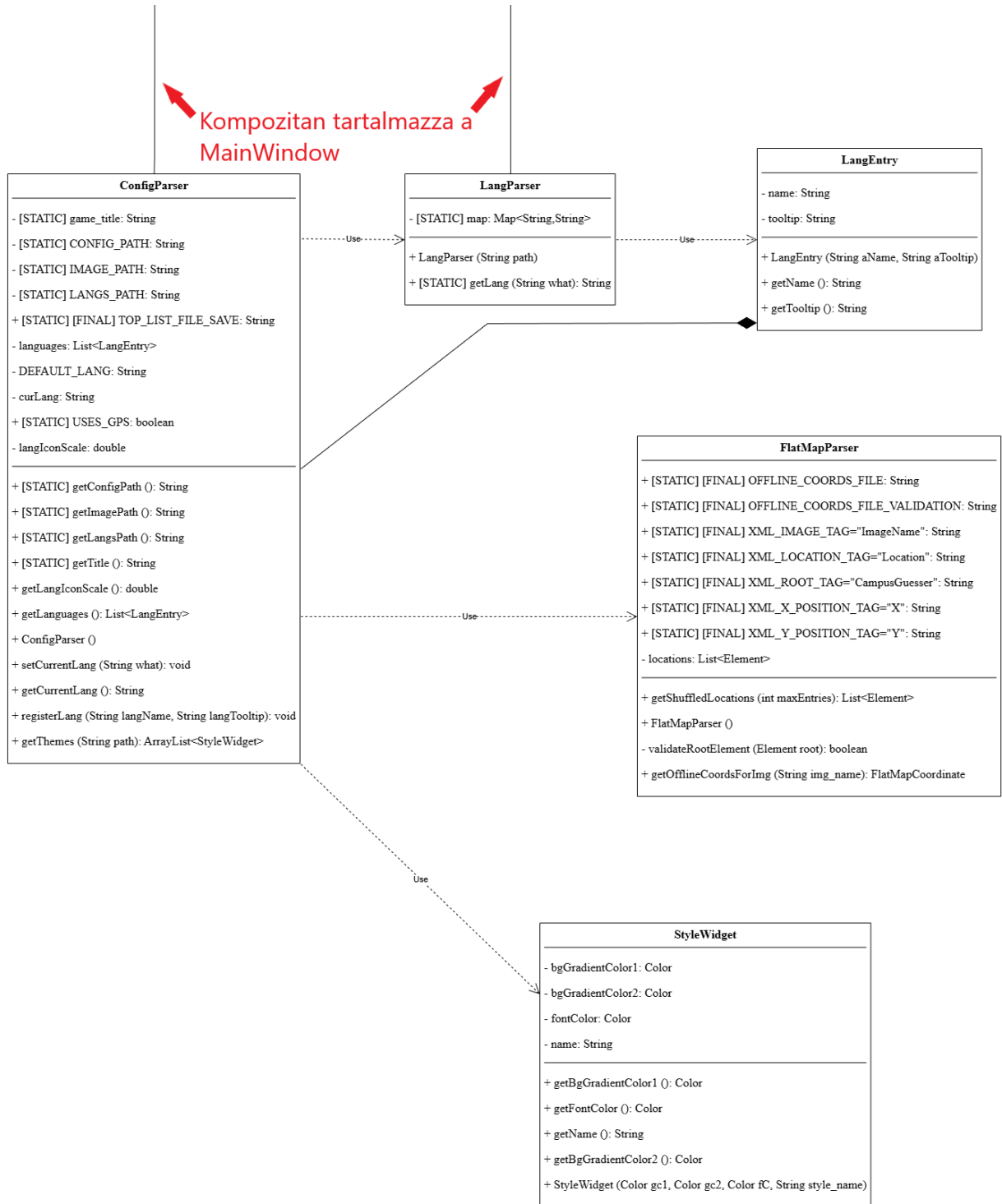
<https://bugfr.ee/nhf3.html>

Az UML diagramot egészbe nem tudtam berakni 1 PDF-be, viszont kigeneráltattam a Doxygennel minden osztályhoz tartozó „lokális” osztálydiagramot. (Miből származik lesz, use case)

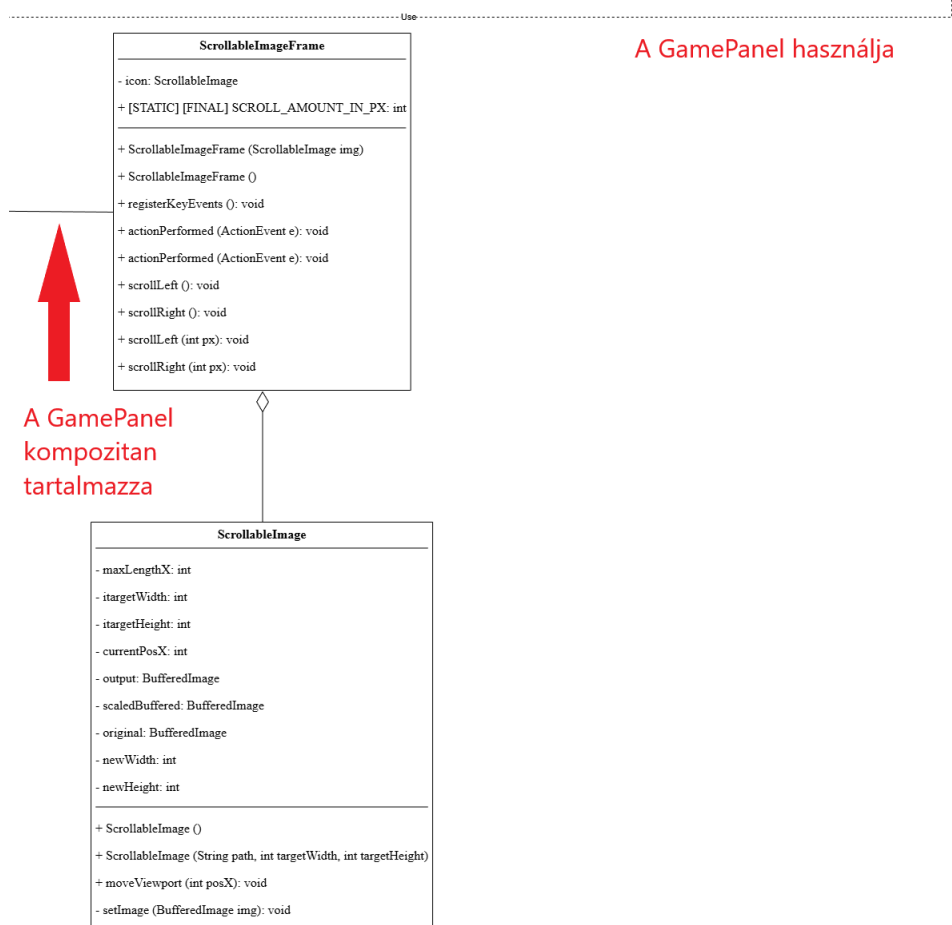
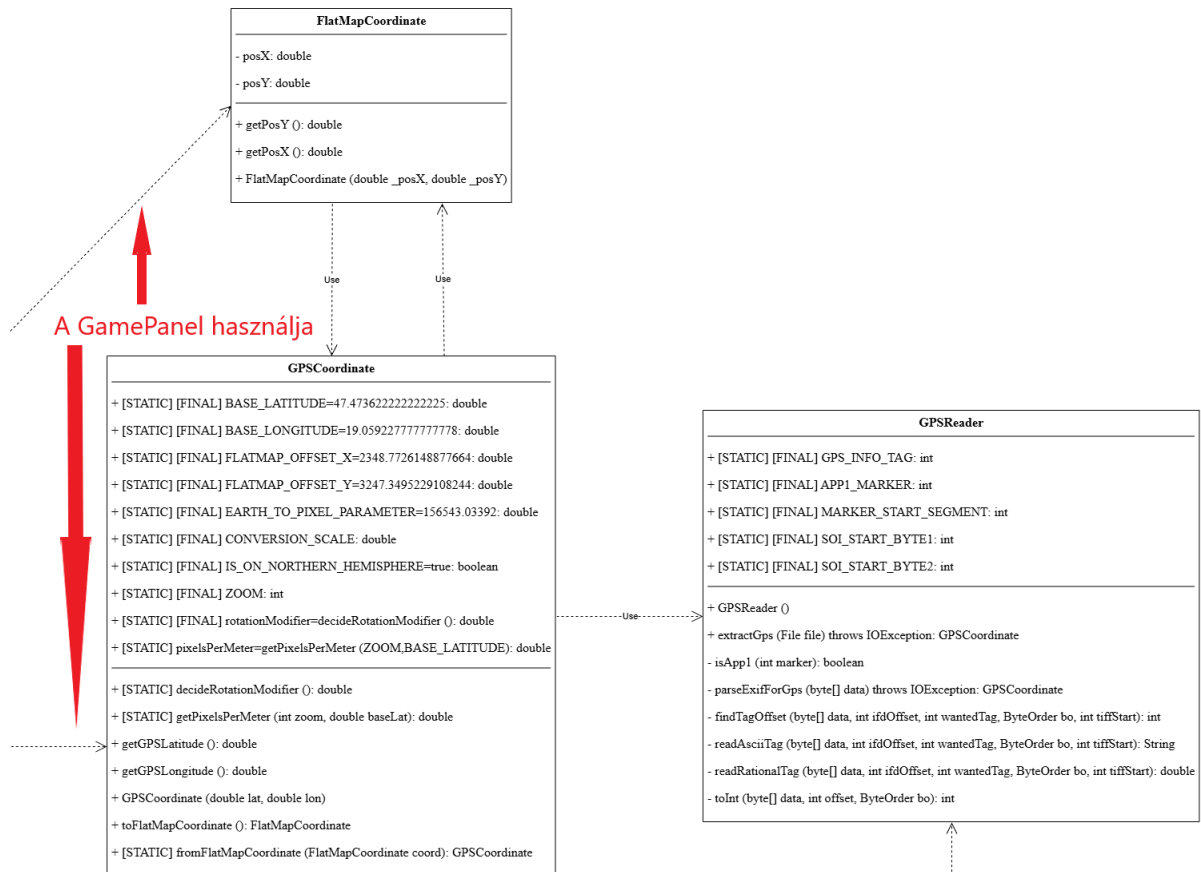
Amennyiben szükséges, itt látható a feldarabolt osztály diagram:

Fontos megjegyezni, hogy olykor a diagram egyszerűsítve van az átláthatóságért, és **nincsenek a felesleges / nem ottani kontextusba levő relációk / referenciák.**

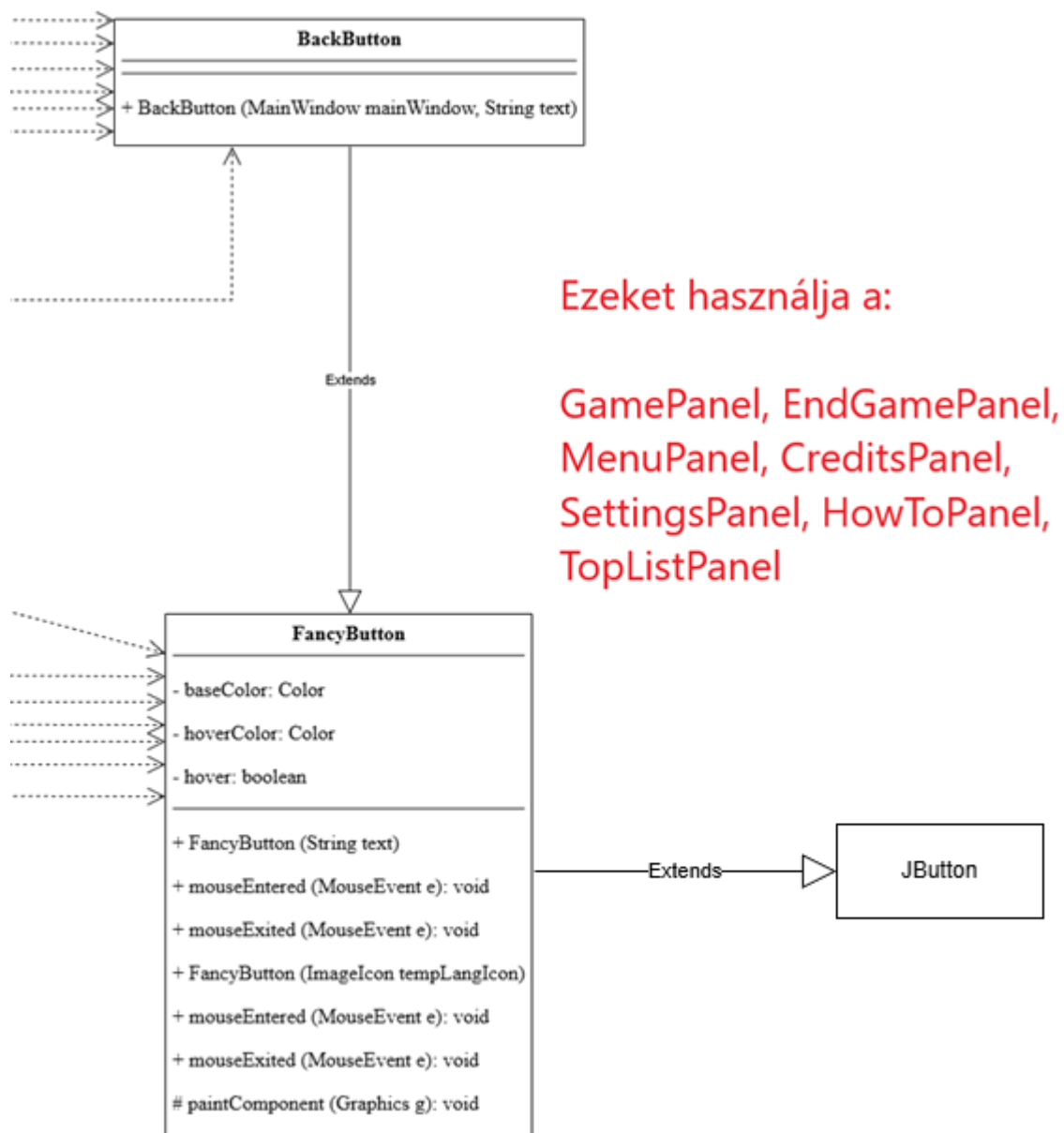
A Blockchain osztályok relációja:



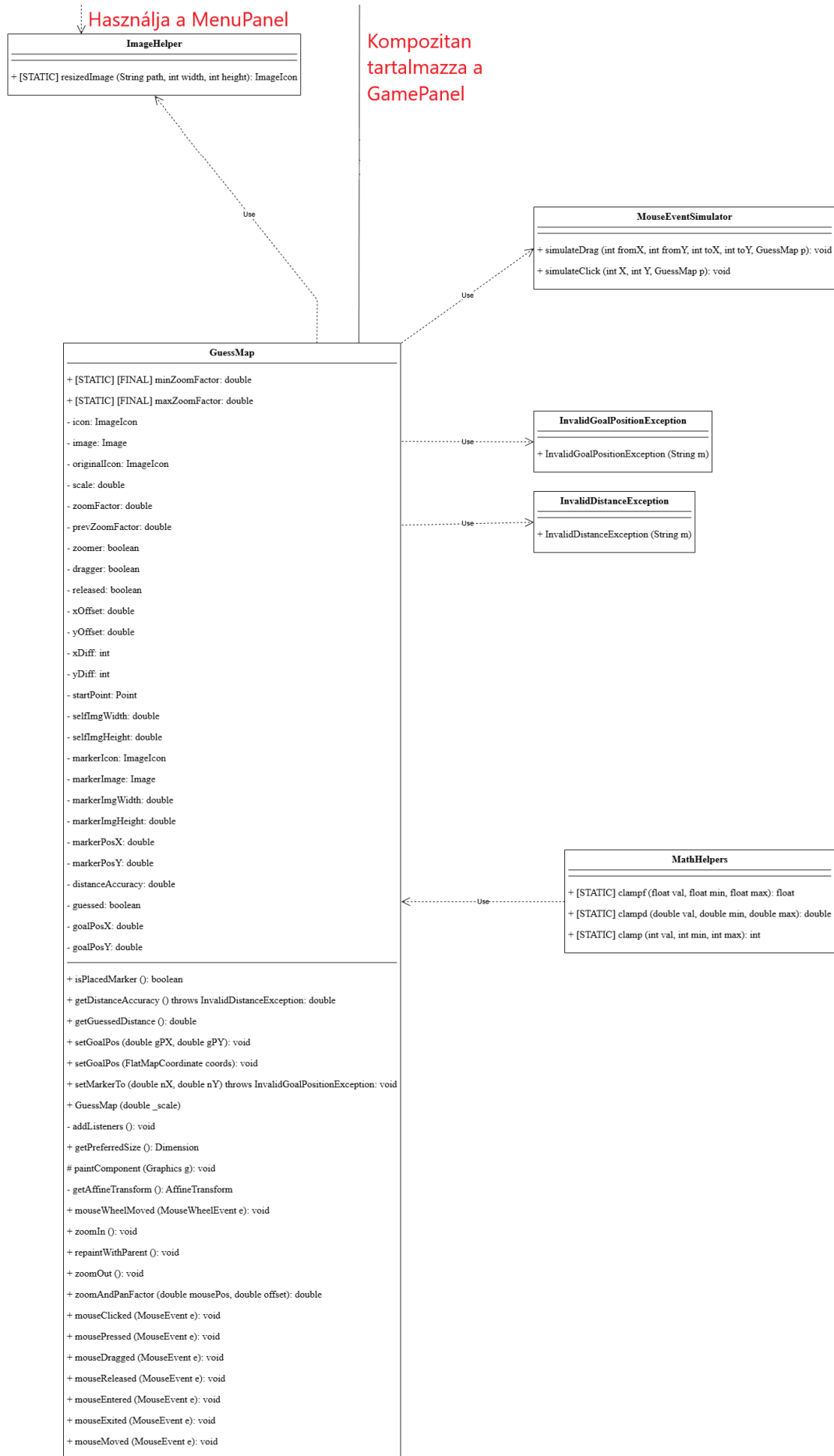
A GPS és scrollable image osztályok relációja:



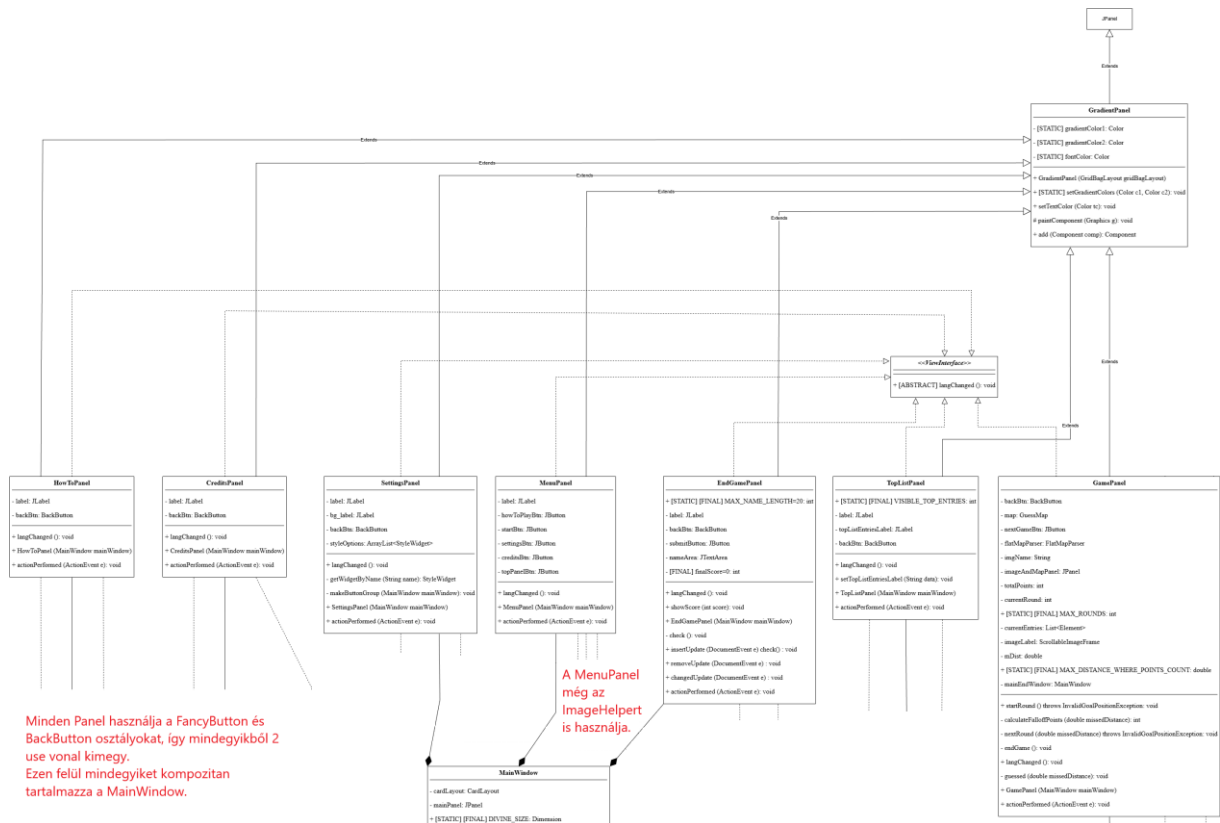
A leszármozott gomb osztályaim relációja:



A GuessMap és használt osztályai relációja:



A panelek relációja: (Leegyszerűsítve)



Illetve készítettem egy UML kigenerálót kódból, ezzel kigeneráltam az összes osztályomnak a részletesebb UML-jét: <https://afghangoat.hu/adatb/UMLgen.html>

Fájlkezelés

Kép adatokon kívül a program dolgozik még XML és PRIVATE fájlokon.

(A PRIVATE fájl egy speciális fájlformátum, ami base64 elkódolva tárol egy blockchain-t, ahol a blokkok a nevet és pontszámokat tárolnak)

Koordináta kezelés

Eredetileg úgy szerettem volna megcsinálni, hogy a képek EXIF GPS koordinátáját használja a program. Ennek implementációja ugyan bent van a programban és egy konfigurációs lehetőséggel előhozható, de elsődlegesen nem ez van használva, hanem egy úgynevezett „FlatMapCoordinate” rendszer, aminek az a lényege, hogy a betöltött térképen egy X,Y pixel párt tárol el minden képhez egy külön konfigurációs fájlban.

Azért nem GPS-t használok elsődlegesen, mert a telefon fényképezéskor nagyon hibás GPS koordinátákat rak be melyek olykor akár 200 méterrel is eltérhetnek.

Az is fontos, hogy a lefordított jar MELLETT legyen a „config” könyvtár, amely minden másik fájlt tartalmaz, ami kell a program futásához.

Képek tárolása

Minden kép a config/images-ben kell, hogy legyen. Ezen belül is JPG formátumban, ez azért fontos, mert a GPS mód bekapcsolásakor más formátumban nem garantált, hogy az EXIF információ kiolvasható.

A képek lehetnek panoráma vagy sima képek, a program mindkettőre fel lett készítve.

A képekhez a FlatMap koordináták a config/offline_coords.xml fájlban tárolandók.

