Arcade

1.0

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Chapter 1

How to implement your own game / library

Game

- First, you wanna create a c++ class implementing the IGameModule interface.
- Next you wanna compile it into a dynamic library (.so file).
- Put that library file in the `games/` folder located at the root of the arcade repository.
  - Note that it must follow the following naming convention : **lib_arcade_$gamename.so**.

Every class contained by the libraries located in the `games/` folder are going to be instanciated using the symbol `createLib` that your library **must** contain.

It should be as following:
```
extern "C" std::unique_ptr<Arcade::Games::IGameModule> createLib(void)
{
    return std::make_unique<MyGameModule>();
}
```

Library

- First, you wanna create a c++ class implementing the IDisplayModule interface.
- Next you wanna compile it into a dynamic library (.so file).
- Put that library file in the `lib/` folder located at the root of the arcade repository.
  - Note that it must follow the following naming convention : **lib_arcade_$libraryname.so**.

Every class contained by the libraries located in the `lib/` folder are going to be instanciated using the symbol `createLib` that your library **must** contain.

It should be as following:
```
extern "C" std::unique_ptr<Arcade::Display::IDisplayModule> createLib(void)
{
    return std::make_unique<MyDisplayModule>();
}
```

Chapter 2

Namespace Index

2.1 Namespace List

Here is a list of all documented namespaces with brief descriptions:

Chapter 3

Hierarchical Index

3.1 Class Hierarchy

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

Chapter 4

Class Index

4.1 Class List

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

Chapter 5

Namespace Documentation

5.1 Arcade Namespace Reference

Namespaces

- Display
- Exceptions
- Games

Classes

- class Core

  Core class that handles all the interactions between the library modules and the game modules.
- struct DLInfos

  Contains information about a given library.
- class DLLoader

  Used for dynamically loading libraries.
- class Logger

  Used to display error messages depending on the set log level.

5.1.1 Detailed Description

Default namespace for the project.

5.2 Arcade::Display Namespace Reference

Classes

- class ADisplayModule

  Abstract class adding utilities and an enum to the IDisplayModule interface.
- class IDisplayModule

  Interface for the display modules used to display things.
- class Ncurses

  Libncurses library.
- class SDL

  SDL library.
- class SFML

  SFML library.

5.2.1 Detailed Description

Contains elements related to the display libraries of the Arcade project.

5.3 Arcade::Exceptions Namespace Reference

Classes

- class ArcadeException

  Base exception class for this projects' exceptions.
- class BadFileException

  Thrown when looking up to an external file that is inexistant.
- class BadInstanciationException

  Thrown when library objects failed to be instanciated.
- class InvalidLibraryException

  Thrown when trying to use an invalid library file.

5.3.1 Detailed Description

Contains a loadout of exceptions that are used in the Arcade project.

5.4 Arcade::Games Namespace Reference

Classes

- class AGameModule

  Abstract class implementing key methods of the IGameModule interface.
- class Centipede

  Centipede game.
- class IGameModule

  Interface for the game modules used to handle games.
- class Nibbler

  Nibbler game.
- class Pacman

  Pacman game.
- class Qix

  Qix game.
- class Solarfox

  Solarfox game.

5.4.1 Detailed Description

Contains elements related to the game libraries of the Arcade project.

Chapter 6

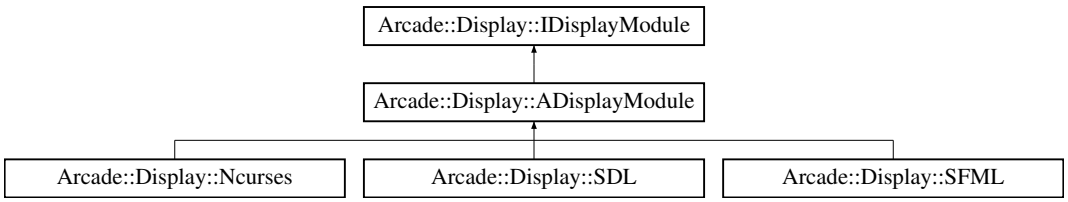
Class Documentation

6.1 Arcade::Display::ADisplayModule Class Reference

Abstract class adding utilities and an enum to the IDisplayModule interface.

`#include <ADisplayModule.hpp>`

Inheritance diagram for Arcade::Display::ADisplayModule:



Public Member Functions

- ADisplayModule (const std::string &libName)
  Construct a new ADisplayModule object.
- const std::string & getLibName () const final
  Gets the library name.

