ODE Framework

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Chapter 5

Namespace Documentation

5.1 Package age

Packages

- package clock
- package event
- package gui
- package log
- package port
- package task

Classes

- class AGEException
- class Client

5.2 Package age.clock

Classes

- class Alarm
- class Clock
- interface Task

5.3 Package age.event

Classes

- enum Button
- class Event
- class Events
- interface Handler
- enum Key
- enum Type

5.4 Package age.gui

Classes

- class Dock
- enum Flag
- class Handling
- class Rendering
- class Widget
- class Widgets
- class Window

5.5 Package age.log

Classes

- enum Level
- class Log

5.6 Package age.port

Packages

- package jogl

Classes

- interface Graphics
- interface Port
- interface Renderable

5.7 Package age.port.jogl

Classes

- class JOGLEventListener
- class JOGLGraphics
- class JOGLPort
- class JOGLRenderListener

5.8 Package age.task

Classes

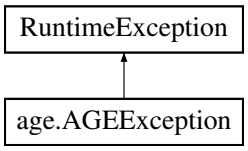
- interface Task
- class Tasks

Chapter 6

Class Documentation

6.1 age.AGEException Class Reference

Inheritance diagram for age.AGEException:



Public Member Functions

- AGEException ()
- AGEException (Throwable cause)
- AGEException (String message)
- AGEException (String message, Throwable cause)

Static Private Attributes

- static final long serialVersionUID = 1L

6.1.1 Constructor & Destructor Documentation

6.1.1.1 AGEException() [1/4]

```
age.AGEException.AGEException ( )
```

6.1.1.2 AGEException() [2/4]

```
age.AGEException.AGEException (
            Throwable cause )
```

6.1.1.3 AGEException() [3/4]

```
age.AGEException.AGEException (
            String message )
```

6.1.1.4 AGEException() [4/4]

```
age.AGEException.AGEException (
            String message,
            Throwable cause )
```

6.1.2 Member Data Documentation

6.1.2.1 serialVersionUID

```
final long age.AGEException.serialVersionUID = 1L  [static], [private]
```

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

- D:/GIT/repos/ODE/age/age/AGEException.java

6.2 age.clock.Alarm Class Reference

Public Member Functions

- void init (long nanotime)
- void update (long nanotime)

Package Functions

- Alarm (long nanoperiod, Task task)

Private Member Functions

- void trigger (int count, float dT)

Private Attributes

- long nanoperiod
- Task task
- long mark

6.2.1 Constructor & Destructor Documentation

6.2.1.1 Alarm()

```
age.clock.Alarm.Alarm (
            long nanoperiod,
            Task task )  [package]
```

6.2.2 Member Function Documentation

6.2.2.1 init()

```
void age.clock.Alarm.init (
            long nanotime )
```

6.2.2.2 trigger()

```
void age.clock.Alarm.trigger (
            int count,
            float dT )  [private]
```

6.2.2.3 update()

```
void age.clock.Alarm.update (
            long nanotime )
```

6.2.3 Member Data Documentation

6.2.3.1 mark

```
long age.clock.Alarm.mark  [private]
```

6.2.3.2 nanoperiod

```
long age.clock.Alarm.nanoperiod  [private]
```

6.2.3.3 task

```
Task age.clock.Alarm.task  [private]
```

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

- D:/GIT/repos/ODE/age/age/clock/Alarm.java

6.3 age.event.Button Enum Reference

Public Attributes

- NONE
- BTN1
- BTN2
- BTN3
- BTN4
- BTN5
- BTN6
- BTN7
- BTN8

6.3.1 Member Data Documentation

6.3.1.1 BTN1

```
age.event.Button.BTN1
```

6.3.1.2 BTN2

```
age.event.Button.BTN2
```

6.3.1.3 BTN3

```
age.event.Button.BTN3
```

6.3.1.4 BTN4

```
age.event.Button.BTN4
```

6.3.1.5 BTN5

```
age.event.Button.BTN5
```

6.3.1.6 BTN6

```
age.event.Button.BTN6
```

6.3.1.7 BTN7

```
age.event.Button.BTN7
```

6.3.1.8 BTN8

```
age.event.Button.BTN8
```

6.3.1.9 NONE

```
age.event.Button.NONE
```

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

- D:/GIT/repos/ODE/age/age/event/Button.java

6.4 age.Client Class Reference

Public Member Functions

- void run ()
- void shutdown ()

Static Public Member Functions

- static void main (String[ ] args)

Private Member Functions

- void setup ()
- void setupGUI ()
- void toggleSysmenu ()
- void loop ()
- void render (int count, long nanoperiod, float dT)
- void update (int count, long nanoperiod, float dT)

Private Attributes

- Clock clock = new Clock()
- Events events = new Events()
- Widgets widgets = new Widgets()
- Tasks tasks = new Tasks()
- Port port = new JOGLPort()
- boolean running = false
- Widget sysMenuFrame

6.4.1 Member Function Documentation

6.4.1.1 loop()

```
void age.Client.loop ( )  [private]
```

6.4.1.2 main()

```
static void age.Client.main (
            String[] args )  [static]
```

6.4.1.3 render()

```
void age.Client.render (
            int count,
            long nanoperiod,
            float dT )  [private]
```

6.4.1.4 run()

```
void age.Client.run ( )
```

6.4.1.5 setup()

```
void age.Client.setup ( )  [private]
```

6.4.1.6 setupGUI()

```
void age.Client.setupGUI ( )  [private]
```

6.4.1.7 shutdown()

```
void age.Client.shutdown ( )
```

6.4.1.8 toggleSysmenu()

```
void age.Client.toggleSysmenu ( )  [private]
```

6.4.1.9 update()

```
void age.Client.update (
            int count,
            long nanoperiod,
            float dT )  [private]
```

6.4.2 Member Data Documentation

6.4.2.1 clock

```
Clock age.Client.clock = new Clock()  [private]
```

6.4.2.2 events

```
Events age.Client.events = new Events()  [private]
```

6.4.2.3 port

```
Port age.Client.port = new JOGLPort()  [private]
```

6.4.2.4 running

```
boolean age.Client.running = false  [private]
```

6.4.2.5 sysMenuFrame

```
Widget age.Client.sysMenuFrame  [private]
```

6.4.2.6 tasks

```
Tasks age.Client.tasks = new Tasks()  [private]
```

6.4.2.7 widgets

```
Widgets age.Client.widgets = new Widgets()  [private]
```

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

- D:/GIT/repos/ODE/age/age/Client.java

6.5 age.clock.Clock Class Reference

Public Member Functions

- void add (long nanoperiod, Task task)
- void addFPS (int fps, Task task)
- void init ()
- void update ()

Private Attributes

- final List< Alarm > alarms = new ArrayList<>()

6.5.1 Member Function Documentation

6.5.1.1 add()

```
void age.clock.Clock.add (
            long nanoperiod,
            Task task )
```

6.5.1.2 addFPS()

```
void age.clock.Clock.addFPS (
            int fps,
            Task task )
```

6.5.1.3 init()

```
void age.clock.Clock.init ( )
```

6.5.1.4 update()

```
void age.clock.Clock.update ( )
```

6.5.2 Member Data Documentation

6.5.2.1 alarms

```
final List<Alarm> age.clock.Clock.alarms = new ArrayList<>()  [private]
```

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

- D:/GIT/repos/ODE/age/age/clock/Clock.java

6.6 age.gui.Dock Class Reference

Public Member Functions

- float top ()
- float bottom ()
- float left ()
- float right ()
- void set (Dock dock)
- void set (float left, float right, float top, float bottom)

Private Attributes

- float left = 0
- float right = 0
- float top = 0
- float bottom = 0

6.6.1 Member Function Documentation

6.6.1.1 bottom()

```
float age.gui.Dock.bottom ( )
```

6.6.1.2 left()

```
float age.gui.Dock.left ( )
```

6.6.1.3 right()

```
float age.gui.Dock.right ( )
```

6.6.1.4 set() [1/2]

```
void age.gui.Dock.set (
            Dock dock )
```

6.6.1.5 set() [2/2]

```
void age.gui.Dock.set (
            float left,
            float right,
            float top,
            float bottom )
```

6.6.1.6 top()

```
float age.gui.Dock.top ( )
```

6.6.2 Member Data Documentation

6.6.2.1 bottom

```
float age.gui.Dock.bottom = 0  [private]
```

6.6.2.2 left

```
float age.gui.Dock.left = 0  [private]
```

6.6.2.3 right

```
float age.gui.Dock.right = 0  [private]
```

6.6.2.4 top

```
float age.gui.Dock.top = 0  [private]
```

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

- D:/GIT/repos/ODE/age/age/gui/Dock.java

6.7 age.event.Event Class Reference

Public Member Functions

- void clear ()
- Type type ()
- Key key ()
- char character ()
- Button button ()
- int count ()
- float x ()
- float y ()
- Vector2f position ()
- float width ()
- float height ()
- Vector2f dimension ()
- String command ()
- void keyPressed (Key key, char character)
- void keyReleased (Key key, char character)
- void keyTyped (Key key, char character)
- void pointerEntered (float x, float y)
- void pointerExited (float x, float y)
- void pointerMoved (float x, float y)
- void pointerPressed (Button button, int count, float x, float y)
- void pointerClicked (Button button, int count, float x, float y)
- void pointerReleased (Button button, int count, float x, float y)
- void surfaceResized (float w, float h)
- void surfaceCloseRequest ()
- void taskCommand (String command)