Ennek a fájlnak be kell tartania a config/offline_coords_schema.xml-ben meghatározott sémát.

Top lista fájl

A top lista fájl a config könyvtárba van tárolva top_list.PRIVATE-ként.

Kézzel való módosítása nem ajánlott.

Témák

A témák a config/styles.xml fájl-ban találhatóak.

Egy témának így kell kinéznie:

```
<entry key="OG">
  <background_gradient_1>
    <r>204</r>
    <g>0</g>
    <b>0</b>
  </background_gradient_1>
  <background_gradient_2>
    <r>255</r>
    <g>180</g>
    <b>180</b>
  </background_gradient_2>
  <font_color>
    <r>0</r>
    <g>0</g>
    <b>0</b>
  </font_color>
</entry>
```

Minden témának meg kell specifikálni a háttér linear-gradient 2 színét valamint azt, hogy a betű szín milyen legyen. Ehhez RGB formátumot vár el a program. A téma kulcsa a neve.

Nyelvek

A nyelveket jelezni kell a config/config.xml fájlban. Innen tudja a program, hogy milyen nyelvek vannak.

A nyelvek további beállításait a config/langs könyvtárban kell megcsinálni ilyen módon:

- Kell egy <nyelv>.png, ami az adott nyelv zászlaja.
- Kell egy <nyelv>.lang, amiben meg lehet adni, hogy a program szövegeit mivé fordítsa le az adott nyelven.

A lang fájlok XML formában vannak. Egy ilyen fájl tartalmára példa:

```
<?xml version="1.0" encoding="UTF-8"?>
<lang_config>
  ...
  <entry key="TITLE">UNIGuesser</entry>
  ...
</lang_config>
```

Franchise-osítás

Lehetővé tettem, hogy a program 100%-ban adoptálható legyen másik egyetemek által is. Minden konfigurálható, a név, a nyelv, cím, kép.

Online pálya szerkesztő

Ha egy másik egyetem egy saját térképet akar berakni akkor megteheti ezt úgy, hogy használja az online szerkesztőt, és így meg tud adni minden képnek kattintással egy pozíciót.

Ezt itt lehet elérni: <https://afghangoat.hu/uniguesser-creator/index.html>

Fontos, hogy a felhasználó állítsa is be a saját térképét a config/uni_map.png útvonalra.

Borító kép

A főmenü a config/icon.png-t fogja megjeleníteni.

Doxygen leírás

BMEGuesser (vagy UNIGuesser) (Készítette: Funk Gábor)

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8.6 src/main/java/hu/afghangoat/exceptions/InvalidDistanceException.java File Reference	120
8.7 src/main/java/hu/afghangoat/exceptions/InvalidGoalPositionException.java File Reference	120
8.8 src/main/java/hu/afghangoat/helpers/FlatMapCoordinate.java File Reference	121
8.9 src/main/java/hu/afghangoat/helpers/FlatMapParser.java File Reference	121
8.10 src/main/java/hu/afghangoat/helpers/GPSCoordinate.java File Reference	121
8.11 src/main/java/hu/afghangoat/helpers/GPSReader.java File Reference	122
8.12 src/main/java/hu/afghangoat/helpers/ImageHelper.java File Reference	122
8.13 src/main/java/hu/afghangoat/helpers/MathHelpers.java File Reference	122
8.14 src/main/java/hu/afghangoat/LangEntry.java File Reference	122
8.15 src/main/java/hu/afghangoat/LangParser.java File Reference	123
8.16 src/main/java/hu/afghangoat/Main.java File Reference	123
8.17 src/main/java/hu/afghangoat/simulators/MouseEventSimulator.java File Reference	123
8.18 src/main/java/hu/afghangoat/views/CreditsPanel.java File Reference	123
8.19 src/main/java/hu/afghangoat/views/EndGamePanel.java File Reference	123
8.20 src/main/java/hu/afghangoat/views/GamePanel.java File Reference	124
8.21 src/main/java/hu/afghangoat/views/HowToPanel.java File Reference	124
8.22 src/main/java/hu/afghangoat/views/MainWindow.java File Reference	124
8.23 src/main/java/hu/afghangoat/views/MenuPanel.java File Reference	124
8.24 src/main/java/hu/afghangoat/views/SettingsPanel.java File Reference	125
8.25 src/main/java/hu/afghangoat/views/TopListPanel.java File Reference	125
8.26 src/main/java/hu/afghangoat/views/ViewInterface.java File Reference	125
8.27 src/main/java/hu/afghangoat/widgets/BackButton.java File Reference	126
8.28 src/main/java/hu/afghangoat/widgets/FancyButton.java File Reference	126
8.29 src/main/java/hu/afghangoat/widgets/GradientPanel.java File Reference	126
8.30 src/main/java/hu/afghangoat/widgets/GuessMap.java File Reference	126
8.31 src/main/java/hu/afghangoat/widgets/ScrollableImage.java File Reference	127
8.32 src/main/java/hu/afghangoat/widgets/ScrollableImageFrame.java File Reference	127
8.33 src/main/java/hu/afghangoat/widgets/StyleWidget.java File Reference	127
8.34 src/test/java/BlockChainTest.java File Reference	128
8.35 src/test/java/CoordinatesTest.java File Reference	128
8.36 src/test/java/WidgetsTest.java File Reference	128

Chapter 1

Deprecated List

Member [hu.afghangoat.views.CreditsPanel.actionPerformed](#) (ActionEvent e)

Moved logic to the constructor.

Member [hu.afghangoat.views.EndGamePanel.actionPerformed](#) (ActionEvent e)

Moved logic to the constructor.

Member [hu.afghangoat.views.GamePanel.actionPerformed](#) (ActionEvent e)

Moved logic to the constructor.

Member [hu.afghangoat.views.HowToPanel.actionPerformed](#) (ActionEvent e)

Moved logic to the constructor.

Member [hu.afghangoat.views.MenuPanel.actionPerformed](#) (ActionEvent e)

Moved logic to the constructor.

Member [hu.afghangoat.views.SettingsPanel.actionPerformed](#) (ActionEvent e)

Moved logic to the constructor.

Member [hu.afghangoat.views.TopListPanel.actionPerformed](#) (ActionEvent e)

Moved logic to the constructor.

Chapter 2

Namespace Index

2.1 Namespace List

Here is a list of all namespaces with brief descriptions:

hu.afghangoat.blockchain	11
hu.afghangoat.exceptions	11
hu.afghangoat.helpers	11
hu.afghangoat.simulators	12
hu.afghangoat.views	12
hu.afghangoat.widgets	12

Chapter 3

Hierarchical Index

3.1 Class Hierarchy

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

hu.afghangoat.blockchain.Block	15
hu.afghangoat.blockchain.BlockChainHelper	19
BlockChainTest	26
hu.afghangoat.ConfigParser	28
CoordinatesTest	34
Exception	
hu.afghangoat.exceptions.InvalidDistanceException	78
hu.afghangoat.exceptions.InvalidGoalPositionException	80
hu.afghangoat.helpers.FlatMapCoordinate	43
hu.afghangoat.helpers.FlatMapParser	45
hu.afghangoat.helpers.GPSCoordinate	52
hu.afghangoat.helpers.GPSReader	58
hu.afghangoat.helpers.ImageHelper	77
ImageIcon	
hu.afghangoat.widgets.ScrollableImage	97
JButton	
hu.afghangoat.widgets.FancyButton	41
hu.afghangoat.widgets.BackButton	13
JFrame	
hu.afghangoat.views.MainWindow	84
JLabel	
hu.afghangoat.widgets.GuessMap	63
hu.afghangoat.widgets.ScrollableImageFrame	100
JPanel	
hu.afghangoat.widgets.GradientPanel	60
hu.afghangoat.views.CreditsPanel	35
hu.afghangoat.views.EndGamePanel	37
hu.afghangoat.views.GamePanel	49
hu.afghangoat.views.HowToPanel	75
hu.afghangoat.views.MenuPanel	94
hu.afghangoat.views.SettingsPanel	105
hu.afghangoat.views.TopListPanel	109
hu.afghangoat.LangEntry	81
hu.afghangoat.LangParser	82
hu.afghangoat.Main	84

hu.afghangoat.helpers.MathHelpers	91
hu.afghangoat.simulators.MouseEventSimulator	96
MouseListener	
hu.afghangoat.widgets.GuessMap	63
MouseMotionListener	
hu.afghangoat.widgets.GuessMap	63
MouseWheelListener	
hu.afghangoat.widgets.GuessMap	63
hu.afghangoat.widgets.StyleWidget	107
hu.afghangoat.blockchain.Transaction	112
hu.afghangoat.views.ViewInterface	116
hu.afghangoat.views.CreditsPanel	35
hu.afghangoat.views.EndGamePanel	37
hu.afghangoat.views.GamePanel	49
hu.afghangoat.views.HowToPanel	75
hu.afghangoat.views.MenuPanel	94
hu.afghangoat.views.SettingsPanel	105
hu.afghangoat.views.TopListPanel	109
WidgetsTest	117
ActionListener	
hu.afghangoat.views.CreditsPanel	35
hu.afghangoat.views.EndGamePanel	37
hu.afghangoat.views.GamePanel	49
hu.afghangoat.views.HowToPanel	75
hu.afghangoat.views.MenuPanel	94
hu.afghangoat.views.SettingsPanel	105
hu.afghangoat.views.TopListPanel	109
Comparator	
hu.afghangoat.blockchain.BlockComparator	26

Chapter 4

Class Index

4.1 Class List

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

hu.afghangoat.widgets.BackButton	
A button which's sole goal is to take the user back to the main menu	13
hu.afghangoat.blockchain.Block	
A single block contains some amount of transactions	15
hu.afghangoat.blockchain.BlockChainHelper	
An instantiable helper class which can load the encrypted blockchain files	19
BlockChainTest	26
hu.afghangoat.blockchain.BlockComparator	
A helper comparator which can compare blockchain blocks based on their leading transaction scores	26
hu.afghangoat.ConfigParser	
A utility class for getting the right paths for all sorts of configs like images and language settings	28
CoordinatesTest	34
hu.afghangoat.views.CreditsPanel	
The panel class which is supposed to show the users who worked on the project	35
hu.afghangoat.views.EndGamePanel	
The panel which shows the final game UI	37
hu.afghangoat.widgets.FancyButton	
A button which has a gradient background and theme-wise	41
hu.afghangoat.helpers.FlatMapCoordinate	
A data structure which holds the coordinate based on its location on the 2d flattened map . . .	43
hu.afghangoat.helpers.FlatMapParser	
A utility class which allows to parse FlatMap coordinates from designated XML config files . . .	45
hu.afghangoat.views.GamePanel	
The panel which commences the main game logic	49
hu.afghangoat.helpers.GPSCoordinate	
A data structure which holds GPS longitude and latitude pairs	52
hu.afghangoat.helpers.GPSReader	
A utility class which is able to extract GPS coordinates from JPEG images	58
hu.afghangoat.widgets.GradientPanel	
A Swing panel class which can have a theme-wise gradient background	60
hu.afghangoat.widgets.GuessMap	
A Swing component that displays an interactive map for guessing locations	63
hu.afghangoat.views.HowToPanel	
The panel provides a standard description about the game as well as how to play it	75

hu.afghangoat.helpers.ImageHelper	
A utility class which helps in the resizing of Swing specific images	77
hu.afghangoat.exceptions.InvalidDistanceException	
An exception which will be thrown when the guessed distance is a negative number or some invalid number	78
hu.afghangoat.exceptions.InvalidGoalPositionException	80
hu.afghangoat.LangEntry	
A data structure which represents a language with its name and a corresponding ID	81
hu.afghangoat.LangParser	
The component responsible for loading and parsing the given languages from an XML format	82
hu.afghangoat.Main	84
hu.afghangoat.views.MainWindow	
Handles the view switching logic between the games	84
hu.afghangoat.helpers.MathHelpers	
Utility class providing mathematical helper functions	91
hu.afghangoat.views.MenuPanel	
The panel provides a main menu interface for the user where the user can select the subpanel for visiting	94
hu.afghangoat.simulators.MouseEventSimulator	
A utility class which helps in simulation user mouse clicks	96
hu.afghangoat.widgets.ScrollableImage	
A scrollable image which can be used to render a panorama image	97
hu.afghangoat.widgets.ScrollableImageFrame	
A scrollable image holder which commands the scrolling and the offsetting of the held image	100
hu.afghangoat.views.SettingsPanel	
The panel provides UI interface for the visual and game settings	105
hu.afghangoat.widgets.StyleWidget	
Holds information about a single theme	107
hu.afghangoat.views.TopListPanel	
Displays those who earned the most score in the game	109
hu.afghangoat.blockchain.Transaction	
A transaction stores a top list entry, which consists from a score and a source name	112
hu.afghangoat.views.ViewInterface	
An interface for views	116
WidgetsTest	117

Chapter 5

File Index

5.1 File List

Here is a list of all files with brief descriptions:

src/main/java/hu/afghangoat/ConfigParser.java	120
src/main/java/hu/afghangoat/LangEntry.java	122
src/main/java/hu/afghangoat/LangParser.java	123
src/main/java/hu/afghangoat/Main.java	123
src/main/java/hu/afghangoat/blockchain/Block.java	119
src/main/java/hu/afghangoat/blockchain/BlockChainHelper.java	119
src/main/java/hu/afghangoat/blockchain/BlockComparator.java	119
src/main/java/hu/afghangoat/blockchain/Transaction.java	120
src/main/java/hu/afghangoat/exceptions/InvalidDistanceException.java	120
src/main/java/hu/afghangoat/exceptions/InvalidGoalPositionException.java	120
src/main/java/hu/afghangoat/helpers/FlatMapCoordinate.java	121
src/main/java/hu/afghangoat/helpers/FlatMapParser.java	121
src/main/java/hu/afghangoat/helpers/GPSCoordinate.java	121
src/main/java/hu/afghangoat/helpers/GPSReader.java	122
src/main/java/hu/afghangoat/helpers/ImageHelper.java	122
src/main/java/hu/afghangoat/helpers/MathHelpers.java	122
src/main/java/hu/afghangoat/simulators/MouseEventSimulator.java	123
src/main/java/hu/afghangoat/views/CreditsPanel.java	123
src/main/java/hu/afghangoat/views/EndGamePanel.java	123
src/main/java/hu/afghangoat/views/GamePanel.java	124
src/main/java/hu/afghangoat/views/HowToPanel.java	124
src/main/java/hu/afghangoat/views/MainWindow.java	124
src/main/java/hu/afghangoat/views/MenuPanel.java	124
src/main/java/hu/afghangoat/views/SettingsPanel.java	125
src/main/java/hu/afghangoat/views/TopListPanel.java	125
src/main/java/hu/afghangoat/views/ViewInterface.java	125
src/main/java/hu/afghangoat/widgets/BackButton.java	126
src/main/java/hu/afghangoat/widgets/FancyButton.java	126
src/main/java/hu/afghangoat/widgets/GradientPanel.java	126
src/main/java/hu/afghangoat/widgets/GuessMap.java	126
src/main/java/hu/afghangoat/widgets/ScrollableImage.java	127
src/main/java/hu/afghangoat/widgets/ScrollableImageFrame.java	127
src/main/java/hu/afghangoat/widgets/StyleWidget.java	127
src/test/java/BlockChainTest.java	128
src/test/java/CoordinatesTest.java	128
src/test/java/WidgetsTest.java	128

Chapter 6

Namespace Documentation

6.1 Package hu.afghangoat.blockchain

Classes

- class [Block](#)
A single block contains some amount of transactions.
- class [BlockChainHelper](#)
An instantiable helper class which can load the encrypted blockchain files.
- class [BlockComparator](#)
A helper comparator which can compare blockchain blocks based on their leading transaction scores.
- class [Transaction](#)
A transaction stores a top list entry, which consists from a score and a source name.

6.2 Package hu.afghangoat.exceptions

Classes

- class [InvalidDistanceException](#)
An exception which will be thrown when the guessed distance is a negative number or some invalid number.
- class [InvalidGoalPositionException](#)

6.3 Package hu.afghangoat.helpers

Classes

- class [FlatMapCoordinate](#)
A data structure which holds the coordinate based on its location on the 2d flattened map.
- class [FlatMapParser](#)
A utility class which allows to parse FlatMap coordinates from designated XML config files.
- class [GPSCoordinate](#)
A data structure which holds GPS longitude and latitude pairs.
- class [GPSReader](#)
A utility class which is able to extract GPS coordinates from JPEG images.
- class [ImageHelper](#)
A utility class which helps in the resizing of Swing specific images.
- class [MathHelpers](#)
Utility class providing mathematical helper functions.

6.4 Package hu.afghangoat.simulators

Classes

- class [MouseEventSimulator](#)
A utility class which helps in simulation user mouse clicks.

6.5 Package hu.afghangoat.views

Classes

- class [CreditsPanel](#)
The panel class which is supposed to show the users who worked on the project.
- class [EndGamePanel](#)
The panel which shows the final game UI.
- class [GamePanel](#)
The panel which commences the main game logic.
- class [HowToPanel](#)
The panel provides a standard description about the game as well as how to play it.
- class [MainWindow](#)
Handles the view switching logic between the games.
- class [MenuPanel](#)
The panel provides a main menu interface for the user where the user can select the subpanel for visiting.
- class [SettingsPanel](#)
The panel provides UI interface for the visual and game settings.
- class [TopListPanel](#)
Displays those who earned the most score in the game.
- class [ViewInterface](#)
An interface for views.

6.6 Package hu.afghangoat.widgets

Classes

- class [BackButton](#)
A button which's sole goal is to take the user back to the main menu.
- class [FancyButton](#)
A button which has a gradient background and theme-wise.
- class [GradientPanel](#)
A Swing panel class which can have a theme-wise gradient background.
- class [GuessMap](#)
A Swing component that displays an interactive map for guessing locations.
- class [ScrollableImage](#)
A scrollable image which can be used to render a panorama image.
- class [ScrollableImageFrame](#)
A scrollable image holder which command the scrolling and the offsetting of the held image.
- class [StyleWidget](#)
Holds information about a single theme.

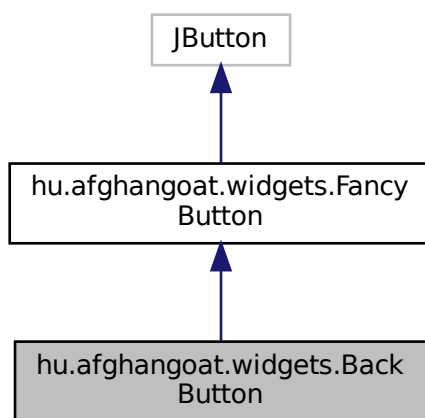
Chapter 7

Class Documentation

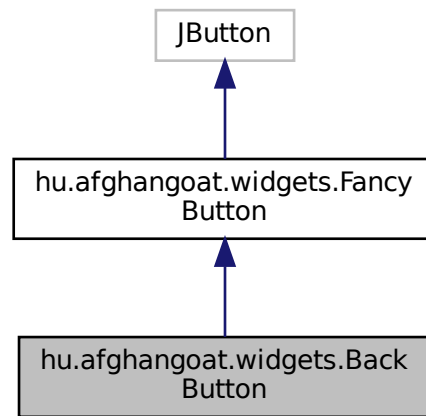
7.1 hu.afghangoat.widgets.BackButton Class Reference

A button which's sole goal is to take the user back to the main menu.

Inheritance diagram for hu.afghangoat.widgets.BackButton:



Collaboration diagram for `hu.afghangoat.widgets.BackButton`:



Public Member Functions

- [BackButton](#) ([MainWindow](#) mainWindow, String text)
Sets the main menu destination on click using the constructor.

Additional Inherited Members

7.1.1 Detailed Description

A button which's sole goal is to take the user back to the main menu.

7.1.2 Constructor & Destructor Documentation

7.1.2.1 BackButton()

```

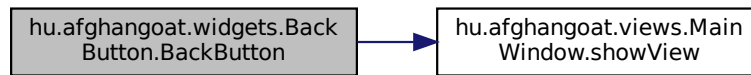
hu.afghangoat.widgets.BackButton.BackButton (
    MainWindow mainWindow,
    String text ) [inline]
  
```

Sets the main menu destination on click using the constructor.

Parameters

<i>mainWindow</i>	The root window of the panel the button is located.
<i>text</i>	The text display of the button.

Here is the call graph for this function:



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

- [src/main/java/hu/afghangoat/widgets/BackButton.java](#)

7.2 hu.afghangoat.blockchain.Block Class Reference

A single block contains some amount of transactions.

Public Member Functions

- [Block](#) (int prevHash, [Transaction](#)[] transactions)
The basic constructor of a block which takes in a previous hash and some transactions.
- [Transaction](#)[] [getTransactions](#) ()
Returns the transactions of the block.
- void [setTransactions](#) ([Transaction](#)[] transactions)
Sets the transactions of the block.
- int [getPrevHash](#) ()
Returns the previous hash of the block.
- void [setPrevHash](#) (int prevHash)
Sets the previous hash based on the previous block.
- [Block clone](#) ()
Returns a cloned instance of the instantiated block.
- boolean [equals](#) (Object o)
A custom equals method which checks if 2 blocks are equal.
- int [hashCode](#) ()
Gets the hash based on the transactions. [Transaction](#) 0 will be always needed for variability.

7.2.1 Detailed Description

A single block contains some amount of transactions.

Needed for the Top List logic

7.2.2 Constructor & Destructor Documentation

7.2.2.1 Block()

```
hu.afghangoat.blockchain.Block.Block (
    int prevHash,
    Transaction[] transactions ) [inline]
```

The basic constructor of a block which takes in a previous hash and some transactions.

Parameters

<i>prevHash</i>	The hash of the previous block.
<i>transactions</i>	The list of the transactions.

7.2.3 Member Function Documentation

7.2.3.1 clone()

```
Block hu.afghangoat.blockchain.Block.clone ( ) [inline]
```

Returns a cloned instance of the instantiated block.

Kinda useless, no block should EVER be cloned.

Returns

The cloned block.

7.2.3.2 equals()

```
boolean hu.afghangoat.blockchain.Block.equals (
    Object o ) [inline]
```

A custom equals method which checks if 2 blocks are equal.

Parameters

<i>o</i>	the object needed for comparison.
----------	-----------------------------------

Returns

whether the instance is equal with the o object.

7.2.3.3 getPrevHash()

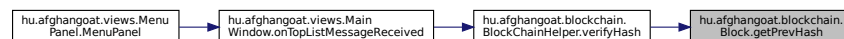
```
int hu.afghangoat.blockchain.Block.getPrevHash ( ) [inline]
```

Returns the previous hash of the block.

Returns

the previous hash of the block.

Here is the caller graph for this function:



7.2.3.4 getTransactions()

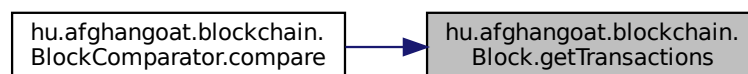
```
Transaction [ ] hu.afghangoat.blockchain.Block.getTransactions ( ) [inline]
```

Returns the transactions of the block.

Returns

the transactions of the block.