Package Functions

- Event ()

Private Member Functions

- void keyEvent (Type type, Key key, char character)
- void pointerEvent (Type type, Button button, int count, float x, float y)

Private Attributes

- Type type = Type.NONE
- Key key = Key.NONE
- char character = '\0'
- Button button = Button.NONE
- int count = -1
- Vector2f position = new Vector2f()
- Vector2f dimension = new Vector2f()
- String command = null

6.7.1 Constructor & Destructor Documentation

6.7.1.1 Event()

```
age.event.Event.Event ( )  [package]
```

6.7.2 Member Function Documentation

6.7.2.1 button()

```
Button age.event.Event.button ( )
```

6.7.2.2 character()

```
char age.event.Event.character ( )
```

6.7.2.3 clear()

```
void age.event.Event.clear ( )
```

6.7.2.4 command()

```
String age.event.Event.command ( )
```

6.7.2.5 count()

```
int age.event.Event.count ( )
```

6.7.2.6 dimension()

```
Vector2f age.event.Event.dimension ( )
```

6.7.2.7 height()

```
float age.event.Event.height ( )
```

6.7.2.8 key()

```
Key age.event.Event.key ( )
```

6.7.2.9 keyEvent()

```
void age.event.Event.keyEvent (
            Type type,
            Key key,
            char character )  [private]
```

6.7.2.10 keyPressed()

```
void age.event.Event.keyPressed (
            Key key,
            char character )
```

6.7.2.11 keyReleased()

```
void age.event.Event.keyReleased (
            Key key,
            char character )
```

6.7.2.12 keyTyped()

```
void age.event.Event.keyTyped (
            Key key,
            char character )
```

6.7.2.13 pointerClicked()

```
void age.event.Event.pointerClicked (
            Button button,
            int count,
            float x,
            float y )
```

6.7.2.14 pointerEntered()

```
void age.event.Event.pointerEntered (
            float x,
            float y )
```

6.7.2.15 pointerEvent()

```
void age.event.Event.pointerEvent (
            Type type,
            Button button,
            int count,
            float x,
            float y )  [private]
```

6.7.2.16 pointerExited()

```
void age.event.Event.pointerExited (
            float x,
            float y )
```

6.7.2.17 pointerMoved()

```
void age.event.Event.pointerMoved (
            float x,
            float y )
```

6.7.2.18 pointerPressed()

```
void age.event.Event.pointerPressed (
            Button button,
            int count,
            float x,
            float y )
```

6.7.2.19 pointerReleased()

```
void age.event.Event.pointerReleased (
            Button button,
            int count,
            float x,
            float y )
```

6.7.2.20 position()

```
Vector2f age.event.Event.position ( )
```

6.7.2.21 surfaceCloseRequest()

```
void age.event.Event.surfaceCloseRequest ( )
```

6.7.2.22 surfaceResized()

```
void age.event.Event.surfaceResized (
            float w,
            float h )
```

6.7.2.23 taskCommand()

```
void age.event.Event.taskCommand (
            String command )
```

6.7.2.24 type()

```
Type age.event.Event.type ( )
```

6.7.2.25 width()

```
float age.event.Event.width ( )
```

6.7.2.26 x()

```
float age.event.Event.x ( )
```

6.7.2.27 y()

```
float age.event.Event.y ( )
```

6.7.3 Member Data Documentation

6.7.3.1 button

```
Button age.event.Event.button = Button.NONE  [private]
```

6.7.3.2 character

```
char age.event.Event.character = '\0'  [private]
```

6.7.3.3 command

```
String age.event.Event.command = null  [private]
```

6.7.3.4 count

```
int age.event.Event.count = -1  [private]
```

6.7.3.5 dimension

```
Vector2f age.event.Event.dimension = new Vector2f()  [private]
```

6.7.3.6 key

```
Key age.event.Event.key = Key.NONE  [private]
```

6.7.3.7 position

```
Vector2f age.event.Event.position = new Vector2f()  [private]
```

6.7.3.8 type

```
Type age.event.Event.type = Type.NONE  [private]
```

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

- D:/GIT/repos/ODE/age/age/event/Event.java

6.8 age.event.Events Class Reference

Public Member Functions

- void assign (Type type, Handler handler)
- void postKeyPressed (Key key, char character)
- void postKeyReleased (Key key, char character)
- void postKeyTyped (Key key, char character)
- void postPointerEntered (float x, float y)
- void postPointerExited (float x, float y)
- void postPointerMoved (float x, float y)
- void postPointerPressed (Button button, int count, float x, float y)
- void postPointerReleased (Button button, int count, float x, float y)
- void postPointerClicked (Button button, int count, float x, float y)
- void postSurfaceResized (float w, float h)
- void postSurfaceCloseRequest ()
- void postTaskCommand (String command)
- void update ()

Private Member Functions

- void handle (Event event)
- void post (Event event)
- Event alloc ()
- void free (Event event)

Private Attributes

- final Queue< Event > cache = new LinkedList<>()
- final List< Event > inbox = new ArrayList<>()
- final List< Event > outbox = new ArrayList<>()
- final Map< Type, List< Handler > > handlers = new EnumMap<>(Type.class)

6.8.1 Member Function Documentation

6.8.1.1 alloc()

```
Event age.event.Events.alloc ( )  [private]
```

6.8.1.2 assign()

```
void age.event.Events.assign (
            Type type,
            Handler handler )
```

6.8.1.3 free()

```
void age.event.Events.free (
            Event event )  [private]
```

6.8.1.4 handle()

```
void age.event.Events.handle (
            Event event )  [private]
```

6.8.1.5 post()

```
void age.event.Events.post (
            Event event )  [private]
```

6.8.1.6 postKeyPressed()

```
void age.event.Events.postKeyPressed (
            Key key,
            char character )
```

6.8.1.7 postKeyReleased()

```
void age.event.Events.postKeyReleased (
            Key key,
            char character )
```

6.8.1.8 postKeyTyped()

```
void age.event.Events.postKeyTyped (
            Key key,
            char character )
```

6.8.1.9 postPointerClicked()

```
void age.event.Events.postPointerClicked (
            Button button,
            int count,
            float x,
            float y )
```

6.8.1.10 postPointerEntered()

```
void age.event.Events.postPointerEntered (
            float x,
            float y )
```

6.8.1.11 postPointerExited()

```
void age.event.Events.postPointerExited (
            float x,
            float y )
```

6.8.1.12 postPointerMoved()

```
void age.event.Events.postPointerMoved (
            float x,
            float y )
```

6.8.1.13 postPointerPressed()

```
void age.event.Events.postPointerPressed (
            Button button,
            int count,
            float x,
            float y )
```

6.8.1.14 postPointerReleased()

```
void age.event.Events.postPointerReleased (
            Button button,
            int count,
            float x,
            float y )
```

6.8.1.15 postSurfaceCloseRequest()

```
void age.event.Events.postSurfaceCloseRequest ( )
```

6.8.1.16 postSurfaceResized()

```
void age.event.Events.postSurfaceResized (
            float w,
            float h )
```

6.8.1.17 postTaskCommand()

```
void age.event.Events.postTaskCommand (
            String command )
```

6.8.1.18 update()

```
void age.event.Events.update ( )
```

6.8.2 Member Data Documentation

6.8.2.1 cache

```
final Queue<Event> age.event.Events.cache = new LinkedList<>()  [private]
```

6.8.2.2 handlers

```
final Map<Type, List<Handler> > age.event.Events.handlers = new EnumMap<>(Type.class)  [private]
```

6.8.2.3 inbox

```
final List<Event> age.event.Events.inbox = new ArrayList<>()  [private]
```

6.8.2.4 outbox

```
final List<Event> age.event.Events.outbox = new ArrayList<>()  [private]
```

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

- D:/GIT/repos/ODE/age/age/event/Events.java

6.9 age.gui.Flag Enum Reference

Public Attributes

- BOX
- FRAME
- BUTTON
- CANVAS
- TITLE
- HOVERED
- HIDDEN

6.9.1 Member Data Documentation

6.9.1.1 BOX

```
age.gui.Flag.BOX
```

6.9.1.2 BUTTON

```
age.gui.Flag.BUTTON
```

6.9.1.3 CANVAS

```
age.gui.Flag.CANVAS
```

6.9.1.4 FRAME

```
age.gui.Flag.FRAME
```

6.9.1.5 HIDDEN

```
age.gui.Flag.HIDDEN
```

6.9.1.6 HOVERED

```
age.gui.Flag.HOVERED
```

6.9.1.7 TITLE

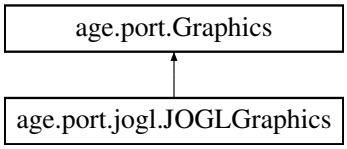
```
age.gui.Flag.TITLE
```

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

- D:/GIT/repos/ODE/age/age/gui/Flag.java

6.10 age.port.Graphics Interface Reference

Inheritance diagram for age.port.Graphics:



Public Member Functions

- void mode2D ()
- void pushTransformation ()
- void popTransformation ()
- void color (Color4f c)
- void color (float r, float g, float b)
- void color (float r, float g, float b, float a)
- void translate (Vector2f pos)
- void translate (float x, float y)
- void rectangle (Vector2f dim, boolean hollow)
- void rectangle (Vector2f pos, Vector2f dim, boolean hollow)
- void rectangle (float x, float y, float w, float h, boolean hollow)
- void text (float x, float y, String text)
- void texture (float x, float y, float w, float h, String texture)

6.10.1 Member Function Documentation

6.10.1.1 color() [1/3]

```
void age.port.Graphics.color (
            Color4f c )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.2 color() [2/3]

```
void age.port.Graphics.color (
            float r,
            float g,
            float b )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.3 color() [3/3]

```
void age.port.Graphics.color (
            float r,
            float g,
            float b,
            float a )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.4 mode2D()

```
void age.port.Graphics.mode2D ( )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.5 popTransformation()

```
void age.port.Graphics.popTransformation ( )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.6 pushTransformation()

```
void age.port.Graphics.pushTransformation ( )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.7 rectangle() [1/3]

```
void age.port.Graphics.rectangle (
            float x,
            float y,
            float w,
            float h,
            boolean hollow )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.8 rectangle() [2/3]

```
void age.port.Graphics.rectangle (
            Vector2f dim,
            boolean hollow )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.9 rectangle() [3/3]

```
void age.port.Graphics.rectangle (
            Vector2f pos,
            Vector2f dim,
            boolean hollow )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.10 text()

```
void age.port.Graphics.text (
            float x,
            float y,
            String text )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.11 texture()

```
void age.port.Graphics.texture (
            float x,
            float y,
            float w,
            float h,
            String texture )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.12 translate() [1/2]

```
void age.port.Graphics.translate (
            float x,
            float y )
```

Implemented in age.port.jogl.JOGLGraphics.

6.10.1.13 translate() [2/2]

```
void age.port.Graphics.translate (
            Vector2f pos )
```

Implemented in age.port.jogl.JOGLGraphics.

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

- D:/GIT/repos/ODE/age/age/port/Graphics.java

6.11 age.event.Handler Interface Reference

Public Member Functions

- void handle (Event event)

6.11.1 Member Function Documentation

6.11.1.1 handle()

```
void age.event.Handler.handle (
            Event event )
```

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

- D:/GIT/repos/ODE/age/age/event/Handler.java

6.12 age.gui.Handling Class Reference

Public Member Functions

- Handling (Widgets widgets)
- void assign (Events events)
- void handleKeyboard (Event e)
- void handlePointer (Event e)
- void handleSurface (Event e)

Private Member Functions

- void pressedFrameToFront (Event e)
- void buttonClickAction (Event e)
- void startFrameSizeAction (Event e)
- void startFrameDragAction (Event e)
- void updateActionState (Event e, String action)
- void updateFrameAction (Event e)
- void stopFrameAction (Event e)
- Widget hovered (Vector2f pos, Widget widget)

Private Attributes

- Events events
- final Widgets widgets
- Widget hovered = null
- Widget dragged = null
- String action = null
- final Vector2f ref = new Vector2f()
- final Vector2f tmp = new Vector2f()

6.12.1 Constructor & Destructor Documentation

6.12.1.1 Handling()

```
age.gui.Handling.Handling (
            Widgets widgets )
```

6.12.2 Member Function Documentation

6.12.2.1 assign()

```
void age.gui.Handling.assign (
            Events events )
```

6.12.2.2 buttonClickAction()

```
void age.gui.Handling.buttonClickAction (
            Event e )  [private]
```

6.12.2.3 handleKeyboard()

```
void age.gui.Handling.handleKeyboard (
            Event e )
```

6.12.2.4 handlePointer()

```
void age.gui.Handling.handlePointer (
            Event e )
```

6.12.2.5 handleSurface()

```
void age.gui.Handling.handleSurface (
            Event e )
```

6.12.2.6 hovered()

```
Widget age.gui.Handling.hovered (
            Vector2f pos,
            Widget widget )  [private]
```

6.12.2.7 pressedFrameToFront()

```
void age.gui.Handling.pressedFrameToFront (
            Event e )  [private]
```

6.12.2.8 startFrameDragAction()

```
void age.gui.Handling.startFrameDragAction (
            Event e )  [private]
```

6.12.2.9 startFrameSizeAction()

```
void age.gui.Handling.startFrameSizeAction (
            Event e )  [private]
```

6.12.2.10 stopFrameAction()

```
void age.gui.Handling.stopFrameAction (
            Event e )  [private]
```

6.12.2.11 updateActionState()

```
void age.gui.Handling.updateActionState (
            Event e,
            String action )  [private]
```

6.12.2.12 updateFrameAction()

```
void age.gui.Handling.updateFrameAction (
            Event e )  [private]
```

6.12.3 Member Data Documentation

6.12.3.1 action

```
String age.gui.Handling.action = null  [private]
```

6.12.3.2 dragged

```
Widget age.gui.Handling.dragged = null  [private]
```

6.12.3.3 events

```
Events age.gui.Handling.events  [private]
```

6.12.3.4 hovered

```
Widget age.gui.Handling.hovered = null  [private]
```

6.12.3.5 ref

```
final Vector2f age.gui.Handling.ref = new Vector2f()  [private]
```

6.12.3.6 tmp

```
final Vector2f age.gui.Handling.tmp = new Vector2f()  [private]
```

6.12.3.7 widgets

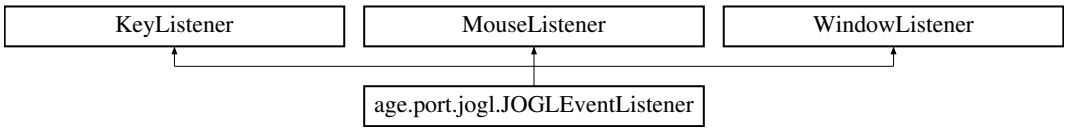
```
final Widgets age.gui.Handling.widgets  [private]
```

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

- D:/GIT/repos/ODE/age/age/gui/Handling.java

6.13 age.port.jogl.JOGLEventListener Class Reference

Inheritance diagram for age.port.jogl.JOGLEventListener:



Public Member Functions

- void assign (Events events)
- void mouseClicked (MouseEvent e)
- void mouseEntered (MouseEvent e)
- void mouseExited (MouseEvent e)
- void mousePressed (MouseEvent e)
- void mouseReleased (MouseEvent e)
- void mouseMoved (MouseEvent e)
- void mouseDragged (MouseEvent e)
- void mouseWheelMoved (MouseEvent e)
- void keyPressed (KeyEvent e)
- void keyReleased (KeyEvent e)
- void windowResized (WindowEvent e)
- void windowMoved (WindowEvent e)
- void windowDestroyNotify (WindowEvent e)
- void windowDestroyed (WindowEvent e)
- void windowGainedFocus (WindowEvent e)
- void windowLostFocus (WindowEvent e)
- void windowRepaint (WindowUpdateEvent e)

Private Member Functions

- void handleSurfaceCloseRequest (Event e)
- Button translateButton (short button)
- Key translateKey (short key)

Private Attributes

- Events events = null

6.13.1 Member Function Documentation

6.13.1.1 assign()

```
void age.port.jogl.JOGLEventListener.assign (
            Events events )
```

6.13.1.2 handleSurfaceCloseRequest()

```
void age.port.jogl.JOGLEventListener.handleSurfaceCloseRequest (
            Event e )  [private]
```

6.13.1.3 keyPressed()

```
void age.port.jogl.JOGLEventListener.keyPressed (
            KeyEvent e )
```

6.13.1.4 keyReleased()

```
void age.port.jogl.JOGLEventListener.keyReleased (
            KeyEvent e )
```

6.13.1.5 mouseClicked()

```
void age.port.jogl.JOGLEventListener.mouseClicked (
            MouseEvent e )
```

6.13.1.6 mouseDragged()

```
void age.port.jogl.JOGLEventListener.mouseDragged (
            MouseEvent e )
```

6.13.1.7 mouseEntered()

```
void age.port.jogl.JOGLEventListener.mouseEntered (
            MouseEvent e )
```

6.13.1.8 mouseExited()

```
void age.port.jogl.JOGLEventListener.mouseExited (
            MouseEvent e )
```

6.13.1.9 mouseMoved()

```
void age.port.jogl.JOGLEventListener.mouseMoved (
            MouseEvent e )
```

6.13.1.10 mousePressed()

```
void age.port.jogl.JOGLEventListener.mousePressed (
            MouseEvent e )
```

6.13.1.11 mouseReleased()

```
void age.port.jogl.JOGLEventListener.mouseReleased (
            MouseEvent e )
```

6.13.1.12 mouseWheelMoved()

```
void age.port.jogl.JOGLEventListener.mouseWheelMoved (
            MouseEvent e )
```

6.13.1.13 translateButton()

```
Button age.port.jogl.JOGLEventListener.translateButton (
            short button )  [private]
```

6.13.1.14 translateKey()

```
Key age.port.jogl.JOGLEventListener.translateKey (
            short key )  [private]
```

6.13.1.15 windowDestroyed()

```
void age.port.jogl.JOGLEventListener.windowDestroyed (
            WindowEvent e )
```

6.13.1.16 windowDestroyNotify()

```
void age.port.jogl.JOGLEventListener.windowDestroyNotify (
            WindowEvent e )
```

6.13.1.17 windowGainedFocus()