Here is the caller graph for this function:



7.2.3.5 hashCode()

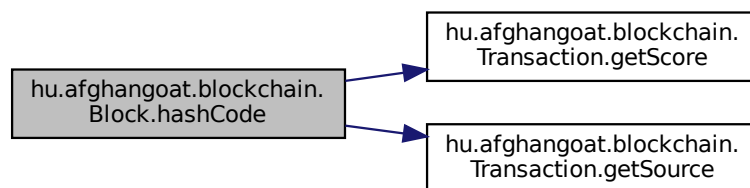
```
int hu.afghangoat.blockchain.Block.hashCode ( ) [inline]
```

Gets the hash based on the transactions. [Transaction](#) 0 will be always needed for variability.

Returns

the hash

Here is the call graph for this function:



Here is the caller graph for this function:



7.2.3.6 setPrevHash()

```
void hu.afghangoat.blockchain.Block.setPrevHash (
    int prevHash ) [inline]
```

Sets the previous hash based on the previous block.

Parameters

<i>prevHash</i>	the previous hash.
-----------------	--------------------

7.2.3.7 setTransactions()

```
void hu.afghangoat.blockchain.Block.setTransactions (
```

```
Transaction[] transactions ) [inline]
```

Sets the transactions of the block.

Parameters

<i>transactions</i>	The new transactions which need to be set.
---------------------	--

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

- src/main/java/hu/afghangoat/blockchain/[Block.java](#)

7.3 hu.afghangoat.blockchain.BlockChainHelper Class Reference

An instantiable helper class which can load the encrypted blockchain files.

Public Member Functions

- [BlockChainHelper](#) (int initialHash)
Initializes the blockchain with a default Genesis block.
- boolean [verifyHash](#) ()
Verifies the inner blockchain by the previous hashes.
- void [clearEntries](#) ()
Clears all blocks except the Genesis block.
- void [addBlock](#) (String nameEntry, int score)
Adds a new block to the blockchain based on a single transaction which has a name and a score entry.
- void [addBlock](#) (String nameEntry, int score, int prevHashCode)
Adds a new block to the blockchain based on a single transaction which has a name and a score entry.
- String [toHTMLSorted](#) (int topEntryCount)
Creates a HTML unordered list element from the blockchain.
- void [addBlock](#) ([Transaction](#)[] transactions, int hash)
Adds a new block to the blockchain based on multiple transactions which has a name and a score entry.
- [Transaction](#) [transactionFromString](#) (String data)
Converts a string to a transaction.
- boolean [saveToFile](#) (String fileName)
Saves the stored blockchain to a supplied filename to the config directory.
- boolean [loadFromFile](#) (String fileName)
Loads and decodes a blockchain store file which stores the top list entries.

7.3.1 Detailed Description

An instantiable helper class which can load the encrypted blockchain files.

Also validates the blockchain.

7.3.2 Constructor & Destructor Documentation

7.3.2.1 BlockChainHelper()

```
hu.afghangoat.blockchain.BlockChainHelper.BlockChainHelper (
    int initialHash ) [inline]
```

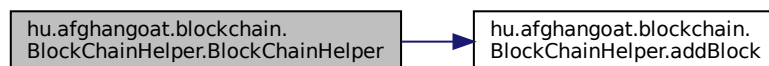
Initializes the blockchain with a default Genesis block.

This will not be shown in the top list.

Parameters

<i>initialHash</i>	The hash of the genesis block.
--------------------	--------------------------------

Here is the call graph for this function:



7.3.3 Member Function Documentation

7.3.3.1 addBlock() [1/3]

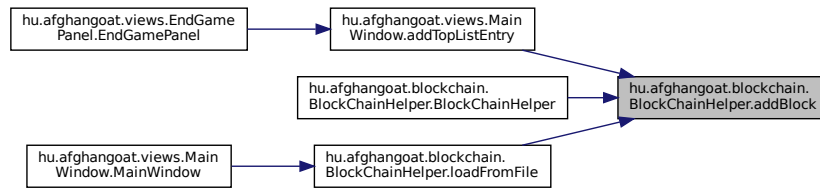
```
void hu.afghangoat.blockchain.BlockChainHelper.addBlock (
    String nameEntry,
    int score ) [inline]
```

Adds a new block to the blockchain based on a single transaction which has a name and a score entry.

Parameters

<i>nameEntry</i>	The name of the submitter.
<i>score</i>	The score of the submitter.

Here is the caller graph for this function:



7.3.3.2 addBlock() [2/3]

```
void hu.afghangoat.blockchain.BlockChainHelper.addBlock (
    String nameEntry,
    int score,
    int prevHashCode ) [inline]
```

Adds a new block to the blockchain based on a single transaction which has a name and a score entry.

Also takes in the previous hash into account.

Parameters

<i>nameEntry</i>	The name of the submitter.
<i>score</i>	The score of the submitter.
<i>prevHashCode</i>	The hash of the previous block.

7.3.3.3 addBlock() [3/3]

```
void hu.afghangoat.blockchain.BlockChainHelper.addBlock (
    Transaction[] transactions,
    int hash ) [inline]
```

Adds a new block to the blockchain based on multiple transactions which has a name and a score entry.

Parameters

<i>transactions</i>	A list of transactions.
<i>hash</i>	The hash of the block.

7.3.3.4 clearEntries()

```
void hu.afghangoat.blockchain.BlockChainHelper.clearEntries ( ) [inline]
```

Clears all blocks except the Genesis block.

This method assumes a genesis block exists. Here is the caller graph for this function:



7.3.3.5 loadFromFile()

```
boolean hu.afghangoat.blockchain.BlockChainHelper.loadFromFile (
    String fileName ) [inline]
```

Loads and decodes a blockchain store file which stores the top list entries.

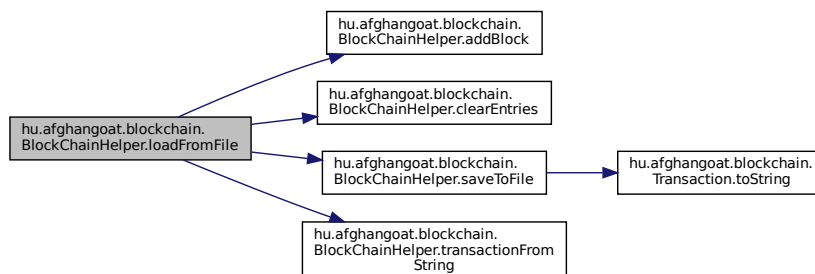
Parameters

<i>fileName</i>	The name of the savefile.
-----------------	---------------------------

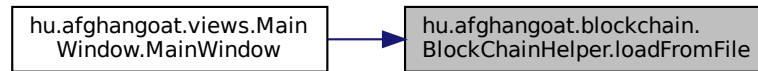
Returns

Whether the IO was successful.

Here is the call graph for this function:



Here is the caller graph for this function:



7.3.3.6 saveToFile()

```
boolean hu.afghangoat.blockchain.BlockChainHelper.saveToFile (
    String fileName ) [inline]
```

Saves the stored blockchain to a supplied filename to the config directory.

Includes the hashes as well as it applies a base64 encoding for a little more security. @implNote The real security lies withing the blockchain integrity. If the integrity is not active, the savefile will be marked as "cheated".

Parameters

<i>fileName</i>	The name of the savefile
-----------------	--------------------------

Returns

Whether the IO was successful.

Here is the call graph for this function:



Here is the caller graph for this function:



7.3.3.7 toHTMLSorted()

```
String hu.afghangoat.blockchain.BlockChainHelper.toHTMLSorted (
    int topEntryCount ) [inline]
```

Creates a HTML unordered list element from the blockchain.

Excludes the Genesis block from the list. It can be configured that only the N-th sublist from the chain should be returned. The list will be ordered by the top scores in descending order.

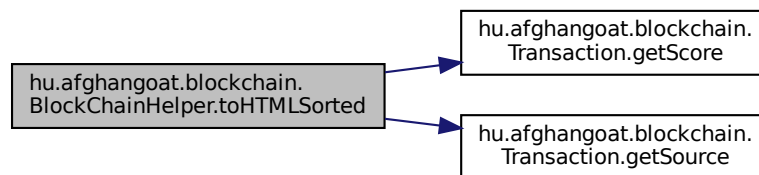
Parameters

<i>topEntryCount</i>	How much entries should be returned from the top list.
----------------------	--

Returns

The unordered HTML element.

Here is the call graph for this function:



Here is the caller graph for this function:



7.3.3.8 transactionFromString()

```
Transaction hu.afghangoat.blockchain.BlockChainHelper.transactionFromString (
    String data ) [inline]
```

Converts a string to a transaction.

Parameters

<i>data</i>	The input string.
-------------	-------------------

Returns

the converted transaction.

Here is the caller graph for this function:



7.3.3.9 verifyHash()

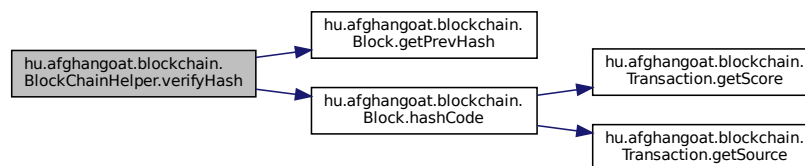
```
boolean hu.afghangoat.blockchain.BlockChainHelper.verifyHash ( ) [inline]
```

Verifies the inner blockchain by the previous hashes.

Returns

whether the integrity of the blockchain is up.

Here is the call graph for this function:



Here is the caller graph for this function:

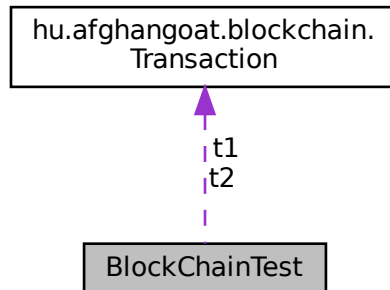


The documentation for this class was generated from the following file:

- `src/main/java/hu/afghangoat/blockchain/BlockChainHelper.java`

7.4 BlockChainTest Class Reference

Collaboration diagram for BlockChainTest:



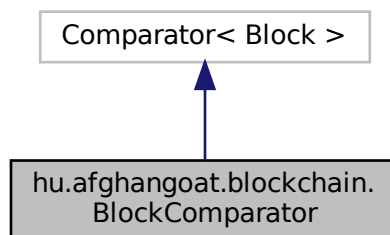
The documentation for this class was generated from the following file:

- `src/test/java/BlockChainTest.java`

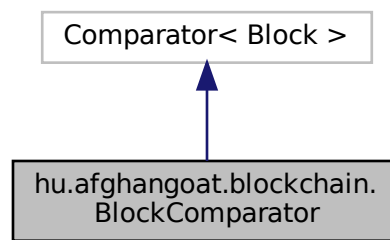
7.5 hu.afghangoat.blockchain.BlockComparator Class Reference

A helper comparator which can compare blockchain blocks based on their leading transaction scores.

Inheritance diagram for `hu.afghangoat.blockchain.BlockComparator`:



Collaboration diagram for hu.afghangoat.blockchain.BlockComparator:



Public Member Functions

- int `compare` (Block b1, Block b2)
Implements the comparator comparable for the [Block](#) comparison.

7.5.1 Detailed Description

A helper comparator which can compare blockchain blocks based on their leading transaction scores.

7.5.2 Member Function Documentation

7.5.2.1 `compare()`

```
int hu.afghangoat.blockchain.BlockComparator.compare (
    Block b1,
    Block b2 ) [inline]
```

Implements the comparator comparable for the [Block](#) comparison.

It works by getting the first score entry from the block's transactions.

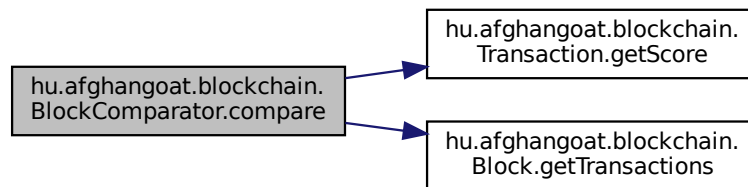
Parameters

<i>b1</i>	The first block.
<i>b1</i>	The second block.

Returns

>0 if the block1 is larger, 0 if they are equal and else 0<

Here is the call graph for this function:



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

- `src/main/java/hu/afghangoat/blockchain/BlockComparator.java`

7.6 hu.afghangoat.ConfigParser Class Reference

A utility class for getting the right paths for all sorts of configs like images and language settings.

Public Member Functions

- double `getLangIconScale ()`
A getter for the language icon scale.
- List< `LangEntry` > `getLanguages ()`
A getter for the array of the languages.
- `ConfigParser ()`
A default constructor which finds and sets the config, image and language paths.
- void `setCurrentLang (String what)`
A setter for the current language.
- String `getCurrentLang ()`
A getter for the current language.
- void `registerLang (String langName, String langTooltip)`
Adds a new language based on the name and an ID.
- ArrayList< `StyleWidget` > `getThemes (String path)`
Returns an array of the themes loaded from a specific file path.

Static Public Member Functions

- static String `getConfigPath ()`
A getter for the config path.
- static String `getImagePath ()`
A getter for the image path.
- static String `getLangsPath ()`
A getter for the languages path.
- static String `getTitle ()`
A getter for the game title path.

Static Public Attributes

- static final String `TOP_LIST_FILE_SAVE` = "top_list.PRIVATE"
The hardcoded name of the top list file.
- static boolean `USES_GPS` = false
Whether the game uses GPS or flatmap coordinates.

7.6.1 Detailed Description

A utility class for getting the right paths for all sorts of configs like images and language settings.

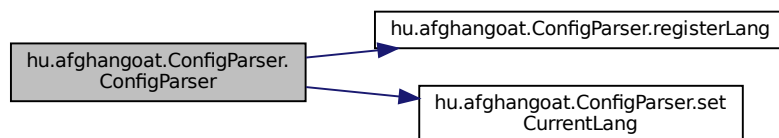
7.6.2 Constructor & Destructor Documentation

7.6.2.1 ConfigParser()

```
hu.afghangoat.ConfigParser.ConfigParser ( ) [inline]
```

A default constructor which finds and sets the config, image and language paths.

Here is the call graph for this function:



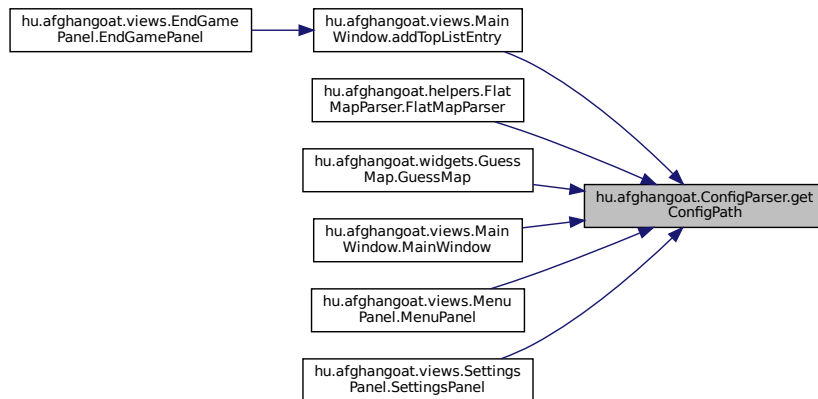
7.6.3 Member Function Documentation

7.6.3.1 getConfigPath()

```
static String hu.afghangoat.ConfigParser.getConfigPath ( ) [inline], [static]
```

A getter for the config path.

Here is the caller graph for this function:



7.6.3.2 getCurrentLang()

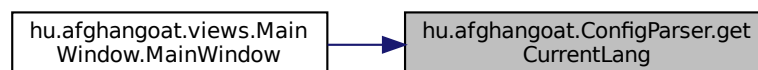
```
String hu.afghangoat.ConfigParser.getCurrentLang ( ) [inline]
```

A getter for the current language.

Returns

The ID of the current language.

Here is the caller graph for this function:



7.6.3.3 getImagePath()

```
static String hu.afghangoat.ConfigParser.getImagePath ( ) [inline], [static]
```

A getter for the image path.

7.6.3.4 getLangIconScale()

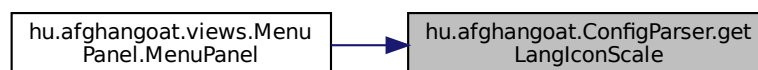
```
double hu.afghangoat.ConfigParser.getLangIconScale ( ) [inline]
```

A getter for the language icon scale.

Returns

The language icon scale in double representation.

Here is the caller graph for this function:

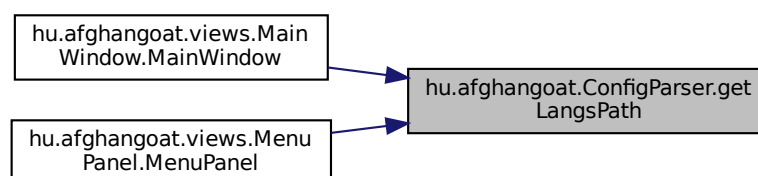


7.6.3.5 getLangsPath()

```
static String hu.afghangoat.ConfigParser.getLangsPath ( ) [inline], [static]
```

A getter for the languages path.

Here is the caller graph for this function:



7.6.3.6 getLanguages()

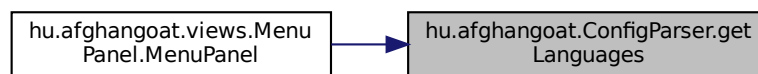
```
List<LangEntry> hu.afghangoat.ConfigParser.getLanguages ( ) [inline]
```

A getter for the array of the languages.

Returns

All the languages in an array.

Here is the caller graph for this function:



7.6.3.7 getThemes()

```
ArrayList<StyleWidget> hu.afghangoat.ConfigParser.getThemes (String path) [inline]
```

Returns an array of the themes loaded from a specific file path.

Parameters

<i>path</i>	The path of the themes XML file.
-------------	----------------------------------

Returns

An array of the themes the file contained.

Here is the caller graph for this function:

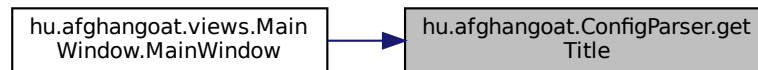


7.6.3.8 getTitle()

```
static String hu.afghangoat.ConfigParser.getTitle ( ) [inline], [static]
```

A getter for the game title path.

Derived from the config. Here is the caller graph for this function:



7.6.3.9 registerLang()

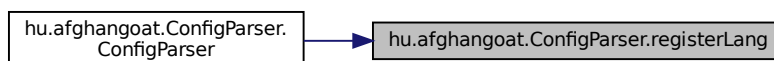
```
void hu.afghangoat.ConfigParser.registerLang (
    String langName,
    String langTooltip ) [inline]
```

Adds a new language based on the name and an ID.

Parameters

<i>langName</i>	The name of the language.
<i>langTooltip</i>	The ID of the language.

Here is the caller graph for this function:



7.6.3.10 setCurrentLang()

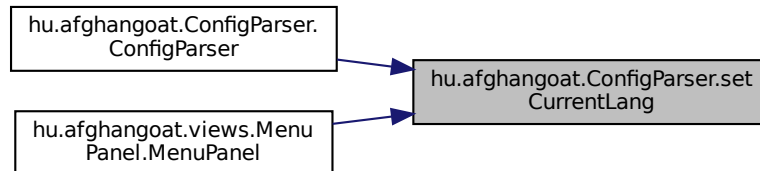
```
void hu.afghangoat.ConfigParser.setCurrentLang (
    String what ) [inline]
```

A setter for the current language.

Parameters

<i>what</i>	The ID of the new language.
-------------	-----------------------------

Here is the caller graph for this function:



7.6.4 Member Data Documentation

7.6.4.1 TOP_LIST_FILE_SAVE

```
final String hu.afghangoat.ConfigParser.TOP_LIST_FILE_SAVE ="top_list.PRIVATE" [static]
```

The hardcoded name of the top list file.

7.6.4.2 USES_GPS

```
boolean hu.afghangoat.ConfigParser.USES_GPS =false [static]
```

Whether the game uses GPS or flatmap coordinates.

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

- [src/main/java/hu/afghangoat/ConfigParser.java](#)

7.7 CoordinatesTest Class Reference

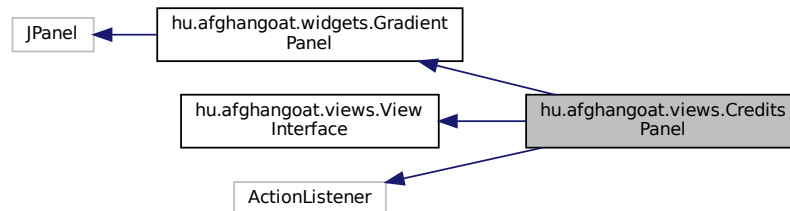
The documentation for this class was generated from the following file:

- [src/test/java/CoordinatesTest.java](#)

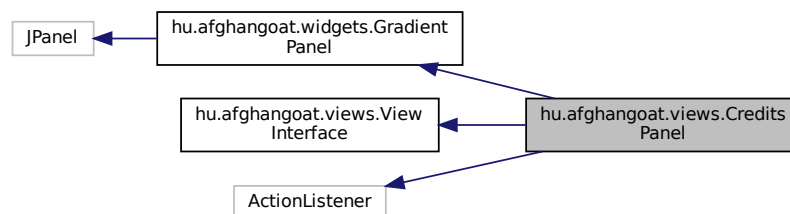
7.8 hu.afghangoat.views.CreditsPanel Class Reference

The panel class which is supposed to show the users who worked on the project.

Inheritance diagram for hu.afghangoat.views.CreditsPanel:



Collaboration diagram for hu.afghangoat.views.CreditsPanel:



Public Member Functions

- void `langChanged` ()
This method handles what should happen when the language is changed.
- `CreditsPanel` (`MainWindow` mainWindow)
This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.
- void `actionPerformed` (`ActionEvent` e)
Empty action listener, needs to be implemented.

Additional Inherited Members

7.8.1 Detailed Description

The panel class which is supposed to show the users who worked on the project.

7.8.2 Constructor & Destructor Documentation

7.8.2.1 CreditsPanel()

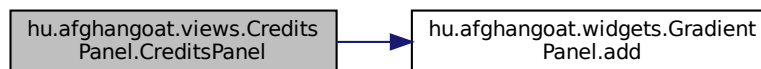
```
hu.afghangoat.views.CreditsPanel.CreditsPanel (
    MainWindow mainWindow ) [inline]
```

This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.

Parameters

<i>mainWindow</i>	The parent window of the panel.
-------------------	---------------------------------

Here is the call graph for this function:



7.8.3 Member Function Documentation

7.8.3.1 actionPerformed()

```
void hu.afghangoat.views.CreditsPanel.actionPerformed (
    ActionEvent e ) [inline]
```

Empty action listener, needs to be implemented.

Parameters

<i>e</i>	The event of the action.
----------	--------------------------

Deprecated Moved logic to the constructor.

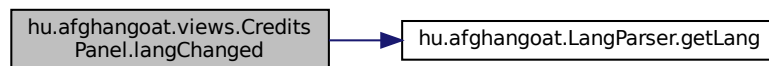
7.8.3.2 langChanged()

```
void hu.afghangoat.views.CreditsPanel.langChanged ( ) [inline]
```

This method handles what should happen when the language is changed.