```
void age.port.jogl.JOGLEventListener.windowGainedFocus (
            WindowEvent e )
```

6.13.1.18 windowLostFocus()

```
void age.port.jogl.JOGLEventListener.windowLostFocus (
            WindowEvent e )
```

6.13.1.19 windowMoved()

```
void age.port.jogl.JOGLEventListener.windowMoved (
            WindowEvent e )
```

6.13.1.20 windowRepaint()

```
void age.port.jogl.JOGLEventListener.windowRepaint (
            WindowUpdateEvent e )
```

6.13.1.21 windowResized()

```
void age.port.jogl.JOGLEventListener.windowResized (
            WindowEvent e )
```

6.13.2 Member Data Documentation

6.13.2.1 events

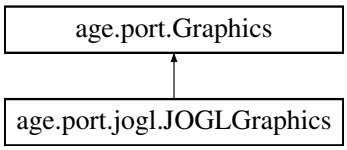
```
Events age.port.jogl.JOGLEventListener.events = null  [private]
```

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

- D:/GIT/repos/ODE/age/age/port/jogl/JOGLEventListener.java

6.14 age.port.jogl.JOGLGraphics Class Reference

Inheritance diagram for age.port.jogl.JOGLGraphics:



Public Member Functions

- void assign (GLAutoDrawable drawable)
- void init ()
- void clear ()
- void mode2D ()
- void mode3D (float fovy, float near, float far)
- void pushTransformation ()
- void popTransformation ()
- void translate (Vector2f t)
- void translate (float x, float y)
- void color (Color4f c)
- void color (float r, float g, float b)
- void color (float r, float g, float b, float a)
- void rectangle (Vector2f dim, boolean hollow)
- void rectangle (Vector2f pos, Vector2f dim, boolean hollow)
- void rectangle (float x, float y, float w, float h, boolean hollow)
- void text (float x, float y, String text)
- void texture (float x, float y, float w, float h, String texture)

Private Attributes

- GLAutoDrawable drawable = null
- GL2 gl = null
- GLU glu = null
- TextRenderer titleText
- Map< String, Texture > textures = new HashMap<>()

6.14.1 Member Function Documentation

6.14.1.1 assign()

```
void age.port.jogl.JOGLGraphics.assign (
            GLAutoDrawable drawable )
```

6.14.1.2 clear()

```
void age.port.jogl.JOGLGraphics.clear ( )
```

6.14.1.3 color() [1/3]

```
void age.port.jogl.JOGLGraphics.color (
            Color4f c )
```

Implements age.port.Graphics.

6.14.1.4 color() [2/3]

```
void age.port.jogl.JOGLGraphics.color (
            float r,
            float g,
            float b )
```

Implements age.port.Graphics.

6.14.1.5 color() [3/3]

```
void age.port.jogl.JOGLGraphics.color (
            float r,
            float g,
            float b,
            float a )
```

Implements age.port.Graphics.

6.14.1.6 init()

```
void age.port.jogl.JOGLGraphics.init ( )
```

6.14.1.7 mode2D()

```
void age.port.jogl.JOGLGraphics.mode2D ( )
```

Implements age.port.Graphics.

6.14.1.8 mode3D()

```
void age.port.jogl.JOGLGraphics.mode3D (
            float fovy,
            float near,
            float far )
```

6.14.1.9 popTransformation()

```
void age.port.jogl.JOGLGraphics.popTransformation ( )
```

Implements age.port.Graphics.

6.14.1.10 pushTransformation()

```
void age.port.jogl.JOGLGraphics.pushTransformation ( )
```

Implements age.port.Graphics.

6.14.1.11 rectangle() [1/3]

```
void age.port.jogl.JOGLGraphics.rectangle (
            float x,
            float y,
            float w,
            float h,
            boolean hollow )
```

Implements age.port.Graphics.

6.14.1.12 rectangle() [2/3]

```
void age.port.jogl.JOGLGraphics.rectangle (
            Vector2f dim,
            boolean hollow )
```

Implements age.port.Graphics.

6.14.1.13 rectangle() [3/3]

```
void age.port.jogl.JOGLGraphics.rectangle (
            Vector2f pos,
            Vector2f dim,
            boolean hollow )
```

Implements age.port.Graphics.

6.14.1.14 text()

```
void age.port.jogl.JOGLGraphics.text (
            float x,
            float y,
            String text )
```

Implements age.port.Graphics.

6.14.1.15 texture()

```
void age.port.jogl.JOGLGraphics.texture (
            float x,
            float y,
            float w,
            float h,
            String texture )
```

Implements age.port.Graphics.

6.14.1.16 translate() [1/2]

```
void age.port.jogl.JOGLGraphics.translate (
            float x,
            float y )
```

Implements age.port.Graphics.

6.14.1.17 translate() [2/2]

```
void age.port.jogl.JOGLGraphics.translate (
            Vector2f t )
```

Implements age.port.Graphics.

6.14.2 Member Data Documentation

6.14.2.1 drawable

```
GLAutoDrawable age.port.jogl.JOGLGraphics.drawable = null  [private]
```

6.14.2.2 gl

```
GL2 age.port.jogl.JOGLGraphics.gl = null  [private]
```

6.14.2.3 glu

```
GLU age.port.jogl.JOGLGraphics.glu = null  [private]
```

6.14.2.4 textures

```
Map<String, Texture> age.port.jogl.JOGLGraphics.textures = new HashMap<>()  [private]
```

6.14.2.5 titleText

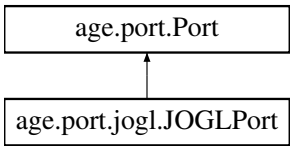
```
TextRenderer age.port.jogl.JOGLGraphics.titleText  [private]
```

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

- D:/GIT/repos/ODE/age/age/port/jogl/JOGLGraphics.java

6.15 age.port.jogl.JOGLPort Class Reference

Inheritance diagram for age.port.jogl.JOGLPort:



Public Member Functions

- void assign (Events events)
- String title ()
- void title (String title)
- boolean maximized ()
- void maximized (boolean maximized)
- boolean fullscreen ()
- void fullscreen (boolean fullscreen)
- boolean visible ()
- void visible (boolean visible)
- float width ()
- float height ()
- void size (float width, float height)
- void add (Renderable renderable)
- List< Renderable > get ()
- void create ()
- void render ()

Private Attributes

- GLWindow window = null
- JOGLEventListener eventListener = null
- JOGLRenderListener renderListener = null
- final List< Renderable > renderables = new ArrayList<>()
- final List< Renderable > renderables_ro = Collections.unmodifiableList(renderables)

6.15.1 Member Function Documentation

6.15.1.1 add()

```
void age.port.jogl.JOGLPort.add (
            Renderable renderable )
```

Implements age.port.Port.

6.15.1.2 assign()

```
void age.port.jogl.JOGLPort.assign (
            Events events )
```

Implements age.port.Port.

6.15.1.3 create()

```
void age.port.jogl.JOGLPort.create ( )
```

Implements age.port.Port.

6.15.1.4 fullscreen() [1/2]

```
boolean age.port.jogl.JOGLPort.fullscreen ( )
```

Implements age.port.Port.

6.15.1.5 fullscreen() [2/2]

```
void age.port.jogl.JOGLPort.fullscreen (
            boolean fullscreen )
```

Implements age.port.Port.

6.15.1.6 get()

```
List< Renderable > age.port.jogl.JOGLPort.get ( )
```

6.15.1.7 height()

```
float age.port.jogl.JOGLPort.height ( )
```

Implements age.port.Port.

6.15.1.8 maximized() [1/2]

```
boolean age.port.jogl.JOGLPort.maximized ( )
```

Implements age.port.Port.

6.15.1.9 maximized() [2/2]

```
void age.port.jogl.JOGLPort.maximized (
            boolean maximized )
```

Implements age.port.Port.

6.15.1.10 render()

```
void age.port.jogl.JOGLPort.render ( )
```

Implements age.port.Port.

6.15.1.11 size()

```
void age.port.jogl.JOGLPort.size (
            float width,
            float height )
```

Implements age.port.Port.

6.15.1.12 title() [1/2]

```
String age.port.jogl.JOGLPort.title ( )
```

Implements age.port.Port.

6.15.1.13 title() [2/2]

```
void age.port.jogl.JOGLPort.title (
            String title )
```

Implements age.port.Port.

6.15.1.14 visible() [1/2]

```
boolean age.port.jogl.JOGLPort.visible ( )
```

Implements age.port.Port.

6.15.1.15 visible() [2/2]

```
void age.port.jogl.JOGLPort.visible (
            boolean visible )
```

Implements age.port.Port.

6.15.1.16 width()

```
float age.port.jogl.JOGLPort.width ( )
```

Implements age.port.Port.

6.15.2 Member Data Documentation

6.15.2.1 eventListener

```
JOGLEventListener age.port.jogl.JOGLPort.eventListener = null  [private]
```

6.15.2.2 renderables

```
final List<Renderable> age.port.jogl.JOGLPort.renderables = new ArrayList<>()  [private]
```

6.15.2.3 renderables_ro

```
final List<Renderable> age.port.jogl.JOGLPort.renderables_ro = Collections.unmodifiable↩
List(renderables)  [private]
```

6.15.2.4 renderListener

```
JOGLRenderListener age.port.jogl.JOGLPort.renderListener = null  [private]
```

6.15.2.5 window

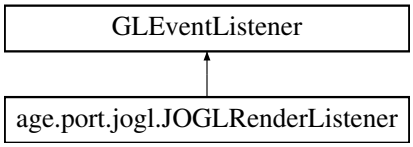
```
GLWindow age.port.jogl.JOGLPort.window = null  [private]
```

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

- D:/GIT/repos/ODE/age/age/port/jogl/JOGLPort.java

6.16 age.port.jogl.JOGLRenderListener Class Reference

Inheritance diagram for age.port.jogl.JOGLRenderListener:



Public Member Functions

- JOGLRenderListener (JOGLPort port)
- void init (GLAutoDrawable drawable)
- void reshape (GLAutoDrawable drawable, int x, int y, int width, int height)
- void display (GLAutoDrawable drawable)
- void dispose (GLAutoDrawable drawable)

Private Attributes

- final JOGLPort port
- final JOGLGraphics graphics

6.16.1 Constructor & Destructor Documentation

6.16.1.1 JOGLRenderListener()

```
age.port.jogl.JOGLRenderListener.JOGLRenderListener (
            JOGLPort port )
```

6.16.2 Member Function Documentation

6.16.2.1 display()

```
void age.port.jogl.JOGLRenderListener.display (
            GLAutoDrawable drawable )
```

6.16.2.2 dispose()

```
void age.port.jogl.JOGLRenderListener.dispose (
            GLAutoDrawable drawable )
```

6.16.2.3 init()

```
void age.port.jogl.JOGLRenderListener.init (
            GLAutoDrawable drawable )
```

6.16.2.4 reshape()

```
void age.port.jogl.JOGLRenderListener.reshape (
            GLAutoDrawable drawable,
            int x,
            int y,
            int width,
            int height )
```

6.16.3 Member Data Documentation

6.16.3.1 graphics

```
final JOGLGraphics age.port.jogl.JOGLRenderListener.graphics  [private]
```

6.16.3.2 port

```
final JOGLPort age.port.jogl.JOGLRenderListener.port  [private]
```

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

- D:/GIT/repos/ODE/age/age/port/jogl/JOGLRenderListener.java

6.17 age.event.Key Enum Reference

Public Attributes

- NONE
- ESCAPE
- F1
- F2
- F3
- F4
- F5
- F6
- F7
- F8
- F9
- F10
- F11
- F12
- PRINT_SCREEN
- SCROLL_LOCK
- PAUSE
- _1
- _2
- _3
- _4
- _5

- _6
- _7
- _8
- _9
- _0
- BACK_SPACE
- TAB
- ENTER
- SPACE
- Q
- W
- E
- R
- T
- Z
- U
- I
- O
- P
- A
- S
- D
- F
- G
- H
- J
- K
- L
- Y
- X
- C
- V
- B
- N
- M
- PLUS
- MINUS
- CAPS_LOCK
- SHIFT
- CONTROL
- SYSTEM
- ALT
- MENU
- INSERT
- DELETE
- POS1
- END
- PAGE_UP
- PAGE_DOWN
- UP
- DOWN
- LEFT
- RIGHT
- NUM_LOCK
- DIVIDE

- MULTIPLY
- SUBTRACT
- ADD
- DECIMAL
- NP_7
- NP_8
- NP_9
- NP_4
- NP_5
- NP_6
- NP_1
- NP_2
- NP_3
- NP_0

6.17.1 Member Data Documentation

6.17.1.1 _0

```
age.event.Key._0
```

6.17.1.2 _1

```
age.event.Key._1
```

6.17.1.3 _2

```
age.event.Key._2
```

6.17.1.4 _3

```
age.event.Key._3
```

6.17.1.5 _4

```
age.event.Key._4
```

6.17.1.6 _5

```
age.event.Key._5
```

6.17.1.7 _6

```
age.event.Key._6
```

6.17.1.8 _7

age.event.Key._7

6.17.1.9 _8

age.event.Key._8

6.17.1.10 _9

age.event.Key._9

6.17.1.11 A

age.event.Key.A

6.17.1.12 ADD

age.event.Key.ADD

6.17.1.13 ALT

age.event.Key.ALT

6.17.1.14 B

age.event.Key.B

6.17.1.15 BACK_SPACE

age.event.Key.BACK_SPACE

6.17.1.16 C

age.event.Key.C

6.17.1.17 CAPS_LOCK

age.event.Key.CAPS_LOCK

6.17.1.18 CONTROL

age.event.Key.CONTROL

6.17.1.19 D

age.event.Key.D

6.17.1.20 DECIMAL

age.event.Key.DECIMAL

6.17.1.21 DELETE

age.event.Key.DELETE

6.17.1.22 DIVIDE

age.event.Key.DIVIDE

6.17.1.23 DOWN

age.event.Key.DOWN

6.17.1.24 E

age.event.Key.E

6.17.1.25 END

age.event.Key.END

6.17.1.26 ENTER

age.event.Key.ENTER

6.17.1.27 ESCAPE

age.event.Key.ESCAPE

6.17.1.28 F

`age.event.Key.F`

6.17.1.29 F1

`age.event.Key.F1`

6.17.1.30 F10

`age.event.Key.F10`

6.17.1.31 F11

`age.event.Key.F11`

6.17.1.32 F12

`age.event.Key.F12`

6.17.1.33 F2

`age.event.Key.F2`

6.17.1.34 F3

`age.event.Key.F3`

6.17.1.35 F4

`age.event.Key.F4`

6.17.1.36 F5

`age.event.Key.F5`

6.17.1.37 F6

`age.event.Key.F6`

6.17.1.38 F7

age.event.Key.F7

6.17.1.39 F8

age.event.Key.F8

6.17.1.40 F9

age.event.Key.F9

6.17.1.41 G

age.event.Key.G

6.17.1.42 H

age.event.Key.H

6.17.1.43 I

age.event.Key.I

6.17.1.44 INSERT

age.event.Key.INSERT

6.17.1.45 J

age.event.Key.J

6.17.1.46 K

age.event.Key.K

6.17.1.47 L

age.event.Key.L

6.17.1.48 LEFT

age.event.Key.LEFT

6.17.1.49 M

age.event.Key.M

6.17.1.50 MENU

age.event.Key.MENU

6.17.1.51 MINUS

age.event.Key.MINUS

6.17.1.52 MULTIPLY

age.event.Key.MULTIPLY

6.17.1.53 N

age.event.Key.N

6.17.1.54 NONE

age.event.Key.NONE

6.17.1.55 NP_0

age.event.Key.NP_0

6.17.1.56 NP_1

age.event.Key.NP_1

6.17.1.57 NP_2

age.event.Key.NP_2

6.17.1.58 NP_3

age.event.Key.NP_3

6.17.1.59 NP_4

age.event.Key.NP_4

6.17.1.60 NP_5

age.event.Key.NP_5

6.17.1.61 NP_6

age.event.Key.NP_6

6.17.1.62 NP_7

age.event.Key.NP_7

6.17.1.63 NP_8

age.event.Key.NP_8

6.17.1.64 NP_9

age.event.Key.NP_9

6.17.1.65 NUM_LOCK

age.event.Key.NUM_LOCK

6.17.1.66 O

age.event.Key.O

6.17.1.67 P

age.event.Key.P

6.17.1.68 PAGE_DOWN

age.event.Key.PAGE_DOWN

6.17.1.69 PAGE_UP

age.event.Key.PAGE_UP

6.17.1.70 PAUSE

age.event.Key.PAUSE

6.17.1.71 PLUS

age.event.Key.PLUS

6.17.1.72 POS1

age.event.Key.POS1

6.17.1.73 PRINT_SCREEN

age.event.Key.PRINT_SCREEN

6.17.1.74 Q

age.event.Key.Q

6.17.1.75 R

age.event.Key.R

6.17.1.76 RIGHT

age.event.Key.RIGHT

6.17.1.77 S

age.event.Key.S

6.17.1.78 SCROLL_LOCK

age.event.Key.SCROLL_LOCK

6.17.1.79 SHIFT

age.event.Key.SHIFT

6.17.1.80 SPACE

age.event.Key.SPACE

6.17.1.81 SUBTRACT

age.event.Key.SUBTRACT

6.17.1.82 SYSTEM

age.event.Key.SYSTEM

6.17.1.83 T

age.event.Key.T

6.17.1.84 TAB

age.event.Key.TAB

6.17.1.85 U

age.event.Key.U

6.17.1.86 UP

age.event.Key.UP

6.17.1.87 V

age.event.Key.V

6.17.1.88 W

`age.event.Key.W`

6.17.1.89 X

`age.event.Key.X`

6.17.1.90 Y

`age.event.Key.Y`

6.17.1.91 Z

`age.event.Key.Z`

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

- D:/GIT/repos/ODE/age/age/event/Key.java

6.18 age.log.Level Enum Reference

Public Attributes

- ERROR
- WARNING
- INFO
- DEBUG

6.18.1 Member Data Documentation

6.18.1.1 DEBUG

`age.log.Level.DEBUG`

6.18.1.2 ERROR

`age.log.Level.ERROR`

6.18.1.3 INFO

`age.log.Level.INFO`

6.18.1.4 WARNING

`age.log.Level.WARNING`

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

- D:/GIT/repos/ODE/age/age/log/Level.java

6.19 age.log.Log Class Reference

Public Member Functions

- void clear ()
- void enable (Level ... levels)
- void disable (Level ... levels)
- boolean trace ()
- void trace (boolean trace)
- String format ()
- void format (String format)

Static Public Member Functions

- static void configure (String path)
- static Log get (String instance)
- static void log (Level level, String message, Object ... params)
- static void info (String message, Object ... params)
- static void warn (String message, Object ... params)
- static void error (String message, Object ... params)
- static void debug (String message, Object ... params)
- static void log (String instance, Level level, String message, Object ... params)
- static void info (String instance, String message, Object ... params)
- static void warn (String instance, String message, Object ... params)
- static void error (String instance, String message, Object ... params)
- static void debug (String instance, String message, Object ... params)

Private Member Functions

- Log ()
- Log (Log parent)
- void write (Level level, String message, Object ... params)

Private Attributes

- boolean trace = false
- Set< Level > levels = null
- String format = null

Static Private Attributes

- static final Map< String, Log > map = new HashMap<>()

6.19.1 Constructor & Destructor Documentation

6.19.1.1 Log() [1/2]