Reimplemented from [hu.afghangoat.views.ViewInterface](#).

Here is the call graph for this function:



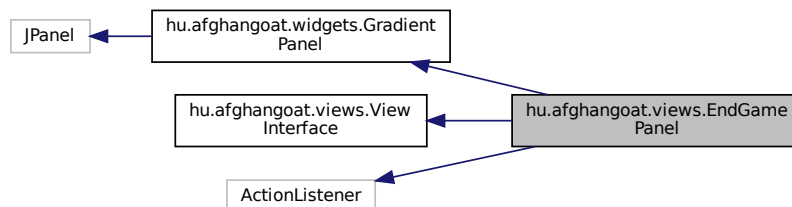
The documentation for this class was generated from the following file:

- `src/main/java/hu/afghangoat/views/CreditsPanel.java`

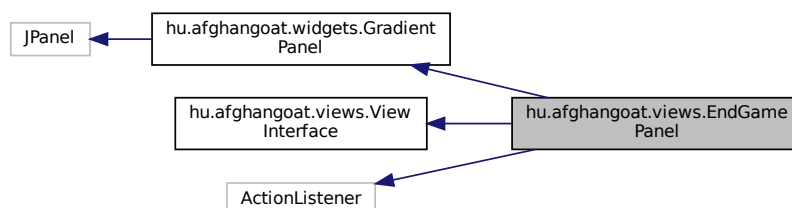
7.9 hu.afghangoat.views.EndGamePanel Class Reference

The panel which shows the final game UI.

Inheritance diagram for `hu.afghangoat.views.EndGamePanel`:



Collaboration diagram for `hu.afghangoat.views.EndGamePanel`:



Public Member Functions

- void `langChanged` ()
This method handles what should happen when the language is changed.
- void `showScore` (int score)
This method appends the score to the body layout of the panel language-wise.
- `EndGamePanel` (`MainWindow` mainWindow)
This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.
- void `actionPerformed` (`ActionEvent` e)
Empty action listener, needs to be implemented.

Static Public Attributes

- static final int `MAX_NAME_LENGTH` =20
This is the de-facto, hardcoded length of a leaderboard name.

Additional Inherited Members

7.9.1 Detailed Description

The panel which shows the final game UI.

Here, if the user was playing cleverly, can input the name which will be used at the leaderboard representation.

7.9.2 Constructor & Destructor Documentation

7.9.2.1 EndGamePanel()

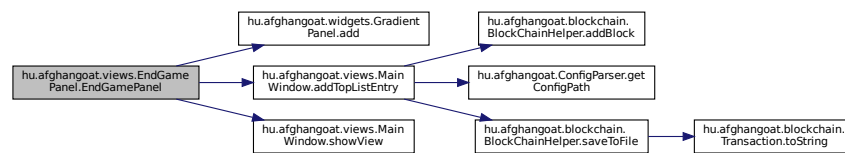
```
hu.afghangoat.views.EndGamePanel.EndGamePanel (  
    MainWindow mainWindow ) [inline]
```

This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.

Parameters

<code>mainWindow</code>	The parent window of the panel.
-------------------------	---------------------------------

Here is the call graph for this function:



7.9.3 Member Function Documentation

7.9.3.1 actionPerformed()

```
void hu.afghangoat.views.EndGamePanel.actionPerformed (
    ActionEvent e ) [inline]
```

Empty action listener, needs to be implemented.

Parameters

<i>e</i>	The event of the action.
----------	--------------------------

Deprecated Moved logic to the constructor.

7.9.3.2 langChanged()

```
void hu.afghangoat.views.EndGamePanel.langChanged ( ) [inline]
```

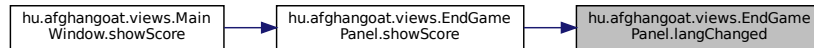
This method handles what should happen when the language is changed.

Reimplemented from [hu.afghangoat.views.ViewInterface](#).

Here is the call graph for this function:



Here is the caller graph for this function:



7.9.3.3 showScore()

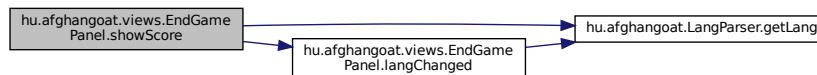
```
void hu.afghangoat.views.EndGamePanel.showScore (
    int score ) [inline]
```

This method appends the score to the body layout of the panel language-wise.

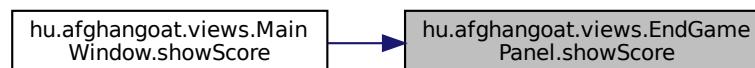
Parameters

<i>score</i>	The score which needs to be shown.
--------------	------------------------------------

Here is the call graph for this function:



Here is the caller graph for this function:



7.9.4 Member Data Documentation

7.9.4.1 MAX_NAME_LENGTH

```
final int hu.afghangoat.views.EndGamePanel.MAX_NAME_LENGTH =20 [static]
```

This is the de-facto, hardcoded length of a leaderboard name.

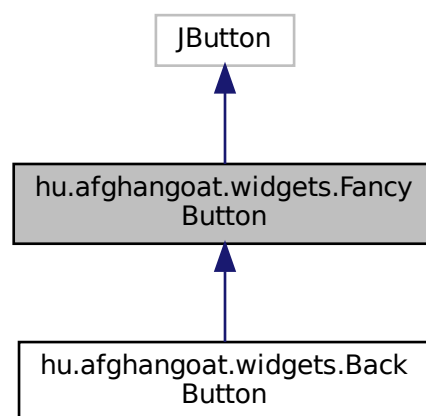
The documentation for this class was generated from the following file:

- [src/main/java/hu/afghangoat/views/EndGamePanel.java](#)

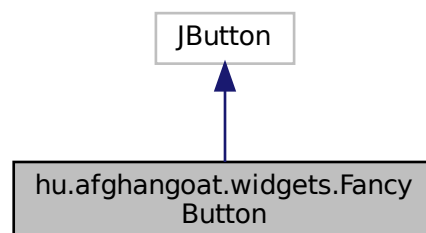
7.10 hu.afghangoat.widgets.FancyButton Class Reference

A button which has a gradient background and theme-wise.

Inheritance diagram for hu.afghangoat.widgets.FancyButton:



Collaboration diagram for hu.afghangoat.widgets.FancyButton:



Public Member Functions

- [FancyButton](#) (String text)
Sets a text for the button in the constructor and sets the styles needed for gradiency.
- [FancyButton](#) (ImageIcon tempLangIcon)
Sets an image icon in the constructor.

Protected Member Functions

- void [paintComponent](#) (Graphics g)
Overrides the paint component and renders the button with the custom specs.

7.10.1 Detailed Description

A button which has a gradient background and theme-wise.

7.10.2 Constructor & Destructor Documentation

7.10.2.1 [FancyButton\(\)](#) [1/2]

```
hu.afghangoat.widgets.FancyButton.FancyButton (
    String text ) [inline]
```

Sets a text for the button in the constructor and sets the styles needed for gradiency.

Parameters

<i>text</i>	The text display of the button.
-------------	---------------------------------

7.10.2.2 [FancyButton\(\)](#) [2/2]

```
hu.afghangoat.widgets.FancyButton.FancyButton (
    ImageIcon tempLangIcon ) [inline]
```

Sets an image icon in the constructor.

Parameters

<i>tempLangIcon</i>	The icon which needs to be set.
---------------------	---------------------------------

7.10.3 Member Function Documentation

7.10.3.1 paintComponent()

```
void hu.afghangoat.widgets.FancyButton.paintComponent (
    Graphics g ) [inline], [protected]
```

Overrides the paint component and renders the button with the custom specs.

Parameters

<i>g</i>	The graphics object which is needed for the rendering.
----------	--

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

- src/main/java/hu/afghangoat/widgets/[FancyButton.java](#)

7.11 hu.afghangoat.helpers.FlatMapCoordinate Class Reference

A data structure which holds the coordinate based on its location on the 2d flattened map.

Public Member Functions

- double [getPosY](#) ()
A getter for the Y component of the position.
- double [getPosX](#) ()
A getter for the X component of the position.
- [FlatMapCoordinate](#) (double _posX, double _posY)
A constructor which takes in 2 double positions and constructs a coordinate from them.

7.11.1 Detailed Description

A data structure which holds the coordinate based on its location on the 2d flattened map.

(Not geo coordinates, flat X,Y coordinate pairs.)

7.11.2 Constructor & Destructor Documentation

7.11.2.1 FlatMapCoordinate()

```
hu.afghangoat.helpers.FlatMapCoordinate.FlatMapCoordinate (
    double _posX,
    double _posY ) [inline]
```

A constructor which takes in 2 double positions and constructs a coordinate from them.

Parameters

<code>_posX</code>	The X component of the to-be-constructed position.
<code>_posY</code>	The Y component of the to-be-constructed position.

7.11.3 Member Function Documentation

7.11.3.1 `getPosX()`

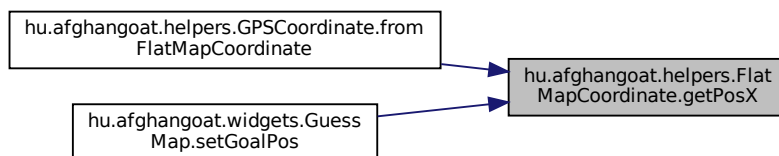
```
double hu.afghangoat.helpers.FlatMapCoordinate.getPosX ( ) [inline]
```

A getter for the X component of the position.

Returns

The X component of the position of the coordinate.

Here is the caller graph for this function:



7.11.3.2 `getPosY()`

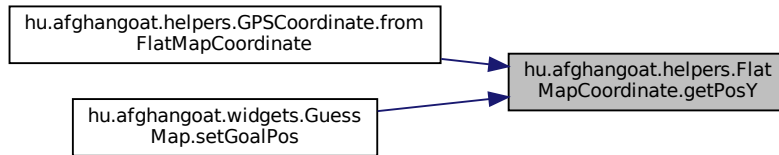
```
double hu.afghangoat.helpers.FlatMapCoordinate.getPosY ( ) [inline]
```

A getter for the Y component of the position.

Returns

The Y component of the position of the coordinate.

Here is the caller graph for this function:



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

- [src/main/java/hu/afghangoat/helpers/FlatMapCoordinate.java](#)

7.12 hu.afghangoat.helpers.FlatMapParser Class Reference

A utility class which allows to parse FlatMap coordinates from designated XML config files.

Public Member Functions

- `List< Element > getShuffledLocations (int maxEntries)`
Returns an array of N shuffled coordinates from the read-in bank of entries.
- `FlatMapParser ()`
A constructor which loads the entries from the hardcoded file.
- `FlatMapCoordinate getOfflineCoordsForImg (String img_name)`
Gives the flatmap coordinates for a give image.

Static Public Attributes

- static final String [OFFLINE_COORDS_FILE](#) = "offline_coords.xml"
The file name in the config directory which stores the offline flatmap coordinates for the game.
- static final String [OFFLINE_COORDS_FILE_VALIDATION](#) = "offline_coords_schema.xsd"
The file name in the config directory which stores the offline flatmap coordinate schema for the game.
- static final String [XML_IMAGE_TAG](#) = "ImageName"
An XML tag constants which will be used in a program. This marks the (photographed) image path corresponding to a set of coordinates.
- static final String [XML_LOCATION_TAG](#) = "Location"
An XML tag constants which will be used in a program. This marks the location corresponding to a set of coordinates.
- static final String [XML_ROOT_TAG](#) = "CampusGuesser"
An XML tag constants which will be used in a program. This marks the root element of the entries.
- static final String [XML_X_POSITION_TAG](#) = "X"
An XML tag constants which will be used in a program. This marks the X position corresponding to a set of coordinates.
- static final String [XML_Y_POSITION_TAG](#) = "Y"
An XML tag constants which will be used in a program. This marks the Y position corresponding to a set of coordinates.

7.12.1 Detailed Description

A utility class which allows to parse FlatMap coordinates from designated XML config files.

Can also be instantiated for getting multiple variants of configured classes.

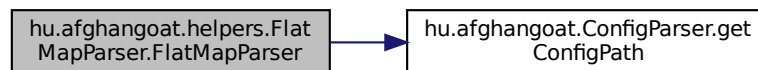
7.12.2 Constructor & Destructor Documentation

7.12.2.1 FlatMapParser()

```
hu.afghangoat.helpers.FlatMapParser.FlatMapParser ( ) [inline]
```

A constructor which loads the entries from the hardcoded file.

Here is the call graph for this function:



7.12.3 Member Function Documentation

7.12.3.1 getOfflineCoordsForImg()

```
FlatMapCoordinate hu.afghangoat.helpers.FlatMapParser.getOfflineCoordsForImg (
    String img_name ) [inline]
```

Gives the flatmap coordinates for a give image.

Parameters

<i>img_name</i>	The name of the image where the coordinates are needed.
-----------------	---

Returns

The flatmap position of the image.

7.12.3.2 getShuffledLocations()

```
List<Element> hu.afghangoat.helpers.FlatMapParser.getShuffledLocations (
    int maxEntries ) [inline]
```

Returns an array of N shuffled coordinates from the read-in bank of entries.

Parameters

<i>maxEntries</i>	How much entries should be returned.
-------------------	--------------------------------------

Returns

The shuffled N locations in an array.

Here is the caller graph for this function:



7.12.4 Member Data Documentation

7.12.4.1 OFFLINE_COORDS_FILE

```
final String hu.afghangoat.helpers.FlatMapParser.OFFLINE_COORDS_FILE = "offline_coords.xml"
[static]
```

The file name in the config directory which stores the offline flatmap coordinates for the game.

7.12.4.2 OFFLINE_COORDS_FILE_VALIDATION

```
final String hu.afghangoat.helpers.FlatMapParser.OFFLINE_COORDS_FILE_VALIDATION = "offline_↔
coords_schema.xsd" [static]
```

The file name in the config directory which stores the offline flatmap coordinate schema for the game.

7.12.4.3 XML_IMAGE_TAG

```
final String hu.afghangoat.helpers.FlatMapParser.XML_IMAGE_TAG = "ImageName" [static]
```

An XML tag constants which will be used in a program. This marks the (photographed) image path corresponding to a set of coordinates.

7.12.4.4 XML_LOCATION_TAG

```
final String hu.afghangoat.helpers.FlatMapParser.XML_LOCATION_TAG = "Location" [static]
```

An XML tag constants which will be used in a program. This marks the location corresponding to a set of coordinates.

7.12.4.5 XML_ROOT_TAG

```
final String hu.afghangoat.helpers.FlatMapParser.XML_ROOT_TAG = "CampusGuesser" [static]
```

An XML tag constants which will be used in a program. This marks the root element of the entries.

7.12.4.6 XML_X_POSITION_TAG

```
final String hu.afghangoat.helpers.FlatMapParser.XML_X_POSITION_TAG = "X" [static]
```

An XML tag constants which will be used in a program. This marks the X position corresponding to a set of coordinates.

7.12.4.7 XML_Y_POSITION_TAG

```
final String hu.afghangoat.helpers.FlatMapParser.XML_Y_POSITION_TAG = "Y" [static]
```

An XML tag constants which will be used in a program. This marks the Y position corresponding to a set of coordinates.

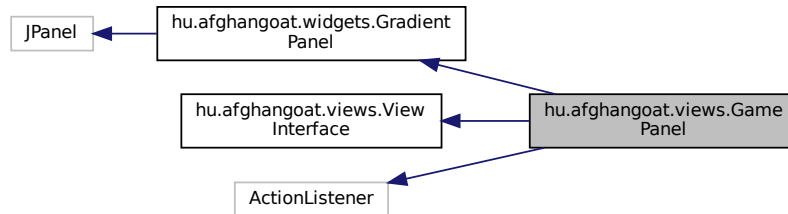
The documentation for this class was generated from the following file:

- [src/main/java/hu/afghangoat/helpers/FlatMapParser.java](#)

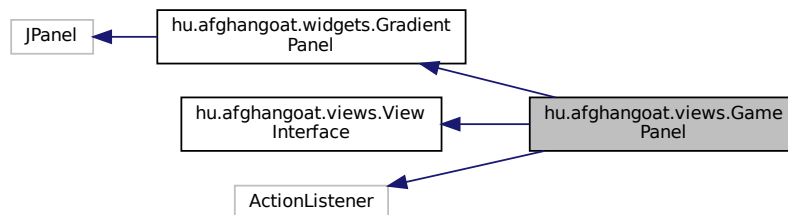
7.13 hu.afghangoat.views.GamePanel Class Reference

The panel which commences the main game logic.

Inheritance diagram for hu.afghangoat.views.GamePanel:



Collaboration diagram for hu.afghangoat.views.GamePanel:



Public Member Functions

- void `startRound ()` throws `InvalidGoalPositionException`
Sets the game parameters to the default values, also starts the first round.
- void `langChanged ()`
This method handles what should happen when the language is changed.
- `GamePanel (MainWindow mainWindow)`
This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.
- void `actionPerformed (ActionEvent e)`
Empty action listener, needs to be implemented.

Static Public Attributes

- static final int `MAX_ROUNDS` =5
This sets that how long should a game take.
- static final double `MAX_DISTANCE_WHERE_POINTS_COUNT` =100.0
Sets the falloff range where after a larger miss, the user gets no points.

Additional Inherited Members

7.13.1 Detailed Description

The panel which commences the main game logic.

The player can scroll a panorama image and based on that, guess on the map besides it.

7.13.2 Constructor & Destructor Documentation

7.13.2.1 GamePanel()

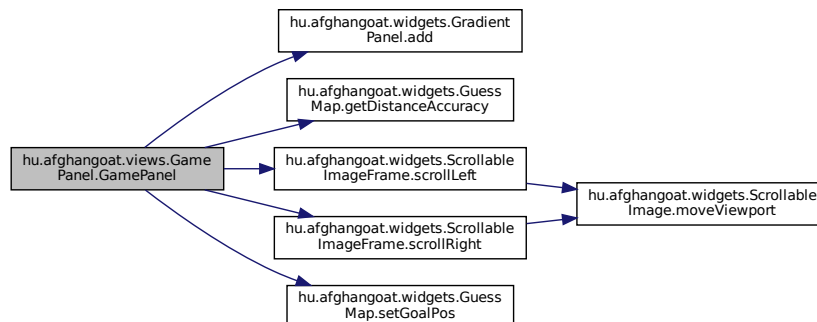
```
hu.afghangoat.views.GamePanel.GamePanel (
    MainWindow mainWindow ) [inline]
```

This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.

Parameters

<i>mainWindow</i>	The parent window of the panel.
-------------------	---------------------------------

Here is the call graph for this function:



7.13.3 Member Function Documentation

7.13.3.1 actionPerformed()

```
void hu.afghangoat.views.GamePanel.actionPerformed (
    ActionEvent e ) [inline]
```

Empty action listener, needs to be implemented.

Parameters

<i>e</i>	The event of the action.
----------	--------------------------

Deprecated Moved logic to the constructor.

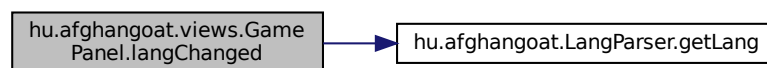
7.13.3.2 langChanged()

```
void hu.afghangoat.views.GamePanel.langChanged ( ) [inline]
```

This method handles what should happen when the language is changed.

Reimplemented from [hu.afghangoat.views.ViewInterface](#).

Here is the call graph for this function:

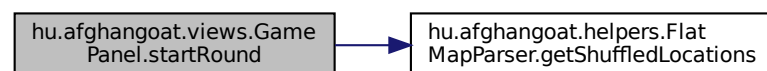


7.13.3.3 startRound()

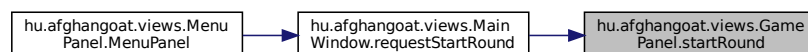
```
void hu.afghangoat.views.GamePanel.startRound ( ) throws InvalidGoalPositionException [inline]
```

Sets the game parameters to the default values, also starts the first round.

Uses the `flatMapParser` to get some random images for guessing. Here is the call graph for this function:



Here is the caller graph for this function:



7.13.4 Member Data Documentation

7.13.4.1 MAX_DISTANCE_WHERE_POINTS_COUNT

```
final double hu.afghangoat.views.GamePanel.MAX_DISTANCE_WHERE_POINTS_COUNT =100.0 [static]
```

Sets the falloff range where after a larger miss, the user gets no points.

7.13.4.2 MAX_ROUNDS

```
final int hu.afghangoat.views.GamePanel.MAX_ROUNDS =5 [static]
```

This sets that how long should a game take.

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

- [src/main/java/hu/afghangoat/views/GamePanel.java](#)

7.14 hu.afghangoat.helpers.GPSCoordinate Class Reference

A data structure which holds GPS longitude and latitude pairs.

Public Member Functions

- double [getGPSLatitude](#) ()
A getter for the latitude.
- double [getGPSLongitude](#) ()
A getter for the longitude.
- [GPSCoordinate](#) (double lat, double lon)
A basic constructor which makes a coordinate from an input longitude and latitude.
- [FlatMapCoordinate toFlatMapCoordinate](#) ()
Converts the GPS coordinate to a flatmap cartesian coordinate.

Static Public Member Functions

- static double [decideRotationModifier](#) ()
Calculates the rotation modifier based on the northern or southern hemisphere.
- static double [getPixelsPerMeter](#) (int zoom, double baseLat)
Gets the pixels per meter ratio based on how zoomed the user is and how close the coordinate is to the northern point.
- static [GPSCoordinate fromFlatMapCoordinate](#) ([FlatMapCoordinate](#) coord)
Converts a given flatmap cartesian coordinate to a GPS coordinate.

Static Public Attributes

- static final double `BASE_LATITUDE` =47.47362222222225
The GPS origo latitude coordinate. This is the center on my map.
- static final double `BASE_LONGITUDE` =19.059227777777778
The GPS origo longitude coordinate. This is the center on my map.
- static final double `FLATMAP_OFFSET_X` =2348.7726148877664
The offset on the X axis in pixels. This will be used in flatmap conversion.
- static final double `FLATMAP_OFFSET_Y` =3247.3495229108244
The offset on the Y axis in pixels. This will be used in flatmap conversion.
- static final double `EARTH_TO_PIXEL_PARAMETER` =156543.03392
This will be used in calculating the latitude formula.
- static final double `CONVERSION_SCALE` = `EARTH_TO_PIXEL_PARAMETER`*Math.PI
The conversion scale based on the parameters of the earth.
- static final boolean `IS_ON_NORTHERN_HEMISPHERE` =true
Whether the GPS coordinates are on the northern or on the southern hemisphere.
- static final int `ZOOM` = 18
The conversion scale based on the parameters of the earth.
- static final double `rotationModifier` =`decideRotationModifier()`
The rotation modifier which will determine whether the Y and X cartesian axes will align up or down.
- static double `pixelsPerMeter` =`getPixelsPerMeter(ZOOM,BASE_LATITUDE)`
Stores the pixels/meter ratio to the current schema.

7.14.1 Detailed Description

A data structure which holds GPS longitude and latitude pairs.

7.14.2 Constructor & Destructor Documentation

7.14.2.1 GPSCoordinate()

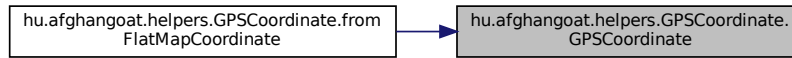
```
hu.afghangoat.helpers.GPSCoordinate.GPSCoordinate (
    double lat,
    double lon ) [inline]
```

A basic constructor which makes a coordinate from an input longitude and latitude.

Parameters

<i>lat</i>	The latitude of the coordinate.
<i>lon</i>	The longitude of the coordinate.

Here is the caller graph for this function:



7.14.3 Member Function Documentation

7.14.3.1 decideRotationModifier()

```
static double hu.afghangoat.helpers.GPSCoordinate.decideRotationModifier ( ) [inline], [static]
```

Calculates the rotation modifier based on the northern or southern hemisphere.

Returns

The rotational modifier.

7.14.3.2 fromFlatMapCoordinate()

```
static GPSCoordinate hu.afghangoat.helpers.GPSCoordinate.fromFlatMapCoordinate (
    FlatMapCoordinate coord ) [inline], [static]
```

Converts a given flatmap cartesian coordinate to a GPS coordinate.

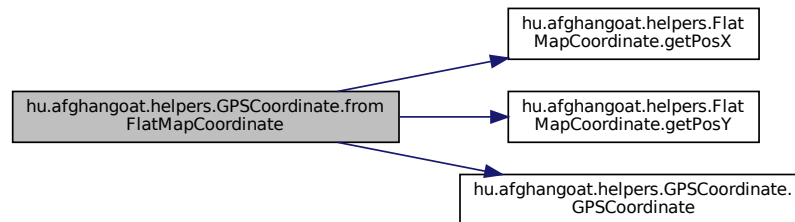
Parameters

<i>coord</i>	The input flatmap coordinate.
--------------	-------------------------------

Returns

The converted GPS coordinate.

Here is the call graph for this function:

**7.14.3.3 getGPSLatitude()**

```
double hu.afghangoat.helpers.GPSCoordinate.getGPSLatitude ( ) [inline]
```

A getter for the latitude.

Returns

The GPS coordinates latitude.

7.14.3.4 getGPSLongitude()

```
double hu.afghangoat.helpers.GPSCoordinate.getGPSLongitude ( ) [inline]
```

A getter for the longitude.

Returns

The GPS coordinates longitude.

7.14.3.5 getPixelsPerMeter()

```
static double hu.afghangoat.helpers.GPSCoordinate.getPixelsPerMeter (
    int zoom,
    double baseLat ) [inline], [static]
```

Gets the pixels per meter ratio based on how zoomed the user is and how close the coordinate is to the northern point.

Parameters

<i>zoom</i>	How zoomed the user is. Uses OpenStreetMaps zoom levels.
<i>baseLat</i>	The latitude of the GPS coordinate.

Returns

The pixels/meter ratio of the schema.

7.14.3.6 toFlatMapCoordinate()

```
FlatMapCoordinate hu.afghangoat.helpers.GPSCoordinate.toFlatMapCoordinate ( ) [inline]
```

Converts the GPS coordinate to a flatmap cartesian coordinate.

Returns

The converted flatmap coordinate.

7.14.4 Member Data Documentation**7.14.4.1 BASE_LATITUDE**

```
final double hu.afghangoat.helpers.GPSCoordinate.BASE_LATITUDE =47.47362222222225 [static]
```

The GPS origo latitude coordinate. This is the center on my map.

7.14.4.2 BASE_LONGITUDE

```
final double hu.afghangoat.helpers.GPSCoordinate.BASE_LONGITUDE =19.059227777777778 [static]
```

The GPS origo longitude coordinate. This is the center on my map.

7.14.4.3 CONVERSION_SCALE

```
final double hu.afghangoat.helpers.GPSCoordinate.CONVERSION_SCALE = EARTH_TO_PIXEL_PARAMETER*Math.PI [static]
```

The conversion scale based on the parameters of the earth.

Let's say that someone wants to make a UNIGuesser franchise on an asteroid which is not round. That also needs to be addressed.

7.14.4.4 EARTH_TO_PIXEL_PARAMETER

```
final double hu.afghangoat.helpers.GPSCoordinate.EARTH_TO_PIXEL_PARAMETER =156543.03392 [static]
```

This will be used in calculating the latitude formula.

7.14.4.5 FLATMAP_OFFSET_X

```
final double hu.afghangoat.helpers.GPSCoordinate.FLATMAP_OFFSET_X =2348.7726148877664 [static]
```

The offset on the X axis in pixels. This will be used in flatmap conversion.

7.14.4.6 FLATMAP_OFFSET_Y

```
final double hu.afghangoat.helpers.GPSCoordinate.FLATMAP_OFFSET_Y =3247.3495229108244 [static]
```

The offset on the Y axis in pixels. This will be used in flatmap conversion.

7.14.4.7 IS_ON_NORTHERN_HEMISPHERE

```
final boolean hu.afghangoat.helpers.GPSCoordinate.IS_ON_NORTHERN_HEMISPHERE =true [static]
```

Whether the GPS coordinates are on the northern or on the southern hemisphere.

7.14.4.8 pixelsPerMeter

```
double hu.afghangoat.helpers.GPSCoordinate.pixelsPerMeter =getPixelsPerMeter(ZOOM,BASE_LATITUDE) [static]
```

Stores the pixels/meter ratio to the current schema.

7.14.4.9 rotationModifier

```
final double hu.afghangoat.helpers.GPSCoordinate.rotationModifier =decideRotationModifier() [static]
```

The rotation modifier which will determine whether the Y and X cartesian axes will align up or down.

7.14.4.10 ZOOM

```
final int hu.afghangoat.helpers.GPSCoordinate.ZOOM = 18 [static]
```

The conversion scale based on the parameters of the earth.

Let's say that someone wants to make a UNIGuesser franchise on an asteroid which is not round. That also needs to be addressed.

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

- [src/main/java/hu/afghangoat/helpers/GPSCoordinate.java](#)

7.15 hu.afghangoat.helpers.GPSReader Class Reference

A utility class which is able to extract GPS coordinates from JPEG images.

Public Member Functions

- [GPSReader \(\)](#)
Empty default constructor.
- [GPSCoordinate extractGps](#) (File file) throws IOException
This method takes in a file and tries to extract the GPS coordinates from it.

Static Public Attributes

- static final int [GPS_INFO_TAG](#) = 0x8825
The GPS info tag byte. Here starts the information stream of the GPS data.
- static final int [APP1_MARKER](#) = 0xE1
The APP1 marker is needed for finding the GPS latitude and longitude coordinate.
- static final int [MARKER_START_SEGMENT](#) = 0xFF
The start segment byte of the coordinate first marker.
- static final int [SOI_START_BYTE1](#) = 0xFF
The JPEG start-of-image byte's first part.
- static final int [SOI_START_BYTE2](#) = 0xD8
The JPEG start-of-image byte's second part.

7.15.1 Detailed Description

A utility class which is able to extract GPS coordinates from JPEG images.

Not used by default.

7.15.2 Constructor & Destructor Documentation

7.15.2.1 GPSReader()

```
hu.afghangoat.helpers.GPSReader.GPSReader ( ) [inline]
```

Empty default constructor.

7.15.3 Member Function Documentation

7.15.3.1 extractGps()

```
GPSCoordinate hu.afghangoat.helpers.GPSReader.extractGps (
    File file ) throws IOException [inline]
```

This method takes in a file and tries to extract the GPS coordinates from it.

It is important that the method will throw an IO exception if the file is unreachable or the file is not a JPEG file.

Parameters

<i>file</i>	The input file.
-------------	-----------------

Returns

The extracted GPS coordinate in success. Otherwise, null or error.

7.15.4 Member Data Documentation

7.15.4.1 APP1_MARKER

```
final int hu.afghangoat.helpers.GPSReader.APP1_MARKER = 0xE1 [static]
```

The APP1 marker is needed for finding the GPS latitude and longitude coordinate.

7.15.4.2 GPS_INFO_TAG

```
final int hu.afghangoat.helpers.GPSReader.GPS_INFO_TAG = 0x825 [static]
```

The GPS info tag byte. Here starts the information stream of the GPS data.

7.15.4.3 MARKER_START_SEGMENT

```
final int hu.afghangoat.helpers.GPSReader.MARKER_START_SEGMENT = 0xFF [static]
```

The start segment byte of the coordinate first marker.

7.15.4.4 SOI_START_BYTE1

```
final int hu.afghangoat.helpers.GPSReader.SOI_START_BYTE1 = 0xFF [static]
```

The JPEG start-of-image byte's first part.

Needed for verification.

7.15.4.5 SOI_START_BYTE2

```
final int hu.afghangoat.helpers.GPSReader.SOI_START_BYTE2 = 0xD8 [static]
```

The JPEG start-of-image byte's second part.

Needed for verification.

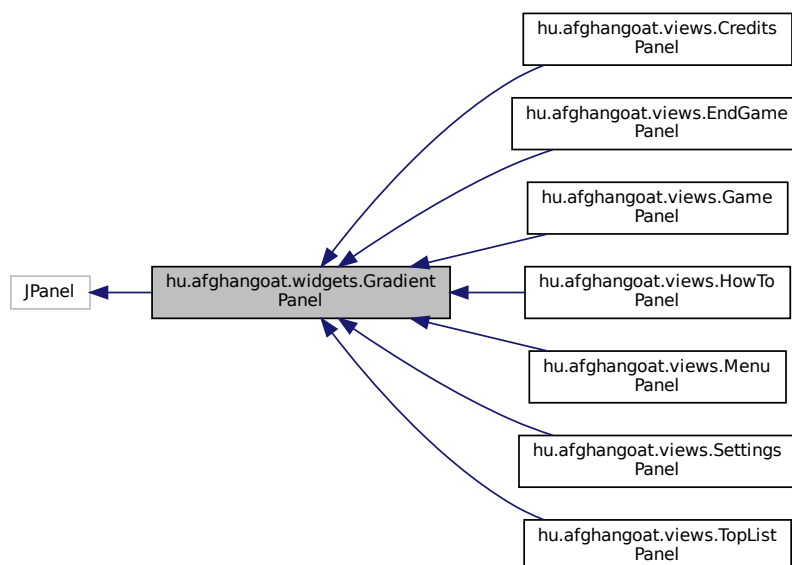
The documentation for this class was generated from the following file:

- [src/main/java/hu/afghangoat/helpers/GPSReader.java](#)

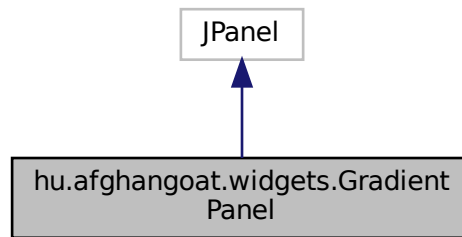
7.16 hu.afghangoat.widgets.GradientPanel Class Reference

A Swing panel class which can have a theme-wise gradient background.

Inheritance diagram for hu.afghangoat.widgets.GradientPanel:



Collaboration diagram for hu.afghangoat.widgets.GradientPanel:



Public Member Functions

- [GradientPanel](#) (GridBagLayout gridBagLayout)
A default constructor which sets a grid bag layout.
- void [setTextColor](#) (Color tc)
A setter for the text color.
- Component [add](#) (Component comp)
An overridden add method which overrides the font color of the new element added to the panel.

Static Public Member Functions

- static void [setGradientColors](#) (Color c1, Color c2)
A setter for both gradient colors.

Protected Member Functions

- void [paintComponent](#) (Graphics g)
Overrides the default rendering to render the custom gradient background.

7.16.1 Detailed Description

A Swing panel class which can have a theme-wise gradient background.

7.16.2 Constructor & Destructor Documentation

7.16.2.1 GradientPanel()

```
hu.afghangoat.widgets.GradientPanel.GradientPanel (
    GridBagLayout gridBagLayout ) [inline]
```

A default constructor which sets a grid bag layout.

Parameters

<i>gridBagLayout</i>	The grid bag layout element.
----------------------	------------------------------

7.16.3 Member Function Documentation

7.16.3.1 add()

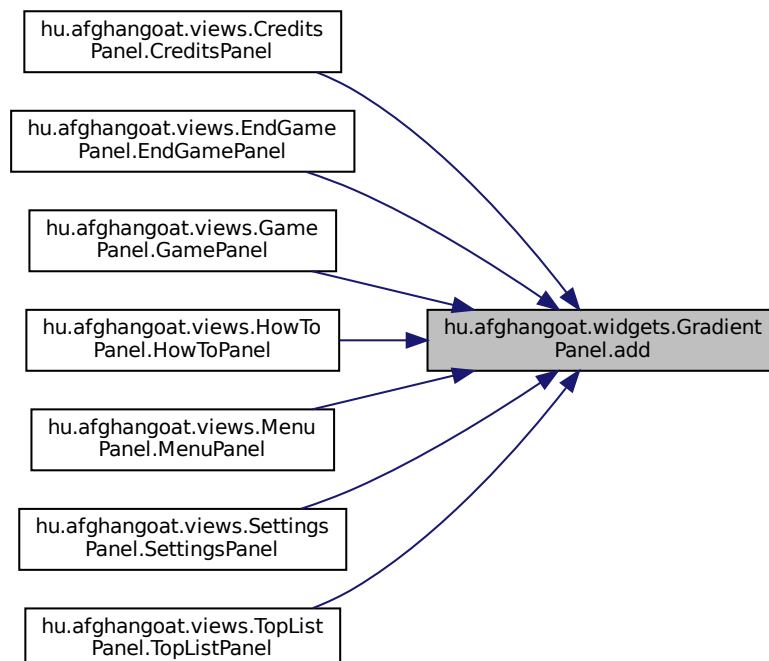
```
Component hu.afghangoat.widgets.GradientPanel.add (  
    Component comp ) [inline]
```

An overridden add method which overrides the font color of the new element added to the panel.

Parameters

<i>comp</i>	The new component which needs to be added.
-------------	--

Here is the caller graph for this function:



7.16.3.2 paintComponent()

```
void hu.afghangoat.widgets.GradientPanel.paintComponent (
    Graphics g ) [inline], [protected]
```

Overrides the default rendering to render the custom gradient background.

Parameters

<i>g</i>	The graphics renderer element.
----------	--------------------------------

7.16.3.3 setGradientColors()

```
static void hu.afghangoat.widgets.GradientPanel.setGradientColors (
    Color c1,
    Color c2 ) [inline], [static]
```

A setter for both gradient colors.

Parameters

<i>c1</i>	The first color.
<i>c2</i>	The second color.

7.16.3.4 setTextColor()

```
void hu.afghangoat.widgets.GradientPanel.setTextColor (
    Color tc ) [inline]
```

A setter for the text color.

Parameters

<i>tc</i>	The new text color.
-----------	---------------------

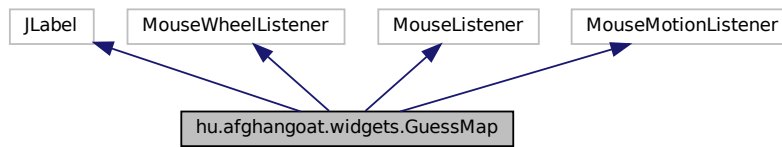
The documentation for this class was generated from the following file:

- src/main/java/hu/afghangoat/widgets/[GradientPanel.java](#)

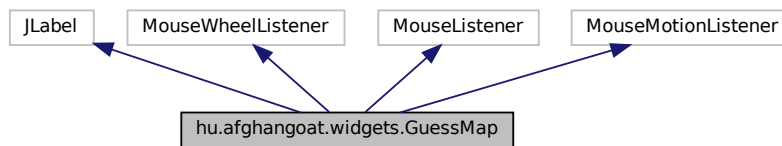
7.17 hu.afghangoat.widgets.GuessMap Class Reference

A Swing component that displays an interactive map for guessing locations.

Inheritance diagram for `hu.afghangoat.widgets.GuessMap`:



Collaboration diagram for `hu.afghangoat.widgets.GuessMap`:



Public Member Functions

- `boolean isPlacedMarker ()`
A getter which returns whether the user has already placed a marker.
- `double getDistanceAccuracy ()` throws `InvalidDistanceException`
Returns the distance accuracy of the player's guess.
- `double getGuessedDistance ()`
Returns the raw guessed distance.
- `void setGoalPos (double gPX, double gPY)`
Sets the goal position to an (x,y) float pair.
- `void setGoalPos (FlatMapCoordinate coords)`
Sets the goal position to a FlatMapCoordinate.
- `void setMarkerTo (double nX, double nY)` throws `InvalidGoalPositionException`
Sets the marker position to an (x,y) float pair.
- `GuessMap (double _scale)`
The constructor of the guessMap which takes in the scale which will affect the map render.
- `Dimension getPreferredSize ()`
Returns the size of the image frame after the scaling applied.
- `void mouseWheelMoved (MouseEvent e)`
Sets the zoom based on the mouse wheel movement.
- `void zoomIn ()`
A helper function which needs to be called when zooming in.
- `void repaintWithParent ()`
A helper function which needs to be called when zooming in or out.
- `void zoomOut ()`
A helper function which needs to be called when zooming out.

- double [zoomAndPanFactor](#) (double mousePos, double offset)
A helper function which helps calculating the zoom and pan factor based on the offset.
- void [mouseClicked](#) (MouseEvent e)
Handles the mouse click event.
- void [mousePressed](#) (MouseEvent e)
Handles the mouse press event.
- void [mouseDragged](#) (MouseEvent e)
Sets the offset based on the mouse drag movement.
- void [mouseReleased](#) (MouseEvent e)
Handles the mouse release event.
- void [mouseEntered](#) (MouseEvent e)
Internal, unused Swing methods which needs to be implemented.
- void [mouseExited](#) (MouseEvent e)
Internal, unused Swing methods which needs to be implemented.
- void [mouseMoved](#) (MouseEvent e)
Internal, unused Swing methods which needs to be implemented.

Static Public Attributes

- static final double [minZoomFactor](#) =0.5
The minimum allowed zoom factor for the map.
- static final double [maxZoomFactor](#) =1.0
The maximum allowed zoom factor for the map.

Protected Member Functions

- void [paintComponent](#) (Graphics g)
Makes the per-frame painting.

7.17.1 Detailed Description

A Swing component that displays an interactive map for guessing locations.

The [GuessMap](#) class displays a map where the user can guess a coordinate, zoom and pan in the map. The map also computes the guessed accuracy.

7.17.2 Constructor & Destructor Documentation

7.17.2.1 GuessMap()

```
hu.afghangoat.widgets.GuessMap.GuessMap (
    double _scale ) [inline]
```

The constructor of the guessMap which takes in the scale which will affect the map render.

Parameters

<code>_scale</code>	The scale of the map.
---------------------	-----------------------

Here is the call graph for this function:



7.17.3 Member Function Documentation

7.17.3.1 `getDistanceAccuracy()`

```
double hu.afghangoat.widgets.GuessMap.getDistanceAccuracy ( ) throws InvalidDistanceException
[inline]
```

Returns the distance accuracy of the player's guess.

This method computes and returns the accuracy of the user's guess based on the distance between the guessed location and the actual target. If the accuracy has not yet been computed, an error will be thrown.

Returns

The distance accuracy in pixels, converted from meters.

Note

This method marks the guess as complete and triggers a repaint.

Warning

If `distanceAccuracy` is -1.0, it indicates an uninitialized state.

Here is the caller graph for this function:



7.17.3.2 getGuessedDistance()

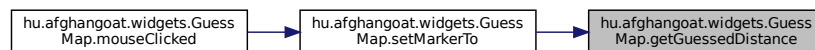
```
double hu.afghangoat.widgets.GuessMap.getGuessedDistance ( ) [inline]
```

Returns the raw guessed distance.

Returns

The raw distance in meters.

Here is the caller graph for this function:



7.17.3.3 getPreferredSize()

```
Dimension hu.afghangoat.widgets.GuessMap.getPreferredSize ( ) [inline]
```

Returns the size of the image frame after the scaling applied.

Returns

The size of the image frame in Dimension unit.

7.17.3.4 isPlacedMarker()

```
boolean hu.afghangoat.widgets.GuessMap.isPlacedMarker ( ) [inline]
```

A getter which returns whether the user has already placed a marker.

7.17.3.5 mouseClicked()

```
void hu.afghangoat.widgets.GuessMap.mouseClicked (
    MouseEvent e ) [inline]
```

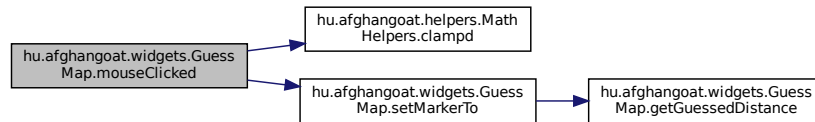
Handles the mouse click event.

Places the guess marker at the position of the mouse event click.

Parameters

<i>e</i>	The click mouse event.
----------	------------------------

Here is the call graph for this function:

**7.17.3.6 mouseDragged()**

```
void hu.afghangoat.widgets.GuessMap.mouseDragged (
    MouseEvent e ) [inline]
```

Sets the offset based on the mouse drag movement.

Parameters

<i>e</i>	The mouse drag movement event
----------	-------------------------------

7.17.3.7 mouseEntered()

```
void hu.afghangoat.widgets.GuessMap.mouseEntered (
    MouseEvent e ) [inline]
```

Internal, unused Swing methods which needs to be implemented.

For now, it is an empty implementation.

Parameters

<i>e</i>	A mouse event
----------	---------------

7.17.3.8 mouseExited()

```
void hu.afghangoat.widgets.GuessMap.mouseExited (
    MouseEvent e ) [inline]
```

Internal, unused Swing methods which needs to be implemented.

For now, it is an empty implementation.

Parameters

<i>e</i>	A mouse event
----------	---------------

7.17.3.9 mouseMoved()

```
void hu.afghangoat.widgets.GuessMap.mouseMoved (
    MouseEvent e ) [inline]
```

Internal, unused Swing methods which needs to be implemented.

For now, it is an empty implementation.

Parameters

<i>e</i>	A mouse event
----------	---------------

7.17.3.10 mousePressed()

```
void hu.afghangoat.widgets.GuessMap.mousePressed (
    MouseEvent e ) [inline]
```

Handles the mouse press event.

Starts tracking the mouse position using the startPoint field.

Parameters

<i>e</i>	The press mouse event.
----------	------------------------

7.17.3.11 mouseReleased()

```
void hu.afghangoat.widgets.GuessMap.mouseReleased (
    MouseEvent e ) [inline]
```

Handles the mouse release event.

Signals, that the user released the mouse. Also repaints the map for safety.

Parameters

<i>e</i>	The release mouse event.
----------	--------------------------

7.17.3.12 mouseWheelMoved()

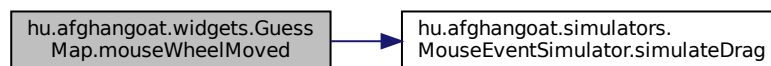
```
void hu.afghangoat.widgets.GuessMap.mouseWheelMoved (
    MouseWheelEvent e ) [inline]
```

Sets the zoom based on the mouse wheel movement.