```
age.log.Log.Log ( )  [private]
```

6.19.1.2 Log() [2/2]

```
age.log.Log.Log (
            Log parent )  [private]
```

6.19.2 Member Function Documentation

6.19.2.1 clear()

```
void age.log.Log.clear ( )
```

6.19.2.2 configure()

```
static void age.log.Log.configure (
            String path )  [static]
```

6.19.2.3 debug() [1/2]

```
static void age.log.Log.debug (
            String instance,
            String message,
            Object ...  params )  [static]
```

6.19.2.4 debug() [2/2]

```
static void age.log.Log.debug (
            String message,
            Object ...  params )  [static]
```

6.19.2.5 disable()

```
void age.log.Log.disable (
            Level ...  levels )
```

6.19.2.6 enable()

```
void age.log.Log.enable (
            Level ...  levels )
```

6.19.2.7 error() [1/2]

```
static void age.log.Log.error (
            String instance,
            String message,
            Object ...  params )  [static]
```

6.19.2.8 error() [2/2]

```
static void age.log.Log.error (
            String message,
            Object ...  params )  [static]
```

6.19.2.9 format() [1/2]

```
String age.log.Log.format ( )
```

6.19.2.10 format() [2/2]

```
void age.log.Log.format (
            String format )
```

6.19.2.11 get()

```
static Log age.log.Log.get (
            String instance )  [static]
```

6.19.2.12 info() [1/2]

```
static void age.log.Log.info (
            String instance,
            String message,
            Object ...  params )  [static]
```

6.19.2.13 info() [2/2]

```
static void age.log.Log.info (
            String message,
            Object ...  params )  [static]
```

6.19.2.14 log() [1/2]

```
static void age.log.Log.log (
            Level level,
            String message,
            Object ... params )  [static]
```

6.19.2.15 log() [2/2]

```
static void age.log.Log.log (
            String instance,
            Level level,
            String message,
            Object ... params )  [static]
```

6.19.2.16 trace() [1/2]

```
boolean age.log.Log.trace ( )
```

6.19.2.17 trace() [2/2]

```
void age.log.Log.trace (
            boolean trace )
```

6.19.2.18 warn() [1/2]

```
static void age.log.Log.warn (
            String instance,
            String message,
            Object ... params )  [static]
```

6.19.2.19 warn() [2/2]

```
static void age.log.Log.warn (
            String message,
            Object ... params )  [static]
```

6.19.2.20 write()

```
void age.log.Log.write (
            Level level,
            String message,
            Object ... params )  [private]
```

6.19.3 Member Data Documentation

6.19.3.1 format

```
String age.log.Log.format = null  [private]
```

6.19.3.2 levels

```
Set<Level> age.log.Log.levels = null  [private]
```

6.19.3.3 map

```
final Map<String, Log> age.log.Log.map = new HashMap<>()  [static], [private]
```

6.19.3.4 trace

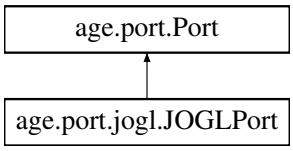
```
boolean age.log.Log.trace = false  [private]
```

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

- D:/GIT/repos/ODE/age/age/log/Log.java

6.20 age.port.Port Interface Reference

Inheritance diagram for age.port.Port:



Public Member Functions

- void assign (Events events)
- String title ()
- void title (String title)
- boolean maximized ()
- void maximized (boolean maximized)
- boolean fullscreen ()
- void fullscreen (boolean fullscreen)
- boolean visible ()
- void visible (boolean visible)
- float width ()
- float height ()
- void size (float width, float height)
- void add (Renderable renderable)
- void create ()
- void render ()

6.20.1 Member Function Documentation

6.20.1.1 add()

```
void age.port.Port.add (
            Renderable renderable )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.2 assign()

```
void age.port.Port.assign (
            Events events )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.3 create()

```
void age.port.Port.create ( )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.4 fullscreen() [1/2]

```
boolean age.port.Port.fullscreen ( )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.5 fullscreen() [2/2]

```
void age.port.Port.fullscreen (
            boolean fullscreen )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.6 height()

```
float age.port.Port.height ( )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.7 maximized() [1/2]

```
boolean age.port.Port.maximized ( )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.8 maximized() [2/2]

```
void age.port.Port.maximized (
            boolean maximized )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.9 render()

```
void age.port.Port.render ( )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.10 size()

```
void age.port.Port.size (
            float width,
            float height )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.11 title() [1/2]

```
String age.port.Port.title ( )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.12 title() [2/2]

```
void age.port.Port.title (
            String title )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.13 visible() [1/2]

```
boolean age.port.Port.visible ( )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.14 visible() [2/2]

```
void age.port.Port.visible (
            boolean visible )
```

Implemented in age.port.jogl.JOGLPort.

6.20.1.15 width()

```
float age.port.Port.width ( )
```

Implemented in age.port.jogl.JOGLPort.

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

- D:/GIT/repos/ODE/age/age/port/Port.java

6.21 age.port.Renderable Interface Reference

Public Member Functions

- void render (Graphics g)

6.21.1 Member Function Documentation

6.21.1.1 render()

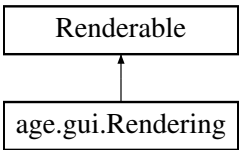
```
void age.port.Renderable.render (
            Graphics g )
```

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

- D:/GIT/repos/ODE/age/age/port/Renderable.java

6.22 age.gui.Rendering Class Reference

Inheritance diagram for age.gui.Rendering:



Public Member Functions

- Rendering (Widgets widgets)
- void render (Graphics g)

Private Member Functions

- void render (Graphics g, Widget widget)
- void renderWidget (Graphics g, Widget widget)
- void renderChildren (Graphics g, List< Widget > children)

Private Attributes

- final Widgets widgets

6.22.1 Constructor & Destructor Documentation

6.22.1.1 Rendering()

```
age.gui.Rendering.Rendering (
            Widgets widgets )
```

6.22.2 Member Function Documentation

6.22.2.1 render() [1/2]

```
void age.gui.Rendering.render (
            Graphics g )
```

6.22.2.2 render() [2/2]

```
void age.gui.Rendering.render (
            Graphics g,
            Widget widget )  [private]
```

6.22.2.3 renderChildren()

```
void age.gui.Rendering.renderChildren (
            Graphics g,
            List< Widget > children )  [private]
```

6.22.2.4 renderWidget()

```
void age.gui.Rendering.renderWidget (
            Graphics g,
            Widget widget )  [private]
```

6.22.3 Member Data Documentation

6.22.3.1 widgets

```
final Widgets age.gui.Rendering.widgets  [private]
```

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

- D:/GIT/repos/ODE/age/age/gui/Rendering.java

6.23 age.clock.Task Interface Reference

Public Member Functions

- void run (int count, long nanoperiod, float dT)

6.23.1 Member Function Documentation

6.23.1.1 run()

```
void age.clock.Task.run (
            int count,
            long nanoperiod,
            float dT )
```

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

- D:/GIT/repos/ODE/age/age/clock/Task.java

6.24 age.task.Task Interface Reference

Public Member Functions

- void perform ()

6.24.1 Member Function Documentation

6.24.1.1 perform()

```
void age.task.Task.perform ( )
```

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

- D:/GIT/repos/ODE/age/age/task/Task.java

6.25 age.task.Tasks Class Reference

Public Member Functions

- void assign (Port port)
- void assign (Client client)
- void assign (Events events)
- Tasks ()
- void put (String command)
- void assign (String command, Task task)
- void update ()

Private Member Functions

- void handleEvent (Event e)
- void construct ()
- void perform (String command)
- void toggleFullscreen ()
- void shutdown ()

Private Attributes

- final List< String > inbox = new ArrayList<>()
- final List< String > outbox = new ArrayList<>()
- final Map< String, Task > tasks = new HashMap<>()
- Port port
- Client client

6.25.1 Constructor & Destructor Documentation

6.25.1.1 Tasks()

```
age.task.Tasks.Tasks ( )
```

6.25.2 Member Function Documentation

6.25.2.1 assign() [1/4]

```
void age.task.Tasks.assign (
            Client client )
```

6.25.2.2 assign() [2/4]

```
void age.task.Tasks.assign (
            Events events )
```

6.25.2.3 assign() [3/4]

```
void age.task.Tasks.assign (
            Port port )
```

6.25.2.4 assign() [4/4]

```
void age.task.Tasks.assign (
            String command,
            Task task )
```

6.25.2.5 construct()

```
void age.task.Tasks.construct ( )  [private]
```

6.25.2.6 handleEvent()

```
void age.task.Tasks.handleEvent (
            Event e )  [private]
```

6.25.2.7 perform()

```
void age.task.Tasks.perform (
            String command )  [private]
```

6.25.2.8 put()

```
void age.task.Tasks.put (
            String command )
```

6.25.2.9 shutdown()

```
void age.task.Tasks.shutdown ( )  [private]
```

6.25.2.10 toggleFullscreen()

```
void age.task.Tasks.toggleFullscreen ( )  [private]
```

6.25.2.11 update()

```
void age.task.Tasks.update ( )
```

6.25.3 Member Data Documentation

6.25.3.1 client

```
Client age.task.Tasks.client  [private]
```

6.25.3.2 inbox

```
final List<String> age.task.Tasks.inbox = new ArrayList<>()  [private]
```

6.25.3.3 outbox

```
final List<String> age.task.Tasks.outbox = new ArrayList<>()  [private]
```

6.25.3.4 port

```
Port age.task.Tasks.port  [private]
```

6.25.3.5 tasks

```
final Map<String, Task> age.task.Tasks.tasks = new HashMap<>()  [private]
```

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

- D:/GIT/repos/ODE/age/age/task/Tasks.java

6.26 age.event.Type Enum Reference

Public Attributes

- NONE
- KEY_PRESSED
- KEY_RELEASED
- KEY_TYPED
- POINTER_ENTERED
- POINTER_EXITED
- POINTER_PRESSED
- POINTER_RELEASED
- POINTER_CLICKED
- POINTER_MOVED
- SURFACE_RESIZED
- SURFACE_CLOSE_REQUEST
- TASK_COMMAND

6.26.1 Member Data Documentation

6.26.1.1 KEY_PRESSED

```
age.event.Type.KEY_PRESSED
```

6.26.1.2 KEY_RELEASED

```
age.event.Type.KEY_RELEASED
```

6.26.1.3 KEY_TYPED

age.event.Type.KEY_TYPED

6.26.1.4 NONE

age.event.Type.NONE

6.26.1.5 POINTER_CLICKED

age.event.Type.POINTER_CLICKED

6.26.1.6 POINTER_ENTERED

age.event.Type.POINTER_ENTERED

6.26.1.7 POINTER_EXITED

age.event.Type.POINTER_EXITED

6.26.1.8 POINTER_MOVED

age.event.Type.POINTER_MOVED

6.26.1.9 POINTER_PRESSED

age.event.Type.POINTER_PRESSED

6.26.1.10 POINTER_RELEASED

age.event.Type.POINTER_RELEASED

6.26.1.11 SURFACE_CLOSE_REQUEST

age.event.Type.SURFACE_CLOSE_REQUEST

6.26.1.12 SURFACE_RESIZED

age.event.Type.SURFACE_RESIZED

6.26.1.13 TASK_COMMAND

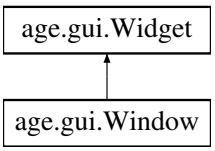
`age.event.Type.TASK_COMMAND`

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

- D:/GIT/repos/ODE/age/age/event/Type.java

6.27 age.gui.Widget Class Reference

Inheritance diagram for age.gui.Widget:



Public Member Functions

- Widget (Flag ... flags)
- float x ()
- float y ()
- float width ()
- float height ()
- Vector2f position ()
- Vector2f dimension ()
- Dock dock ()
- void dock (Dock dock)
- void dock (float top, float bottom, float left, float right)
- void position (Vector2f position)
- void position (float x, float y)
- void positionAdd (Vector2f position)
- void positionAdd (float x, float y)
- void dimension (Vector2f dimension)
- void dimension (float width, float height)
- void dimensionAdd (Vector2f dimension)
- void dimensionAdd (float width, float height)
- Set< Flag > flags ()
- void flag (Flag ... flags)
- void clear (Flag ... flags)
- boolean match (Flag ... flags)
- Widget parent ()
- List< Widget > children ()
- void add (Widget child)
- void add (int idx, Widget child)
- void remove ()
- void toFront ()
- String text ()
- void text (String text)
- String image ()
- void image (String image)
- String command ()
- void command (String command)

Private Member Functions

- void resized (float dx, float dy)
- void parentResized (float dx, float dy)

Private Attributes

- final Set< Flag > flags = EnumSet.noneOf(Flag.class)
- final Set< Flag > flags_ro = Collections.unmodifiableSet(flags)
- final Vector2f position = new Vector2f()
- final Vector2f dimension = new Vector2f()
- final Dock dock = new Dock()
- Widget parent = null
- final List< Widget > children = new ArrayList<>(10)
- final List< Widget > children_ro = Collections.unmodifiableList(children)
- String text = null
- String image = null
- String command = null

6.27.1 Constructor & Destructor Documentation

6.27.1.1 Widget()

```
age.gui.Widget.Widget (
            Flag ...  flags )
```

6.27.2 Member Function Documentation

6.27.2.1 add() [1/2]

```
void age.gui.Widget.add (
            int idx,
            Widget child )
```

6.27.2.2 add() [2/2]

```
void age.gui.Widget.add (
            Widget child )
```

6.27.2.3 children()

```
List< Widget > age.gui.Widget.children ( )
```

6.27.2.4 clear()

```
void age.gui.Widget.clear (
            Flag ...  flags )
```

6.27.2.5 command() [1/2]

```
String age.gui.Widget.command ( )
```

6.27.2.6 command() [2/2]

```
void age.gui.Widget.command (
            String command )
```

6.27.2.7 dimension() [1/3]

```
Vector2f age.gui.Widget.dimension ( )
```

6.27.2.8 dimension() [2/3]

```
void age.gui.Widget.dimension (
            float width,
            float height )
```

6.27.2.9 dimension() [3/3]

```
void age.gui.Widget.dimension (
            Vector2f dimension )
```

6.27.2.10 dimensionAdd() [1/2]

```
void age.gui.Widget.dimensionAdd (
            float width,
            float height )
```

6.27.2.11 dimensionAdd() [2/2]

```
void age.gui.Widget.dimensionAdd (
            Vector2f dimension )
```

6.27.2.12 dock() [1/3]

```
Dock age.gui.Widget.dock ( )
```

6.27.2.13 dock() [2/3]

```
void age.gui.Widget.dock (
            Dock dock )
```

6.27.2.14 dock() [3/3]

```
void age.gui.Widget.dock (
            float top,
            float bottom,
            float left,
            float right )
```

6.27.2.15 flag()

```
void age.gui.Widget.flag (
            Flag ...  flags )
```

6.27.2.16 flags()

```
Set< Flag > age.gui.Widget.flags ( )
```

6.27.2.17 height()

```
float age.gui.Widget.height ( )
```

6.27.2.18 image() [1/2]

```
String age.gui.Widget.image ( )
```

6.27.2.19 image() [2/2]

```
void age.gui.Widget.image (
            String image )
```

6.27.2.20 match()

```
boolean age.gui.Widget.match (
            Flag ...  flags )
```

6.27.2.21 parent()

```
Widget age.gui.Widget.parent ( )
```

6.27.2.22 parentResized()

```
void age.gui.Widget.parentResized (
            float dx,
            float dy )  [private]
```

6.27.2.23 position() [1/3]

```
Vector2f age.gui.Widget.position ( )
```

6.27.2.24 position() [2/3]

```
void age.gui.Widget.position (
            float x,
            float y )
```

6.27.2.25 position() [3/3]

```
void age.gui.Widget.position (
            Vector2f position )
```

6.27.2.26 positionAdd() [1/2]

```
void age.gui.Widget.positionAdd (
            float x,
            float y )
```

6.27.2.27 positionAdd() [2/2]

```
void age.gui.Widget.positionAdd (
            Vector2f position )
```

6.27.2.28 remove()

```
void age.gui.Widget.remove ( )
```

6.27.2.29 resized()

```
void age.gui.Widget.resized (
            float dx,
            float dy )  [private]
```

6.27.2.30 text() [1/2]

```
String age.gui.Widget.text ( )
```

6.27.2.31 text() [2/2]

```
void age.gui.Widget.text (
            String text )
```

6.27.2.32 toFront()

```
void age.gui.Widget.toFront ( )
```

6.27.2.33 width()

```
float age.gui.Widget.width ( )
```

6.27.2.34 x()

```
float age.gui.Widget.x ( )
```

6.27.2.35 y()

```
float age.gui.Widget.y ( )
```

6.27.3 Member Data Documentation

6.27.3.1 children

```
final List<Widget> age.gui.Widget.children = new ArrayList<>(10)  [private]
```

6.27.3.2 children_ro

```
final List<Widget> age.gui.Widget.children_ro = Collections.unmodifiableList(children)  [private]
```

6.27.3.3 command

```
String age.gui.Widget.command = null  [private]
```

6.27.3.4 dimension

```
final Vector2f age.gui.Widget.dimension = new Vector2f()  [private]
```

6.27.3.5 dock

```
final Dock age.gui.Widget.dock = new Dock()  [private]
```

6.27.3.6 flags

```
final Set<Flag> age.gui.Widget.flags = EnumSet.noneOf(Flag.class)  [private]
```