Parameters

<i>e</i>	The mouse wheel movement event
----------	--------------------------------

Here is the call graph for this function:

**7.17.3.13 paintComponent()**

```
void hu.afghangoat.widgets.GuessMap.paintComponent (
    Graphics g ) [inline], [protected]
```

Makes the per-frame painting.

Also makes the resizing, repositioning transformations.

If the user has already guessed, it draws the marker and if the program is in the check phase it shows a tangent line from the marker to the goal location.

Parameters

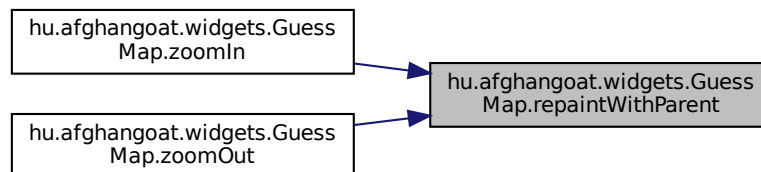
<i>g</i>	The inherited Graphics Swing tag.
----------	-----------------------------------

7.17.3.14 repaintWithParent()

```
void hu.afghangoat.widgets.GuessMap.repaintWithParent ( ) [inline]
```

A helper function which needs to be called when zooming in or out.

The zooming will not be visible if this does not get called. Here is the caller graph for this function:



7.17.3.15 setGoalPos() [1/2]

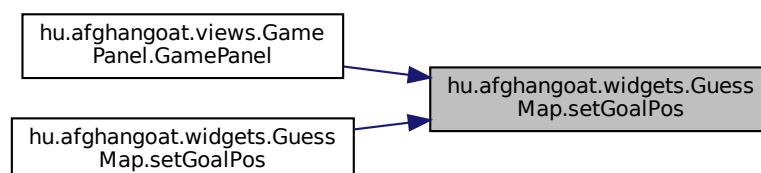
```
void hu.afghangoat.widgets.GuessMap.setGoalPos (
    double gPX,
    double gPY ) [inline]
```

Sets the goal position to an (x,y) float pair.

Parameters

<i>gPX</i>	The X segment of the goal position.
<i>gPY</i>	The Y segment of the goal position.

Here is the caller graph for this function:



7.17.3.16 setGoalPos() [2/2]

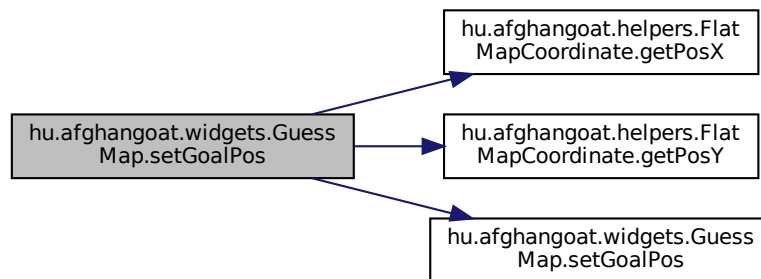
```
void hu.afghangoat.widgets.GuessMap.setGoalPos (
    FlatMapCoordinate coords ) [inline]
```

Sets the goal position to a FlatMapCoordinate.

Parameters

<i>coords</i>	The input FlatMapCoordinate
---------------	-----------------------------

Here is the call graph for this function:

**7.17.3.17 setMarkerTo()**

```
void hu.afghangoat.widgets.GuessMap.setMarkerTo (
    double nX,
    double nY ) throws InvalidGoalPositionException [inline]
```

Sets the marker position to an (x,y) float pair.

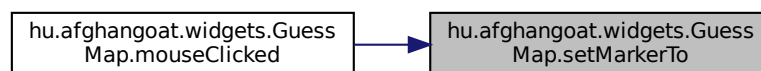
Parameters

<i>nX</i>	The X segment of the marker position.
<i>nY</i>	The Y segment of the marker position.

Here is the call graph for this function:



Here is the caller graph for this function:



7.17.3.18 zoomAndPanFactor()

```
double hu.afghangoat.widgets.GuessMap.zoomAndPanFactor (
    double mousePos,
    double offset ) [inline]
```

A helper function which helps calculating the zoom and pan factor based on the offset.

Parameters

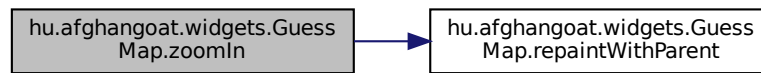
<i>mousePos</i>	The position of the mouse in one axis.
<i>offset</i>	The offset position on one axis.

7.17.3.19 zoomIn()

```
void hu.afghangoat.widgets.GuessMap.zoomIn ( ) [inline]
```

A helper function which needs to be called when zooming in.

Here is the call graph for this function:

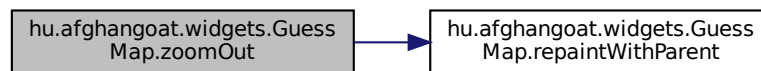


7.17.3.20 zoomOut()

```
void hu.afghangoat.widgets.GuessMap.zoomOut ( ) [inline]
```

A helper function which needs to be called when zooming out.

Here is the call graph for this function:



7.17.4 Member Data Documentation

7.17.4.1 maxZoomFactor

```
final double hu.afghangoat.widgets.GuessMap.maxZoomFactor =1.0 [static]
```

The maximum allowed zoom factor for the map.

This constant defines how far the map can be zoomed in. A larger value means the map can appear more zoomed in.

7.17.4.2 minZoomFactor

```
final double hu.afghangoat.widgets.GuessMap.minZoomFactor =0.5 [static]
```

The minimum allowed zoom factor for the map.

This constant defines how far the map can be zoomed out. A smaller value means the map can appear more zoomed out.

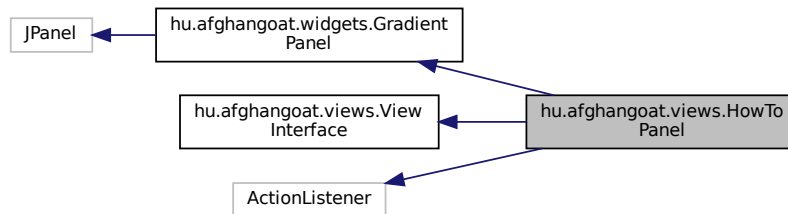
The documentation for this class was generated from the following file:

- `src/main/java/hu/afghangoat/widgets/GuessMap.java`

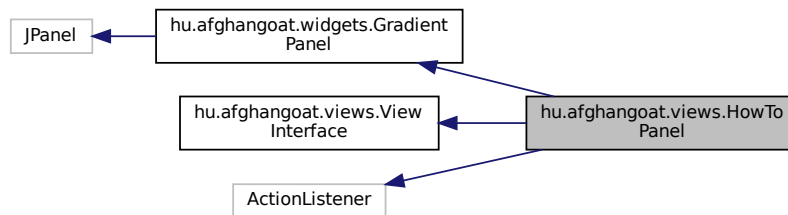
7.18 hu.afghangoat.views.HowToPanel Class Reference

The panel provides a standard description about the game as well as how to play it.

Inheritance diagram for hu.afghangoat.views.HowToPanel:



Collaboration diagram for hu.afghangoat.views.HowToPanel:



Public Member Functions

- void `langChanged` ()
This method handles what should happen when the language is changed.
- `HowToPanel` (`MainWindow` mainWindow)
This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.
- void `actionPerformed` (`ActionEvent` e)
Empty action listener, needs to be implemented.

Additional Inherited Members

7.18.1 Detailed Description

The panel provides a standard description about the game as well as how to play it.

7.18.2 Constructor & Destructor Documentation

7.18.2.1 HowToPanel()

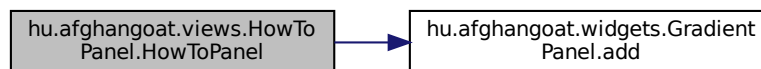
```
hu.afghangoat.views.HowToPanel.HowToPanel (
    MainWindow mainWindow ) [inline]
```

This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.

Parameters

<i>mainWindow</i>	The parent window of the panel.
-------------------	---------------------------------

Here is the call graph for this function:



7.18.3 Member Function Documentation

7.18.3.1 actionPerformed()

```
void hu.afghangoat.views.HowToPanel.actionPerformed (
    ActionEvent e ) [inline]
```

Empty action listener, needs to be implemented.

Parameters

<i>e</i>	The event of the action.
----------	--------------------------

Deprecated Moved logic to the constructor.

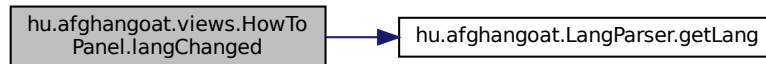
7.18.3.2 langChanged()

```
void hu.afghangoat.views.HowToPanel.langChanged ( ) [inline]
```

This method handles what should happen when the language is changed.

Reimplemented from [hu.afghangoat.views.ViewInterface](#).

Here is the call graph for this function:



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

- [src/main/java/hu/afghangoat/views/HowToPanel.java](#)

7.19 hu.afghangoat.helpers.ImageHelper Class Reference

A utility class which helps in the resizing of Swing specific images.

Static Public Member Functions

- static ImageIcon [resizedImage](#) (String path, int width, int height)
Takes in an image path and returns that image loaded with a specified size.

7.19.1 Detailed Description

A utility class which helps in the resizing of Swing specific images.

7.19.2 Member Function Documentation

7.19.2.1 resizedImage()

```
static ImageIcon hu.afghangoat.helpers.ImageHelper.resizedImage (
    String path,
    int width,
    int height ) [inline], [static]
```

Takes in an image path and returns that image loaded with a specified size.

Parameters

<i>path</i>	The location of the image.
<i>width</i>	The width of the resized image.
<i>height</i>	The height of the resized image.

Returns

An instance of the resized image in ImageIcon format.

Here is the caller graph for this function:



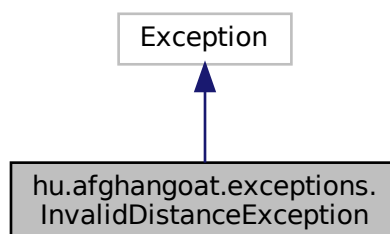
The documentation for this class was generated from the following file:

- [src/main/java/hu/afghangoat/helpers/ImageHelper.java](#)

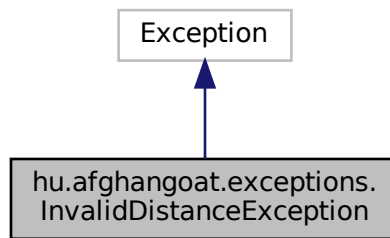
7.20 hu.afghangoat.exceptions.InvalidDistanceException Class Reference

An exception which will be thrown when the guessed distance is a negative number or some invalid number.

Inheritance diagram for hu.afghangoat.exceptions.InvalidDistanceException:



Collaboration diagram for hu.afghangoat.exceptions.InvalidDistanceException:



Public Member Functions

- [InvalidDistanceException](#) (String m)

This constructor takes in a message string it will show when the error will be thrown.

7.20.1 Detailed Description

An exception which will be thrown when the guessed distance is a negative number or some invalid number.

An exception which will be thrown when the placed goal position is invalid or uninitialized.

7.20.2 Constructor & Destructor Documentation

7.20.2.1 InvalidDistanceException()

```
hu.afghangoat.exceptions.InvalidDistanceException.InvalidDistanceException (
    String m ) [inline]
```

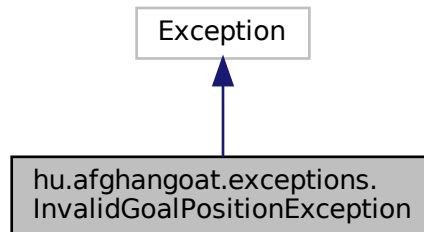
This constructor takes in a message string it will show when the error will be thrown.

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

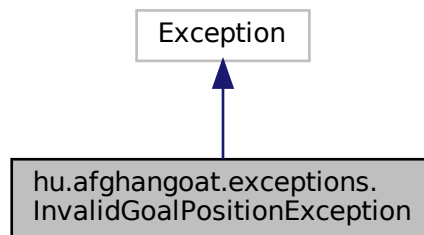
- [src/main/java/hu/afghangoat/exceptions/InvalidDistanceException.java](#)

7.21 hu.afghangoat.exceptions.InvalidGoalPositionException Class Reference

Inheritance diagram for hu.afghangoat.exceptions.InvalidGoalPositionException:



Collaboration diagram for hu.afghangoat.exceptions.InvalidGoalPositionException:



Public Member Functions

- [InvalidGoalPositionException](#) (String m)
This constructor takes in a message string it will show when the error will be thrown.

7.21.1 Constructor & Destructor Documentation

7.21.1.1 InvalidGoalPositionException()

```
hu.afghangoat.exceptions.InvalidGoalPositionException.InvalidGoalPositionException (
    String m ) [inline]
```

This constructor takes in a message string it will show when the error will be thrown.

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

- src/main/java/hu/afghangoat/exceptions/[InvalidGoalPositionException.java](#)

7.22 hu.afghangoat.LangEntry Class Reference

A data structure which represents a language with its name and a corresponding ID.

Public Member Functions

- String [getName](#) ()
A getter for the name.
- String [getTooltip](#) ()
A getter for the ID.

7.22.1 Detailed Description

A data structure which represents a language with its name and a corresponding ID.

7.22.2 Member Function Documentation

7.22.2.1 getName()

```
String hu.afghangoat.LangEntry.getName ( ) [inline]
```

A getter for the name.

Returns

The name of the language.

7.22.2.2 getTooltip()

```
String hu.afghangoat.LangEntry.getTooltip ( ) [inline]
```

A getter for the ID.

Returns

The ID of the language.

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

- src/main/java/hu/afghangoat/[LangEntry.java](#)

7.23 hu.afghangoat.LangParser Class Reference

The component responsible for loading and parsing the given languages from an XML format.

Public Member Functions

- [LangParser](#) (String path)
The constructor of a [LangParser](#). It sets the language entries map from a file.

Static Public Member Functions

- static String [getLang](#) (String what)
Returns the language entry corresponding to the literal from the map.

7.23.1 Detailed Description

The component responsible for loading and parsing the given languages from an XML format.

Uses the [ConfigParser](#).

7.23.2 Constructor & Destructor Documentation

7.23.2.1 LangParser()

```
hu.afghangoat.LangParser.LangParser (
    String path ) [inline]
```

The constructor of a [LangParser](#). It sets the language entries map from a file.

Parameters

<i>path</i>	The location of the language file. Language files are XML files with .lang extensions.
-------------	--

7.23.3 Member Function Documentation

7.23.3.1 getLang()

```
static String hu.afghangoat.LangParser.getLang (
    String what ) [inline], [static]
```

Returns the language entry corresponding to the literal from the map.

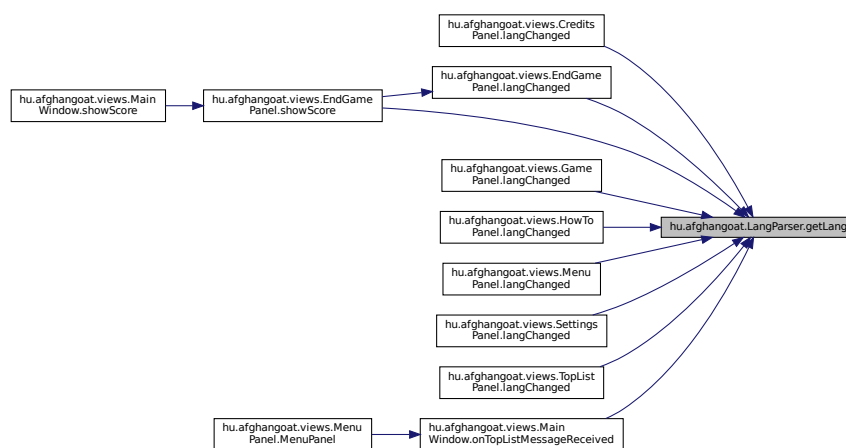
Parameters

<i>what</i>	The literal we search.
-------------	------------------------

Returns

The language entry.

Here is the caller graph for this function:



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

- `src/main/java/hu/afghangoat/LangParser.java`

7.24 hu.afghangoat.Main Class Reference

Static Public Member Functions

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

7.24.1 Member Function Documentation

7.24.1.1 main()

```
static void hu.afghangoat.Main.main (  
    String[] args ) [inline], [static]
```

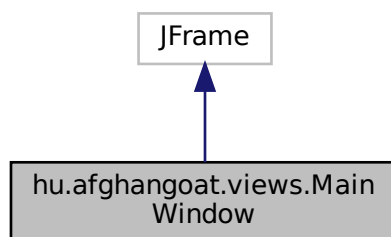
The documentation for this class was generated from the following file:

- [src/main/java/hu/afghangoat/Main.java](#)

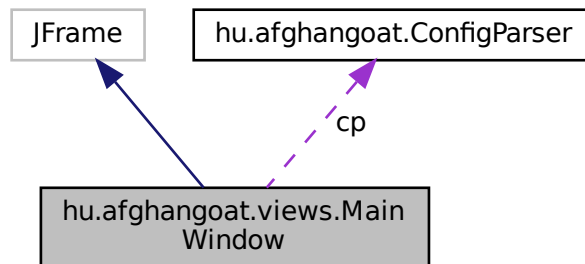
7.25 hu.afghangoat.views.MainWindow Class Reference

Handles the view switching logic between the games.

Inheritance diagram for hu.afghangoat.views.MainWindow:



Collaboration diagram for hu.afghangoat.views.MainWindow:



Public Member Functions

- void [setRF](#) ([LangParser](#) lp)
A setter which helps to set a new language parser when needed.
- void [addTopListEntry](#) (String name, int score)
A wrapper method which will delegate the request to the blockchain helper field.
- void [onTopListMessageReceived](#) ()
An event which verifies the blockchain on need.
- void [requestStartRound](#) () throws `InvalidGoalPositionException`
Delegates a request game to the game panel.
- [MainWindow](#) ()
The default constructor handles the initialization of the panels and loading the default language.
- void [showScore](#) (int score)
Delegates the score to the end game panel.
- void [clearFrame](#) ()
Requests a Swing repaint and frees all the panels from the existing realm.
- void [showView](#) (String name)
Shows a panel based in a requested panel name.
- void [changeLangForAll](#) ()
Requests a language changing for all the panels.
- void [setColorForAll](#) (Color newColor)
Requests a theme repaint for all the panels.

Public Attributes

- [ConfigParser](#) cp
A reference to a config parser which helps to reach the config files.

Static Public Attributes

- static final Dimension [DIVINE_SIZE](#) =new Dimension(640, 480)
The default size of the window.
- static int [TOP_LIST_HASH](#) =37181
The inner first hash of the genesis block.

7.25.1 Detailed Description

Handles the view switching logic between the games.

Also keeps track of the current language and overrides the panels with a new language if needed.

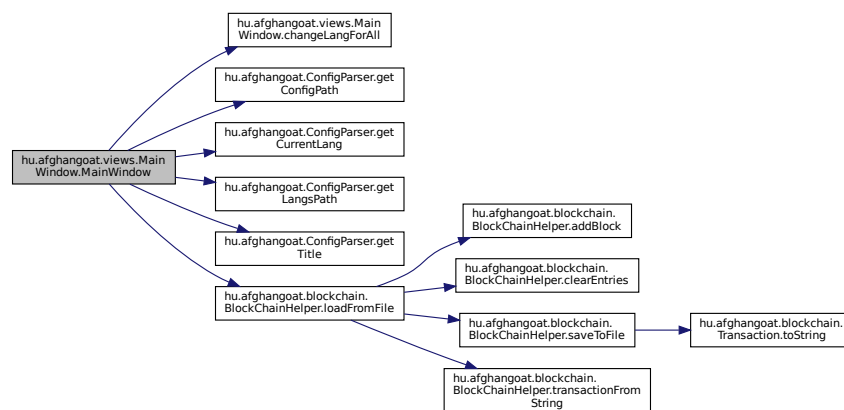
7.25.2 Constructor & Destructor Documentation

7.25.2.1 MainWindow()

```
hu.afghangoat.views.MainWindow.MainWindow ( ) [inline]
```

The default constructor handles the initialization of the panels and loading the default language.

It also commences the harvesting of the data from the basic config file. Here is the call graph for this function:



7.25.3 Member Function Documentation

7.25.3.1 addTopListEntry()

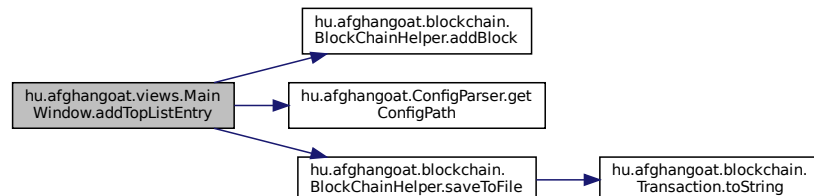
```
void hu.afghangoat.views.MainWindow.addTopListEntry (
    String name,
    int score ) [inline]
```

A wrapper method which will delegate the request to the blockchain helper field.

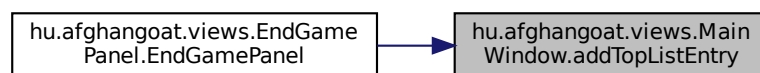
Parameters

<i>name</i>	The entry name.
<i>score</i>	The entry score.

Here is the call graph for this function:



Here is the caller graph for this function:

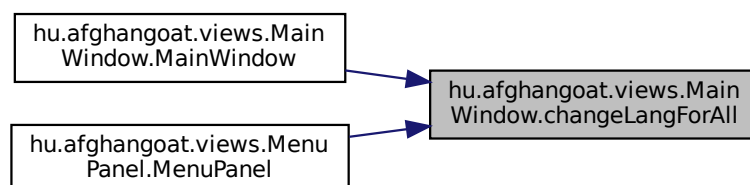


7.25.3.2 changeLangForAll()

```
void hu.afghangoat.views.MainWindow.changeLangForAll ( ) [inline]
```

Requests a language changing for all the panels.

Here is the caller graph for this function:



7.25.3.3 clearFrame()

```
void hu.afghangoat.views.MainWindow.clearFrame ( ) [inline]
```

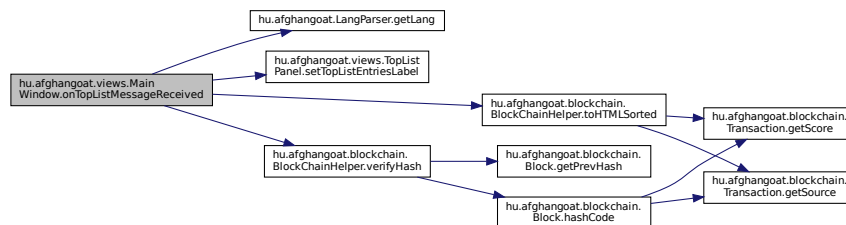
Requests a Swing repaint and frees all the panels from the existing realm.

7.25.3.4 onTopListMessageReceived()

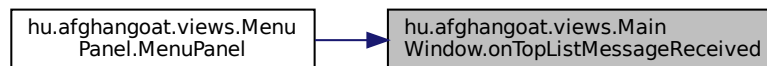
```
void hu.afghangoat.views.MainWindow.onTopListMessageReceived ( ) [inline]
```

An event which verifies the blockchain on need.