6.27.3.7 flags_ro

```
final Set<Flag> age.gui.Widget.flags_ro = Collections.unmodifiableSet(flags)  [private]
```

6.27.3.8 image

```
String age.gui.Widget.image = null  [private]
```

6.27.3.9 parent

```
Widget age.gui.Widget.parent = null  [private]
```

6.27.3.10 position

```
final Vector2f age.gui.Widget.position = new Vector2f()  [private]
```

6.27.3.11 text

```
String age.gui.Widget.text = null  [private]
```

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

- D:/GIT/repos/ODE/age/age/gui/Widget.java

6.28 age.gui.Widgets Class Reference

Public Member Functions

- Widgets ()
- void assign (Port port)
- void assign (Events events)
- Widget root ()

Private Attributes

- Widget root = new Widget()
- Handling handling = new Handling(this)
- Rendering rendering = new Rendering(this)

6.28.1 Constructor & Destructor Documentation

6.28.1.1 Widgets()

```
age.gui.Widgets.Widgets ( )
```

6.28.2 Member Function Documentation

6.28.2.1 assign() [1/2]

```
void age.gui.Widgets.assign (
            Events events )
```

6.28.2.2 assign() [2/2]

```
void age.gui.Widgets.assign (
            Port port )
```

6.28.2.3 root()

```
Widget age.gui.Widgets.root ( )
```

6.28.3 Member Data Documentation

6.28.3.1 handling

```
Handling age.gui.Widgets.handling = new Handling(this)  [private]
```

6.28.3.2 rendering

```
Rendering age.gui.Widgets.rendering = new Rendering(this)  [private]
```

6.28.3.3 root

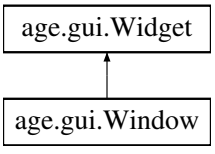
```
Widget age.gui.Widgets.root = new Widget()  [private]
```

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

- D:/GIT/repos/ODE/age/age/gui/Widgets.java

6.29 age.gui.Window Class Reference

Inheritance diagram for age.gui.Window:



Public Member Functions

- Window (Flag ... flags)
- String title ()
- void title (String title)

Public Member Functions inherited from age.gui.Widget

- Widget (Flag ... flags)
- float x ()
- float y ()
- float width ()
- float height ()
- Vector2f position ()
- Vector2f dimension ()
- Dock dock ()
- void dock (Dock dock)
- void dock (float top, float bottom, float left, float right)
- void position (Vector2f position)
- void position (float x, float y)
- void positionAdd (Vector2f position)
- void positionAdd (float x, float y)
- void dimension (Vector2f dimension)
- void dimension (float width, float height)
- void dimensionAdd (Vector2f dimension)
- void dimensionAdd (float width, float height)
- Set< Flag > flags ()
- void flag (Flag ... flags)
- void clear (Flag ... flags)
- boolean match (Flag ... flags)
- Widget parent ()
- List< Widget > children ()
- void add (Widget child)
- void add (int idx, Widget child)
- void remove ()
- void toFront ()
- String text ()
- void text (String text)
- String image ()
- void image (String image)
- String command ()
- void command (String command)

Private Member Functions

- void construct ()

Private Attributes

- Widget title = new Widget()
- Widget size = new Widget()
- Widget close = new Widget()
- Widget page = new Widget()

6.29.1 Constructor & Destructor Documentation

6.29.1.1 Window()

```
age.gui.Window.Window (
            Flag ...  flags )
```

6.29.2 Member Function Documentation

6.29.2.1 construct()

```
void age.gui.Window.construct ( )  [private]
```

6.29.2.2 title() [1/2]

```
String age.gui.Window.title ( )
```

6.29.2.3 title() [2/2]

```
void age.gui.Window.title (
            String title )
```

6.29.3 Member Data Documentation

6.29.3.1 close

```
Widget age.gui.Window.close = new Widget()  [private]
```

6.29.3.2 page

```
Widget age.gui.Window.page = new Widget()  [private]
```

6.29.3.3 size

```
Widget age.gui.Window.size = new Widget()  [private]
```

6.29.3.4 title

```
Widget age.gui.Window.title = new Widget()  [private]
```

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

- D:/GIT/repos/ODE/age/age/gui/Window.java

Chapter 7

File Documentation

7.1 D:/GIT/repos/ODE/age/age/AGEException.java File Reference

Classes

- class age.AGEException

Packages

- package age

7.2 D:/GIT/repos/ODE/age/age/Client.java File Reference

```
import age.port.Port;
```

Classes

- class age.Client

Packages

- package age

7.3 D:/GIT/repos/ODE/age/age/clock/Alarm.java File Reference

Classes

- class age.clock.Alarm

Packages

- package age.clock

7.4 D:/GIT/repos/ODE/age/age/clock/Clock.java File Reference

```
import java.util.ArrayList;
```

Classes

- class age.clock.Clock

Packages

- package age.clock

7.5 D:/GIT/repos/ODE/age/age/clock/Task.java File Reference

Classes

- interface age.clock.Task

Packages

- package age.clock

7.6 D:/GIT/repos/ODE/age/age/task/Task.java File Reference

Classes

- interface age.task.Task

Packages

- package age.task

7.7 D:/GIT/repos/ODE/age/age/event/Button.java File Reference

Classes

- enum age.event.Button

Packages

- package age.event

7.8 D:/GIT/repos/ODE/age/age/event/Event.java File Reference

```
import javax.vecmath.Vector2f;
```

Classes

- class age.event.Event

Packages

- package age.event

7.9 D:/GIT/repos/ODE/age/age/event/Events.java File Reference

```
import java.util.ArrayList;
```

Classes

- class age.event.Events

Packages

- package age.event

7.10 D:/GIT/repos/ODE/age/age/event/Handler.java File Reference

Classes

- interface age.event.Handler

Packages

- package age.event

7.11 D:/GIT/repos/ODE/age/age/event/Key.java File Reference

Classes

- enum age.event.Key

Packages

- package age.event

7.12 D:/GIT/repos/ODE/age/age/event/Type.java File Reference

Classes

- enum age.event.Type

Packages

- package age.event

7.13 D:/GIT/repos/ODE/age/age/gui/Dock.java File Reference

Classes

- class age.gui.Dock

Packages

- package age.gui

7.14 D:/GIT/repos/ODE/age/age/gui/Flag.java File Reference

Classes

- enum age.gui.Flag

Packages

- package age.gui

7.15 D:/GIT/repos/ODE/age/age/gui/Handling.java File Reference

```
import java.util.ArrayList;
```

Classes

- class age.gui.Handling

Packages

- package age.gui

7.16 D:/GIT/repos/ODE/age/age/gui/Rendering.java File Reference

```
import java.util.List;
```

Classes

- class age.gui.Rendering

Packages

- package age.gui

7.17 D:/GIT/repos/ODE/age/age/gui/Widget.java File Reference

```
import java.util.ArrayList;
```

Classes

- class age.gui.Widget

Packages

- package age.gui

7.18 D:/GIT/repos/ODE/age/age/gui/Widgets.java File Reference

```
import age.event.Events;
```

Classes

- class age.gui.Widgets

Packages

- package age.gui

7.19 D:/GIT/repos/ODE/age/age/gui/Window.java File Reference

Classes

- class age.gui.Window

Packages

- package age.gui

7.20 D:/GIT/repos/ODE/age/age/log/Level.java File Reference

Classes

- enum age.log.Level

Packages

- package age.log

7.21 D:/GIT/repos/ODE/age/age/log/Log.java File Reference

```
import java.io.File;
```

Classes

- class age.log.Log

Packages

- package age.log

7.22 D:/GIT/repos/ODE/age/age/port/Graphics.java File Reference

```
import javax.vecmath.Color4f;
```

Classes

- interface age.port.Graphics

Packages

- package age.port

7.23 D:/GIT/repos/ODE/age/age/port/jogl/JOGLEventListener.java File Reference

```
import com.jogamp.newt.Window;
```

Classes

- class age.port.jogl.JOGLEventListener

Packages

- package age.port.jogl

7.24 D:/GIT/repos/ODE/age/age/port/jogl/JOGLGraphics.java File Reference

```
import com.jogamp.opengl.GL2;
```

Classes

- class age.port.jogl.JOGLGraphics

Packages

- package age.port.jogl

7.25 D:/GIT/repos/ODE/age/age/port/jogl/JOGLPort.java File Reference

```
import java.util.ArrayList;
```

Classes

- class age.port.jogl.JOGLPort

Packages

- package age.port.jogl

7.26 D:/GIT/repos/ODE/age/age/port/jogl/JOGLRenderListener.java File Reference

```
import com.jogamp.opengl.GLAutoDrawable;
```

Classes

- class age.port.jogl.JOGLRenderListener

Packages

- package age.port.jogl

7.27 D:/GIT/repos/ODE/age/age/port/Port.java File Reference

```
import age.event.Events;
```

Classes

- interface age.port.Port

Packages

- package age.port

7.28 D:/GIT/repos/ODE/age/age/port/Renderable.java File Reference

Classes

- interface age.port.Renderable

Packages

- package age.port

7.29 D:/GIT/repos/ODE/age/age/task/Tasks.java File Reference

```
import java.util.ArrayList;
```

Classes

- class age.task.Tasks

Packages

- package age.task

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