(After the top list is loaded.) Here is the call graph for this function:



Here is the caller graph for this function:



7.25.3.5 requestStartRound()

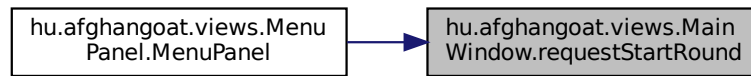
```
void hu.afghangoat.views.MainWindow.requestStartRound ( ) throws InvalidGoalPositionException [inline]
```

Delegates a request game to the game panel.

Here is the call graph for this function:



Here is the caller graph for this function:



7.25.3.6 setColorForAll()

```
void hu.afghangoat.views.MainWindow.setColorForAll (
    Color newColor ) [inline]
```

Requests a theme repaint for all the panels.

Parameters

<i>newColor</i>	The new font color for the panels.
-----------------	------------------------------------

7.25.3.7 setRF()

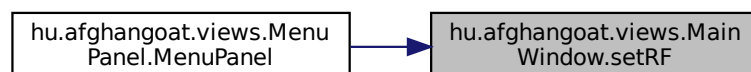
```
void hu.afghangoat.views.MainWindow.setRF (
    LangParser lp ) [inline]
```

A setter which helps to set a new language parser when needed.

Parameters

<i>lp</i>	The new language parsers.
-----------	---------------------------

Here is the caller graph for this function:



7.25.3.8 showScore()

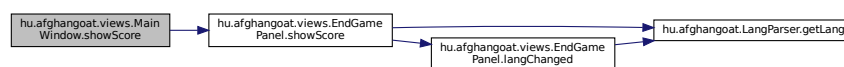
```
void hu.afghangoat.views.MainWindow.showScore (
    int score ) [inline]
```

Delegates the score to the end game panel.

Parameters

<i>score</i>	The score which need to be passed to the end game panel.
--------------	--

Here is the call graph for this function:



7.25.3.9 showView()

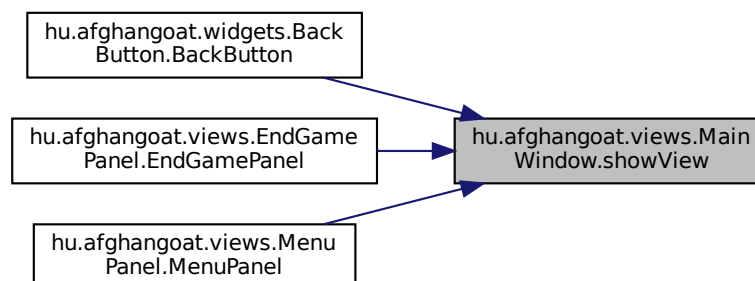
```
void hu.afghangoat.views.MainWindow.showView (
    String name ) [inline]
```

Shows a panel based in a requested panel name.

Parameters

<i>name</i>	The name of the requested panel.
-------------	----------------------------------

Here is the caller graph for this function:



7.25.4 Member Data Documentation

7.25.4.1 cp

`ConfigParser` `hu.afghangoat.views.MainWindow.cp`

A reference to a config parser which helps to reach the config files.

7.25.4.2 DIVINE_SIZE

```
final Dimension hu.afghangoat.views.MainWindow.DIVINE_SIZE =new Dimension(640, 480) [static]
```

The default size of the window.

7.25.4.3 TOP_LIST_HASH

```
int hu.afghangoat.views.MainWindow.TOP_LIST_HASH =37181 [static]
```

The inner first hash of the genesis block.

This will be set for the initial previous hash for the top list.

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

- `src/main/java/hu.afghangoat.views/MainWindow.java`

7.26 hu.afghangoat.helpers.MathHelpers Class Reference

Utility class providing mathematical helper functions.

Static Public Member Functions

- static float `clampf` (float val, float min, float max)
Clamps a float value between a minimum and maximum range.
- static double `clampd` (double val, double min, double max)
Clamps a double value between a minimum and maximum range.
- static int `clamp` (int val, int min, int max)
Clamps an integer value between a minimum and maximum range.

7.26.1 Detailed Description

Utility class providing mathematical helper functions.

The [MathHelpers](#) class includes a set of static methods that help perform common mathematical operations such as clamping a value within a given range.

7.26.2 Member Function Documentation

7.26.2.1 clamp()

```
static int hu.afghangoat.helpers.MathHelpers.clamp (  
    int val,  
    int min,  
    int max ) [inline], [static]
```

Clamps an integer value between a minimum and maximum range.

If `val` is less than `min`, `min` is returned. If `val` is greater than `max`, `max` is returned. Otherwise, `val` is returned unchanged.

Parameters

<i>val</i>	The value to clamp.
<i>min</i>	The minimum allowed value.
<i>max</i>	The maximum allowed value.

Returns

The clamped integer value.

7.26.2.2 clampd()

```
static double hu.afghangoat.helpers.MathHelpers.clampd (  
    double val,  
    double min,  
    double max ) [inline], [static]
```

Clamps a double value between a minimum and maximum range.

If `val` is less than `min`, `min` is returned. If `val` is greater than `max`, `max` is returned. Otherwise, `val` is returned unchanged.

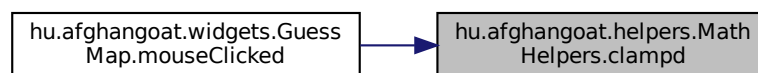
Parameters

<i>val</i>	The value to clamp.
<i>min</i>	The minimum allowed value.
<i>max</i>	The maximum allowed value.

Returns

The clamped double value.

Here is the caller graph for this function:

**7.26.2.3 clampf()**

```

static float hu.afghangoat.helpers.MathHelpers.clampf (
    float val,
    float min,
    float max ) [inline], [static]
  
```

Clamps a float value between a minimum and maximum range.

If *val* is less than *min*, *min* is returned. If *val* is greater than *max*, *max* is returned. Otherwise, *val* is returned unchanged.

Parameters

<i>val</i>	The value to clamp.
<i>min</i>	The minimum allowed value.
<i>max</i>	The maximum allowed value.

Returns

The clamped float value.

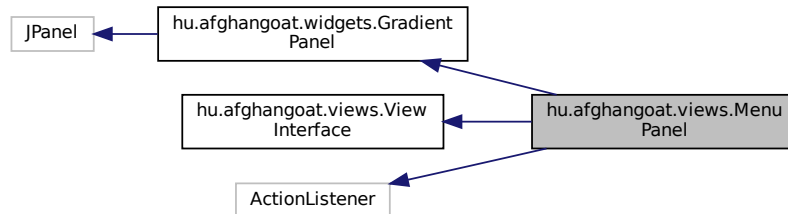
The documentation for this class was generated from the following file:

- [src/main/java/hu/afghangoat/helpers/MathHelpers.java](#)

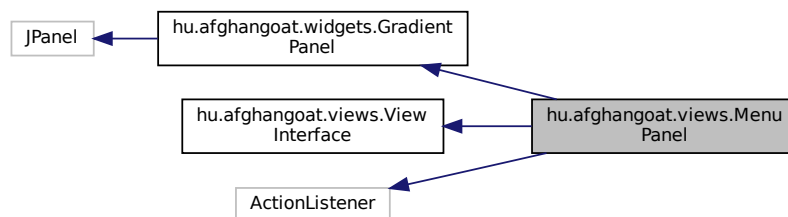
7.27 hu.afghangoat.views.MenuPanel Class Reference

The panel provides a main menu interface for the user where the user can select the subpanel for visiting.

Inheritance diagram for hu.afghangoat.views.MenuPanel:



Collaboration diagram for hu.afghangoat.views.MenuPanel:



Public Member Functions

- void `langChanged` ()
This method handles what should happen when the language is changed.
- `MenuPanel` (`MainWindow` mainWindow)
This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.
- void `actionPerformed` (`ActionEvent` e)
Empty action listener, needs to be implemented.

Additional Inherited Members

7.27.1 Detailed Description

The panel provides a main menu interface for the user where the user can select the subpanel for visiting.

7.27.2 Constructor & Destructor Documentation

7.27.2.1 MenuPanel()

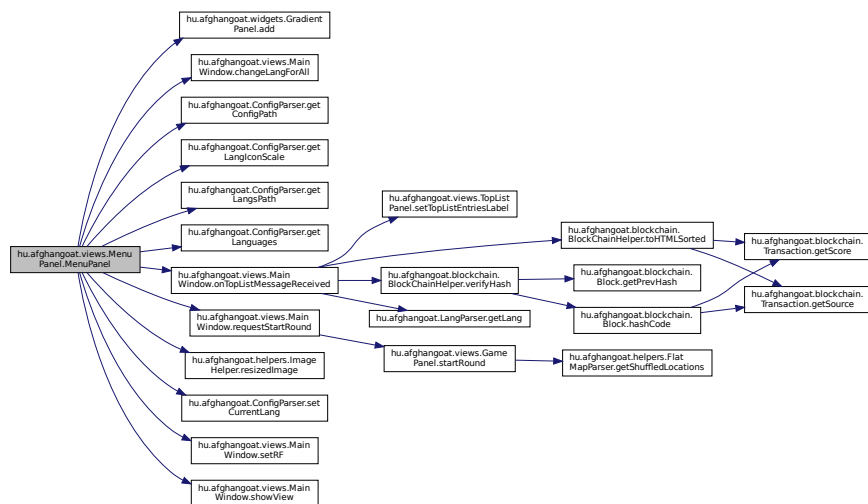
```
hu.afghangoat.views.MenuPanel.MenuPanel (
    MainWindow mainWindow ) [inline]
```

This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.

Parameters

<i>mainWindow</i>	The parent window of the panel.
-------------------	---------------------------------

Here is the call graph for this function:



7.27.3 Member Function Documentation

7.27.3.1 actionPerformed()

```
void hu.afghangoat.views.MenuPanel.actionPerformed (
    ActionEvent e ) [inline]
```

Empty action listener, needs to be implemented.

Parameters

<i>e</i>	The event of the action.
----------	--------------------------

Deprecated Moved logic to the constructor.

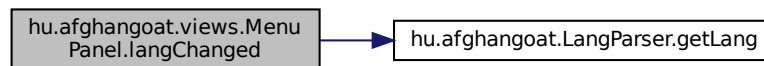
7.27.3.2 langChanged()

```
void hu.afghangoat.views.MenuPanel.langChanged ( ) [inline]
```

This method handles what should happen when the language is changed.

Reimplemented from [hu.afghangoat.views.ViewInterface](#).

Here is the call graph for this function:



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

- [src/main/java/hu/afghangoat/views/MenuPanel.java](#)

7.28 hu.afghangoat.simulators.MouseEventSimulator Class Reference

A utility class which helps in simulation user mouse clicks.

Public Member Functions

- void [simulateDrag](#) (int fromX, int fromY, int toX, int toY, [GuessMap](#) p)
Simulates a mouse drag from X1,Y1 to X2,Y2 on p GuessMap.
- void [simulateClick](#) (int X, int Y, [GuessMap](#) p)
Simulates a mouse click on an X,Y coordinate pair on p GuessMap.

7.28.1 Detailed Description

A utility class which helps in simulation user mouse clicks.

Used in testing and in production too.

7.28.2 Member Function Documentation

7.28.2.1 simulateClick()

```
void hu.afghangoat.simulators.MouseEventSimulator.simulateClick (
    int X,
    int Y,
    GuessMap p ) [inline]
```

Simulates a mouse click on an X,Y coordinate pair on p GuessMap.

Parameters

<i>X</i>	The X coordinate component of the mouse click position.
<i>Y</i>	The Y coordinate component of the mouse click position.
<i>p</i>	The reference to the GuessMap.

7.28.2.2 simulateDrag()

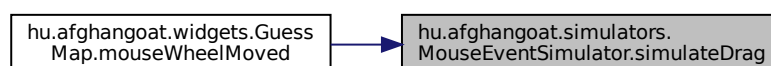
```
void hu.afghangoat.simulators.MouseEventSimulator.simulateDrag (
    int fromX,
    int fromY,
    int toX,
    int toY,
    GuessMap p ) [inline]
```

Simulates a mouse drag from X1,Y1 to X2,Y2 on p GuessMap.

Parameters

<i>fromX</i>	The X1 coordinate component.
<i>fromY</i>	The Y1 coordinate component.
<i>toX</i>	The X2 coordinate component.
<i>toY</i>	The Y2 coordinate component.
<i>p</i>	The reference to the GuessMap.

Here is the caller graph for this function:



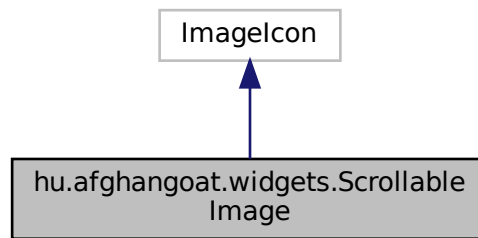
The documentation for this class was generated from the following file:

- [src/main/java/hu/afghangoat/simulators/MouseEventSimulator.java](#)

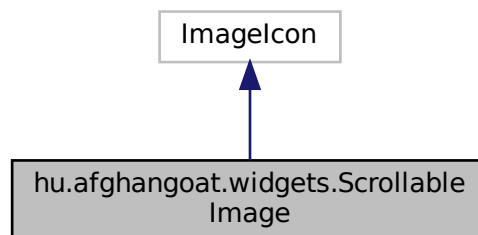
7.29 hu.afghangoat.widgets.ScrollableImage Class Reference

A scrollable image which can be used to render a panorama image.

Inheritance diagram for `hu.afghangoat.widgets.ScrollableImage`:



Collaboration diagram for `hu.afghangoat.widgets.ScrollableImage`:



Public Member Functions

- [ScrollableImage](#) ()
A basic constructor calling the Swing ImageIcon's constructor.
- [ScrollableImage](#) (String path, int targetWidth, int targetHeight)
This constructor sets the scrollable image to a scaled-down, usable target image.
- void [moveViewport](#) (int posX)
Sets a new offset from the left side of the image.

7.29.1 Detailed Description

A scrollable image which can be used to render a panorama image.

Supports left-right scrolling and panning.

7.29.2 Constructor & Destructor Documentation

7.29.2.1 ScrollableImage() [1/2]

```
hu.afghangoat.widgets.ScrollableImage.ScrollableImage ( ) [inline]
```

A basic constructor calling the Swing ImageIcon's constructor.

7.29.2.2 ScrollableImage() [2/2]

```
hu.afghangoat.widgets.ScrollableImage.ScrollableImage (
    String path,
    int targetWidth,
    int targetHeight ) [inline]
```

This constructor sets the scrollable image to a scaled-down, usable target image.

Parameters

<i>path</i>	The path of the image.
<i>targetWidth</i>	the scaled-down width of the image.
<i>targetHeight</i>	the scaled-down height of the image.

Here is the call graph for this function:



7.29.3 Member Function Documentation

7.29.3.1 moveViewport()

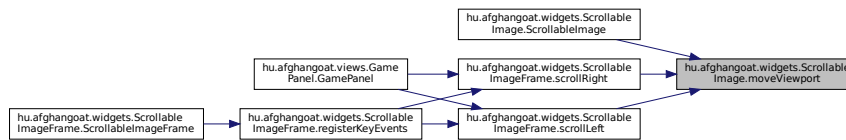
```
void hu.afghangoat.widgets.ScrollableImage.moveViewport (
    int posX ) [inline]
```

Sets a new offset from the left side of the image.

Parameters

<i>posX</i>	The new offset.
-------------	-----------------

Here is the caller graph for this function:



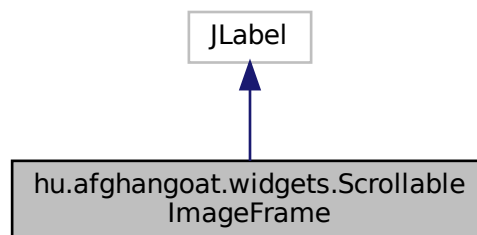
The documentation for this class was generated from the following file:

- [src/main/java/hu/afghangoat/widgets/ScrollableImage.java](#)

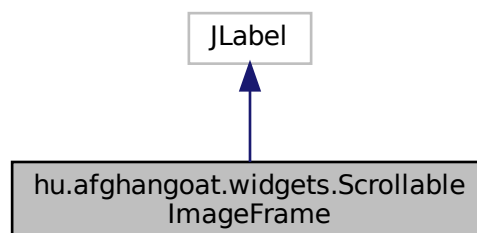
7.30 hu.afghangoat.widgets.ScrollableImageFrame Class Reference

A scrollable image holder which command the scrolling and the offsetting of the held image.

Inheritance diagram for hu.afghangoat.widgets.ScrollableImageFrame:



Collaboration diagram for hu.afghangoat.widgets.ScrollableImageFrame:



Public Member Functions

- [ScrollableImageFrame](#) ([ScrollableImage](#) img)
A constructor which sets a scrollable image as a self-image.
- [ScrollableImageFrame](#) ()
A default constructor which calls the parent's constructor.
- void [registerKeyEvents](#) ()
Registers the events which will help in the moving of the inner image with key presses.
- void [scrollLeft](#) ()
Delegates a left scroll to the image.
- void [scrollRight](#) ()
Delegates a right scroll to the image.
- void [scrollLeft](#) (int px)
Delegates a left scroll to the image by some amount.
- void [scrollRight](#) (int px)
Delegates a right scroll to the image by some amount.

Static Public Attributes

- static final int [SCROLL_AMOUNT_IN_PX](#) =100
The amount that a single scroll event will offset the X axis.

7.30.1 Detailed Description

A scrollable image holder which command the scrolling and the offsetting of the held image.

7.30.2 Constructor & Destructor Documentation

7.30.2.1 ScrollableImageFrame() [1/2]

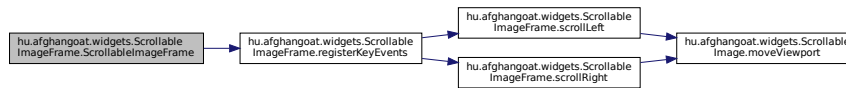
```
hu.afghangoat.widgets.ScrollableImageFrame.ScrollableImageFrame (
    ScrollableImage img )    [inline]
```

A constructor which sets a scrollable image as a self-image.

Parameters

<i>img</i>	The reference to the scrollable image.
------------	--

Here is the call graph for this function:

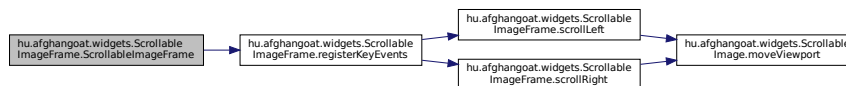


7.30.2.2 ScrollableImageFrame() [2/2]

```
hu.afghangoat.widgets.ScrollableImageFrame.ScrollableImageFrame ( ) [inline]
```

A default constructor which calls the parent's constructor.

Here is the call graph for this function:



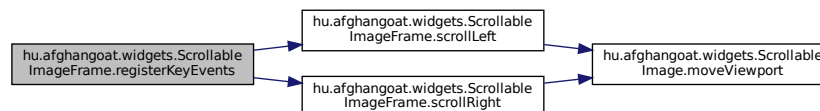
7.30.3 Member Function Documentation

7.30.3.1 registerKeyEvents()

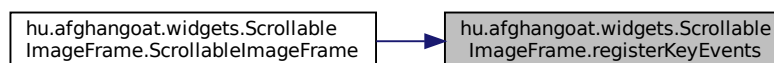
```
void hu.afghangoat.widgets.ScrollableImageFrame.registerKeyEvents ( ) [inline]
```

Registers the events which will help in the moving of the inner image with key presses.

Gets called in the constructors. Here is the call graph for this function:



Here is the caller graph for this function:



7.30.3.2 scrollLeft() [1/2]

```
void hu.afghangoat.widgets.ScrollableImageFrame.scrollLeft ( ) [inline]
```

Delegates a left scroll to the image.

Here is the call graph for this function:



Here is the caller graph for this function:



7.30.3.3 scrollLeft() [2/2]

```
void hu.afghangoat.widgets.ScrollableImageFrame.scrollLeft (
    int px ) [inline]
```

Delegates a left scroll to the image by some amount.

Parameters

<i>px</i>	The scroll amount.
-----------	--------------------

Here is the call graph for this function:



7.30.3.4 scrollRight() [1/2]

```
void hu.afghangoat.widgets.ScrollableImageFrame.scrollRight ( ) [inline]
```

Delegates a right scroll to the image.

Here is the call graph for this function:



Here is the caller graph for this function:



7.30.3.5 scrollRight() [2/2]

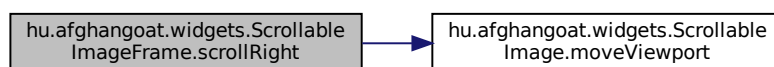
```
void hu.afghangoat.widgets.ScrollableImageFrame.scrollRight (
    int px ) [inline]
```

Delegates a right scroll to the image by some amount.

Parameters

<i>px</i>	The scroll amount.
-----------	--------------------

Here is the call graph for this function:



7.30.4 Member Data Documentation

7.30.4.1 SCROLL_AMOUNT_IN_PX

```
final int hu.afghangoat.widgets.ScrollableImageFrame.SCROLL_AMOUNT_IN_PX =100 [static]
```

The amount that a single scroll event will offset the X axis.

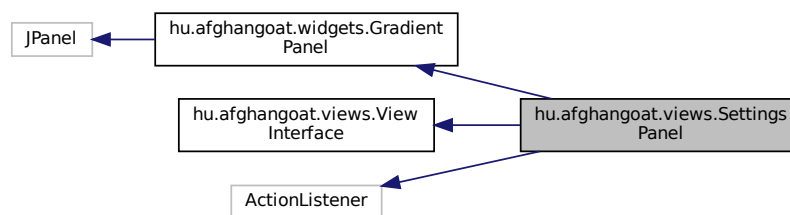
The documentation for this class was generated from the following file:

- src/main/java/hu/afghangoat/widgets/[ScrollableImageFrame.java](#)

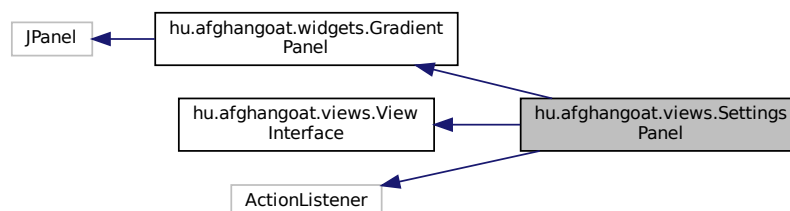
7.31 hu.afghangoat.views.SettingsPanel Class Reference

The panel provides UI interface for the visual and game settings.

Inheritance diagram for hu.afghangoat.views.SettingsPanel:



Collaboration diagram for hu.afghangoat.views.SettingsPanel:



Public Member Functions

- void [langChanged](#) ()
This method handles what should happen when the language is changed.
- [SettingsPanel](#) ([MainWindow](#) mainWindow)
This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.
- void [actionPerformed](#) (ActionEvent e)
Empty action listener, needs to be implemented.

Additional Inherited Members

7.31.1 Detailed Description

The panel provides UI interface for the visual and game settings.

7.31.2 Constructor & Destructor Documentation

7.31.2.1 SettingsPanel()

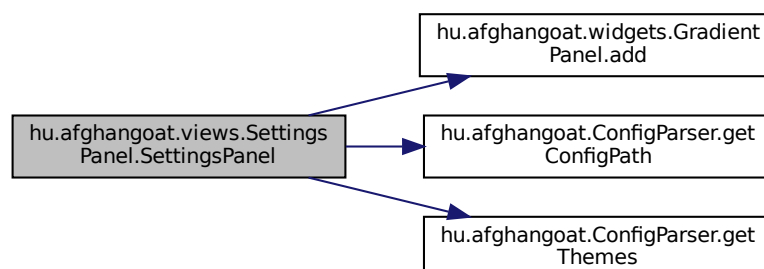
```
hu.afghangoat.views.SettingsPanel.SettingsPanel (
    MainWindow mainWindow ) [inline]
```

This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.

Parameters

<i>mainWindow</i>	The parent window of the panel.
-------------------	---------------------------------

Here is the call graph for this function:



7.31.3 Member Function Documentation

7.31.3.1 actionPerformed()

```
void hu.afghangoat.views.SettingsPanel.actionPerformed (
    ActionEvent e ) [inline]
```

Empty action listener, needs to be implemented.

Parameters

<i>e</i>	The event of the action.
----------	--------------------------

Deprecated Moved logic to the constructor.

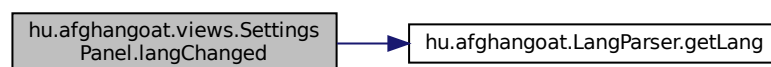
7.31.3.2 langChanged()

```
void hu.afghangoat.views.SettingsPanel.langChanged ( ) [inline]
```

This method handles what should happen when the language is changed.

Reimplemented from [hu.afghangoat.views.ViewInterface](#).

Here is the call graph for this function:



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

- `src/main/java/hu/afghangoat/views/SettingsPanel.java`

7.32 hu.afghangoat.widgets.StyleWidget Class Reference

Holds information about a single theme.

Public Member Functions

- Color [getBgGradientColor1](#) ()
Getter for the first background gradient color component.
- Color [getFontColor](#) ()
Getter for the font text color.
- String [getName](#) ()
Getter for the theme name.
- Color [getBgGradientColor2](#) ()
Getter for the second background gradient color component.
- [StyleWidget](#) (Color gc1, Color gc2, Color fC, String style_name)
A constructor which sets all the colors and the name for the theme.

7.32.1 Detailed Description

Holds information about a single theme.

7.32.2 Constructor & Destructor Documentation

7.32.2.1 StyleWidget()

```
hu.afghangoat.widgets.StyleWidget.StyleWidget (
    Color gc1,
    Color gc2,
    Color fC,
    String style_name ) [inline]
```

A constructor which sets all the colors and the name for the theme.

Parameters

<i>gc1</i>	The first background gradient color component.
<i>gc2</i>	The second background gradient color component.
<i>fC</i>	The theme's font color.
<i>style_name</i>	The theme's name.

7.32.3 Member Function Documentation

7.32.3.1 getBgGradientColor1()

```
Color hu.afghangoat.widgets.StyleWidget.getBgGradientColor1 ( ) [inline]
```

Getter for the first background gradient color component.

7.32.3.2 getBgGradientColor2()

```
Color hu.afghangoat.widgets.StyleWidget.getBgGradientColor2 ( ) [inline]
```

Getter for the second background gradient color component.

7.32.3.3 getFontColor()

```
Color hu.afghangoat.widgets.StyleWidget.getFontColor ( ) [inline]
```

Getter for the font text color.

7.32.3.4 getName()

```
String hu.afghangoat.widgets.StyleWidget.getName ( ) [inline]
```

Getter for the theme name.

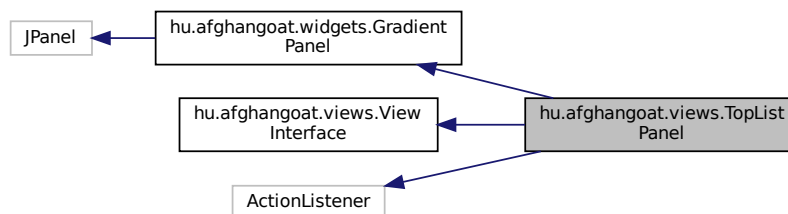
The documentation for this class was generated from the following file:

- [src/main/java/hu/afghangoat/widgets/StyleWidget.java](#)

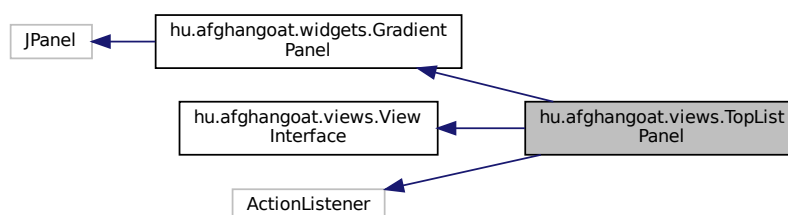
7.33 hu.afghangoat.views.TopListPanel Class Reference

Displays those who earned the most score in the game.

Inheritance diagram for hu.afghangoat.views.TopListPanel:



Collaboration diagram for hu.afghangoat.views.TopListPanel:



Public Member Functions

- void [langChanged](#) ()
This method handles what should happen when the language is changed.
- void [setTopListEntriesLabel](#) (String data)
Sets the top list label to a new HTML list element.
- [TopListPanel](#) ([MainWindow](#) mainWindow)
This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.
- void [actionPerformed](#) (ActionEvent e)
Empty action listener, needs to be implemented.

Static Public Attributes

- static final int [VISIBLE_TOP_ENTRIES](#) =10
The top N entries will be visible in this page.

Additional Inherited Members

7.33.1 Detailed Description

Displays those who earned the most score in the game.

Also displays if the top list save is deemed "cheated".

7.33.2 Constructor & Destructor Documentation

7.33.2.1 TopListPanel()

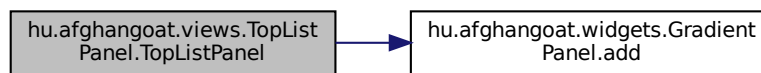
```
hu.afghangoat.views.TopListPanel.TopListPanel (  
    MainWindow mainWindow ) [inline]
```

This constructor sets up the layout of the panel and sets the event listeners. Also takes the parent window account.

Parameters

<i>mainWindow</i>	The parent window of the panel.
-------------------	---------------------------------

Here is the call graph for this function:



7.33.3 Member Function Documentation

7.33.3.1 actionPerformed()

```
void hu.afghangoat.views.TopListPanel.actionPerformed (
    ActionEvent e ) [inline]
```

Empty action listener, needs to be implemented.

Parameters

<i>e</i>	The event of the action.
----------	--------------------------

Deprecated Moved logic to the constructor.

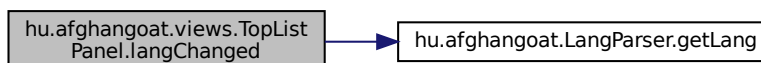
7.33.3.2 langChanged()

```
void hu.afghangoat.views.TopListPanel.langChanged ( ) [inline]
```

This method handles what should happen when the language is changed.

Reimplemented from [hu.afghangoat.views.ViewInterface](#).

Here is the call graph for this function:



7.33.3.3 setTopListEntriesLabel()

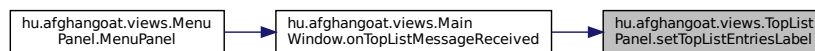
```
void hu.afghangoat.views.TopListPanel.setTopListEntriesLabel (
    String data ) [inline]
```

Sets the top list label to a new HTML list element.

Parameters

<i>data</i>	The entries in an unordered list HTML element.
-------------	--

Here is the caller graph for this function:



7.33.4 Member Data Documentation

7.33.4.1 VISIBLE_TOP_ENTRIES

```
final int hu.afghangoat.views.TopListPanel.VISIBLE_TOP_ENTRIES =10 [static]
```

The top N entries will be visible in this page.

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

- [src/main/java/hu/afghangoat/views/TopListPanel.java](#)

7.34 hu.afghangoat.blockchain.Transaction Class Reference

A transaction stores a top list entry, which consists from a score and a source name.

Public Member Functions

- int [getScore](#) ()
A getter for the score field.
- void [setScore](#) (int score)
A setter for the score field.
- [Transaction](#) (String source, int score)
A basic constructor for the transaction which takes in a score and a participant name.
- String [getSource](#) ()
A getter for the participant's name field.
- void [setSource](#) (String source)
A setter for the participant's name field.
- boolean [equals](#) (Object o)
Checks whether 2 instances of transactions are equal by stored value.
- int [hashCode](#) ()
Generates a hash code based on the inner values of the transactions.
- String [toString](#) ()
A method which converts a transaction instance to a serializable text format.

7.34.1 Detailed Description

A transaction stores a top list entry, which consists from a score and a source name.

7.34.2 Constructor & Destructor Documentation

7.34.2.1 Transaction()

```
hu.afghangoat.blockchain.Transaction.Transaction (
    String source,
    int score ) [inline]
```

A basic constructor for the transaction which takes in a score and a participant name.

Parameters

<i>source</i>	The participant's name.
<i>score</i>	The participant's score.

7.34.3 Member Function Documentation

7.34.3.1 equals()

```
boolean hu.afghangoat.blockchain.Transaction.equals (
    Object o ) [inline]
```

Checks whether 2 instances of transactions are equal by stored value.

Parameters

<i>o</i>	the RHS object.
----------	-----------------

Returns

Whether they are equal.

7.34.3.2 getScore()

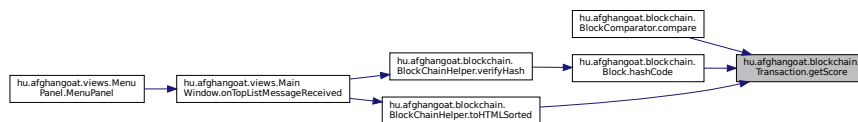
```
int hu.afghangoat.blockchain.Transaction.getScore ( ) [inline]
```

A getter for the score field.

Returns

The score.

Here is the caller graph for this function:



7.34.3.3 getSource()

```
String hu.afghangoat.blockchain.Transaction.getSource ( ) [inline]
```

A getter for the participant's name field.

Returns

The participant's name.

Here is the caller graph for this function:



7.34.3.4 hashCode()

```
int hu.afghangoat.blockchain.Transaction.hashCode ( ) [inline]
```

Generates a hash code based on the inner values of the transactions.

Returns

The generated hash code.

7.34.3.5 setScore()

```
void hu.afghangoat.blockchain.Transaction.setScore (
    int score ) [inline]
```

A setter for the score field.

Parameters

<i>score</i>	The new score.
--------------	----------------

7.34.3.6 setSource()

```
void hu.afghangoat.blockchain.Transaction.setSource (
    String source ) [inline]
```

A setter for the participant's name field.

Parameters

<i>source</i>	The participant's new name.
---------------	-----------------------------

7.34.3.7 toString()

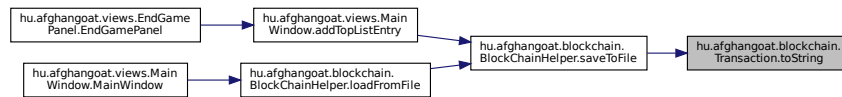
```
String hu.afghangoat.blockchain.Transaction.toString ( ) [inline]
```

A method which converts a transaction instance to a serializable text format.

Returns

The text format of the transaction.

Here is the caller graph for this function:



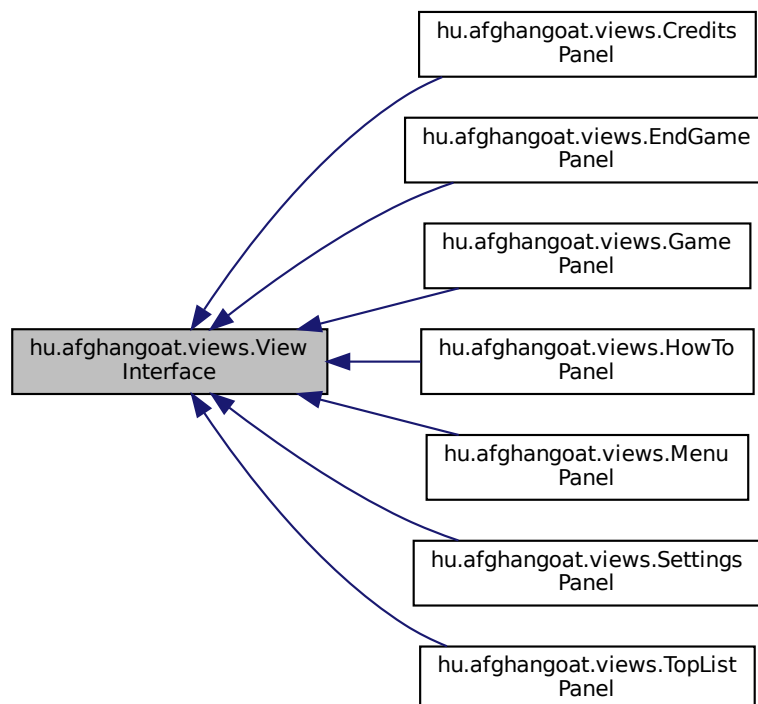
The documentation for this class was generated from the following file:

- `src/main/java/hu/afghangoat/blockchain/Transaction.java`

7.35 hu.afghangoat.views.ViewInterface Class Reference

An interface for views.

Inheritance diagram for `hu.afghangoat.views.ViewInterface`:



Public Member Functions

- abstract void [langChanged](#) ()

This method handles what should happen when the language is changed.

7.35.1 Detailed Description

An interface for views.

It cleanly states that the langChanged event needs to be implemented for each panel.

7.35.2 Member Function Documentation

7.35.2.1 langChanged()

```
abstract void hu.afghangoat.views.ViewInterface.langChanged ( ) [abstract]
```

This method handles what should happen when the language is changed.

Reimplemented in [hu.afghangoat.views.TopListPanel](#), [hu.afghangoat.views.SettingsPanel](#), [hu.afghangoat.views.MenuPanel](#), [hu.afghangoat.views.HowToPanel](#), [hu.afghangoat.views.GamePanel](#), [hu.afghangoat.views.EndGamePanel](#), and [hu.afghangoat.views.CreditsPanel](#).

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

- [src/main/java/hu/afghangoat/views/ViewInterface.java](#)

7.36 WidgetsTest Class Reference

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

- [src/test/java/WidgetsTest.java](#)

Chapter 8

File Documentation

8.1 src/main/java/hu/afghangoat/blockchain/Block.java File Reference

Classes

- class [hu.afghangoat.blockchain.Block](#)
A single block contains some amount of transactions.

Packages

- package [hu.afghangoat.blockchain](#)

8.2 src/main/java/hu/afghangoat/blockchain/BlockChainHelper.java File Reference

Classes

- class [hu.afghangoat.blockchain.BlockChainHelper](#)
An instantiable helper class which can load the encrypted blockchain files.

Packages

- package [hu.afghangoat.blockchain](#)

8.3 src/main/java/hu/afghangoat/blockchain/BlockComparator.java File Reference

Classes

- class [hu.afghangoat.blockchain.BlockComparator](#)
A helper comparator which can compare blockchain blocks based on their leading transaction scores.

Packages

- package [hu.afghangoat.blockchain](#)

8.4 src/main/java/hu/afghangoat/blockchain/Transaction.java File Reference

Classes

- class [hu.afghangoat.blockchain.Transaction](#)
A transaction stores a top list entry, which consists from a score and a source name.

Packages

- package [hu.afghangoat.blockchain](#)

8.5 src/main/java/hu/afghangoat/ConfigParser.java File Reference

Classes

- class [hu.afghangoat.ConfigParser](#)
A utility class for getting the right paths for all sorts of configs like images and language settings.

8.6 src/main/java/hu/afghangoat/exceptions/InvalidDistanceException.java File Reference ↩

Classes

- class [hu.afghangoat.exceptions.InvalidDistanceException](#)
An exception which will be thrown when the guessed distance if a negative number or some invalid number.

Packages

- package [hu.afghangoat.exceptions](#)

8.7 src/main/java/hu/afghangoat/exceptions/InvalidGoalPositionException.java File Reference ↩

Classes

- class [hu.afghangoat.exceptions.InvalidGoalPositionException](#)

Packages

- package [hu.afghangoat.exceptions](#)

8.8 src/main/java/hu/afghangoat/helpers/FlatMapCoordinate.java File Reference

Classes

- class [hu.afghangoat.helpers.FlatMapCoordinate](#)
A data structure which holds the coordinate based on its location on the 2d flattened map.

Packages

- package [hu.afghangoat.helpers](#)

8.9 src/main/java/hu/afghangoat/helpers/FlatMapParser.java File Reference

Classes

- class [hu.afghangoat.helpers.FlatMapParser](#)
A utility class which allows to parse FlatMap coordinates from designated XML config files.

Packages

- package [hu.afghangoat.helpers](#)

8.10 src/main/java/hu/afghangoat/helpers/GPSCoordinate.java File Reference

Classes

- class [hu.afghangoat.helpers.GPSCoordinate](#)
A data structure which holds GPS longitude and latitude pairs.

Packages

- package [hu.afghangoat.helpers](#)

8.11 src/main/java/hu/afghangoat/helpers/GPSReader.java File Reference

Classes

- class [hu.afghangoat.helpers.GPSReader](#)
A utility class which is able to extract GPS coordinates from JPEG images.

Packages

- package [hu.afghangoat.helpers](#)

8.12 src/main/java/hu/afghangoat/helpers/ImageHelper.java File Reference

Classes

- class [hu.afghangoat.helpers.ImageHelper](#)
A utility class which helps in the resizing of Swing specific images.

Packages

- package [hu.afghangoat.helpers](#)

8.13 src/main/java/hu/afghangoat/helpers/MathHelpers.java File Reference

Classes

- class [hu.afghangoat.helpers.MathHelpers](#)
Utility class providing mathematical helper functions.

Packages

- package [hu.afghangoat.helpers](#)

8.14 src/main/java/hu/afghangoat/LangEntry.java File Reference

Classes

- class [hu.afghangoat.LangEntry](#)
A data structure which represents a language with its name and a corresponding ID.

8.15 src/main/java/hu/afghangoat/LangParser.java File Reference

Classes

- class [hu.afghangoat.LangParser](#)

The component responsible for loading and parsing the given languages from an XML format.

8.16 src/main/java/hu/afghangoat/Main.java File Reference

Classes

- class [hu.afghangoat.Main](#)

8.17 src/main/java/hu/afghangoat/simulators/MouseEventSimulator.java File Reference

Classes

- class [hu.afghangoat.simulators.MouseEventSimulator](#)

A utility class which helps in simulation user mouse clicks.

Packages

- package [hu.afghangoat.simulators](#)

8.18 src/main/java/hu/afghangoat/views/CreditsPanel.java File Reference

Classes

- class [hu.afghangoat.views.CreditsPanel](#)

The panel class which is supposed to show the users who worked on the project.

Packages

- package [hu.afghangoat.views](#)

8.19 src/main/java/hu/afghangoat/views/EndGamePanel.java File Reference

Classes

- class [hu.afghangoat.views.EndGamePanel](#)

The panel which shows the final game UI.

Packages

- package [hu.afghangoat.views](#)

8.20 src/main/java/hu/afghangoat/views/GamePanel.java File Reference

Classes

- class [hu.afghangoat.views.GamePanel](#)
The panel which commences the main game logic.

Packages

- package [hu.afghangoat.views](#)

8.21 src/main/java/hu/afghangoat/views/HowToPanel.java File Reference

Classes

- class [hu.afghangoat.views.HowToPanel](#)
The panel provides a standard description about the game as well as how to play it.

Packages

- package [hu.afghangoat.views](#)

8.22 src/main/java/hu/afghangoat/views/MainWindow.java File Reference

Classes

- class [hu.afghangoat.views.MainWindow](#)
Handles the view switching logic between the games.

Packages

- package [hu.afghangoat.views](#)

8.23 src/main/java/hu/afghangoat/views/MenuPanel.java File Reference

Classes

- class [hu.afghangoat.views.MenuPanel](#)
The panel provides a main menu interface for the user where the user can select the subpanel for visiting.

Packages

- package [hu.afghangoat.views](#)

8.24 src/main/java/hu/afghangoat/views/SettingsPanel.java File Reference

Classes

- class [hu.afghangoat.views.SettingsPanel](#)
The panel provides UI interface for the visual and game settings.

Packages

- package [hu.afghangoat.views](#)

8.25 src/main/java/hu/afghangoat/views/TopListPanel.java File Reference

Classes

- class [hu.afghangoat.views.TopListPanel](#)
Displays those who earned the most score in the game.

Packages

- package [hu.afghangoat.views](#)

8.26 src/main/java/hu/afghangoat/views/ViewInterface.java File Reference

Classes

- class [hu.afghangoat.views.ViewInterface](#)
An interface for views.

Packages

- package [hu.afghangoat.views](#)

8.27 src/main/java/hu/afghangoat/widgets/BackButton.java File Reference

Classes

- class [hu.afghangoat.widgets.BackButton](#)
A button which's sole goal is to take the user back to the main menu.

Packages

- package [hu.afghangoat.widgets](#)

8.28 src/main/java/hu/afghangoat/widgets/FancyButton.java File Reference

Classes

- class [hu.afghangoat.widgets.FancyButton](#)
A button which has a gradient background and theme-wise.

Packages

- package [hu.afghangoat.widgets](#)

8.29 src/main/java/hu/afghangoat/widgets/GradientPanel.java File Reference

Classes

- class [hu.afghangoat.widgets.GradientPanel](#)
A Swing panel class which can have a theme-wise gradient background.

Packages

- package [hu.afghangoat.widgets](#)

8.30 src/main/java/hu/afghangoat/widgets/GuessMap.java File Reference

Classes

- class [hu.afghangoat.widgets.GuessMap](#)
A Swing component that displays an interactive map for guessing locations.

Packages

- package [hu.afghangoat.widgets](#)

8.31 src/main/java/hu/afghangoat/widgets/ScrollableImage.java File Reference

Classes

- class [hu.afghangoat.widgets.ScrollableImage](#)
A scrollable image which can be used to render a panorama image.

Packages

- package [hu.afghangoat.widgets](#)

8.32 src/main/java/hu/afghangoat/widgets/ScrollableImageFrame.java File Reference

Classes

- class [hu.afghangoat.widgets.ScrollableImageFrame](#)
A scrollable image holder which command the scrolling and the offsetting of the held image.

Packages

- package [hu.afghangoat.widgets](#)

8.33 src/main/java/hu/afghangoat/widgets/StyleWidget.java File Reference

Classes

- class [hu.afghangoat.widgets.StyleWidget](#)
Holds information about a single theme.

Packages

- package [hu.afghangoat.widgets](#)

8.34 src/test/java/BlockChainTest.java File Reference

Classes

- class [BlockChainTest](#)

8.35 src/test/java/CoordinatesTest.java File Reference

Classes

- class [CoordinatesTest](#)

8.36 src/test/java/WidgetsTest.java File Reference

Classes

- class [WidgetsTest](#)

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