Protected Types

- enum SystemKeys {
  ESCAPE = Keys::KEYS_END, M, R, F1,
  F2, F3, F4, SYSKEYS_END }
  Additional keys that are used by the library.

Additional Inherited Members

6.1.1 Detailed Description

Abstract class adding utilities and an enum to the IDisplayModule interface.

6.1.2 Member Enumeration Documentation

6.1.2.1 SystemKeys

```
enum Arcade::Display::ADisplayModule::SystemKeys  [protected]
```

Additional keys that are used by the library.

Enumerator

ESCAPE	Escape key.
M	M key.
R	R key.
F1	F1 key.
F2	F2 key.
F3	F3 key.
F4	F4 key.
SYSKEYS_END	Key count.

6.1.3 Constructor & Destructor Documentation

6.1.3.1 ADisplayModule()

```
Arcade::Display::ADisplayModule::ADisplayModule (
            const std::string & libName )
```

Construct a new ADisplayModule object.

Parameters

libName	The library's name

6.1.4 Member Function Documentation

6.1.4.1 getLibName()

```
const std::string& Arcade::Display::ADisplayModule::getLibName ( ) const  [final], [virtual]
```

Gets the library name.

Returns

The library's name

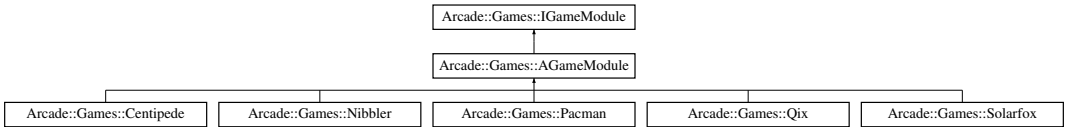
Implements Arcade::Display::IDisplayModule.

6.2 Arcade::Games::AGameModule Class Reference

Abstract class implementing key methods of the IGameModule interface.

`#include <AGameModule.hpp>`

Inheritance diagram for Arcade::Games::AGameModule:



Public Member Functions

- AGameModule (std::string const &libName)
  Construct a new AGameModule object.
- bool loadFromFile (const std::string &filepath) final
  Loads highscores from a file.
- bool loadFromFile () final
  Loads highscores from the default save file.
- bool saveToFile (const std::string &filepath) const final
  Saves highscores to a file.
- bool saveToFile () const final
  Saves highscores from the default save file.
- void setPlayerName (const std::string &name) final
  Sets the player name.
- std::pair< std::string, int > getScore () const final
  Gets the current score.
- std::vector< std::pair< std::string, int > > getBestScores () const final
  Gets the best 16 scores.
- void render (Arcade::Display::IDisplayModule &lib) const override
  Default game implementation (out of order)
- const std::string & getLibName () const final
  Gets the library name.

Protected Member Functions

- void addToBestScores (int nb)
  Adds a score to the scoreboard.
- void drawGameOver (Arcade::Display::IDisplayModule &displayModule) const
  Display game over screen.

Protected Attributes

- int _currentScore

  The current score of the active game session.
- bool _isDead

  True if the player is dead.

6.2.1 Detailed Description

Abstract class implementing key methods of the IGameModule interface.

6.2.2 Constructor & Destructor Documentation

6.2.2.1 AGameModule()

```
Arcade::Games::AGameModule::AGameModule (
            std::string const & libName )
```

Construct a new AGameModule object.

Parameters

libName	The library's name

6.2.3 Member Function Documentation

6.2.3.1 addToBestScores()

```
void Arcade::Games::AGameModule::addToBestScores (
            int nb )  [protected]
```

Adds a score to the scoreboard.

Parameters

nb	The score value

6.2.3.2 drawGameOver()

```
void Arcade::Games::AGameModule::drawGameOver (
            Arcade::Display::IDisplayModule & displayModule ) const  [protected]
```

Display game over screen.

Parameters

displayModule	The display module

6.2.3.3 getBestScores()

```
std::vector<std::pair<std::string, int> > Arcade::Games::AGameModule::getBestScores ( ) const
[final], [virtual]
```

Gets the best 16 scores.

Returns

std::vector<std::pair<std::string, int>> Vector of [name, score] value pairs

Implements Arcade::Games::IGameModule.

6.2.3.4 getLibName()

```
const std::string& Arcade::Games::AGameModule::getLibName ( ) const  [final], [virtual]
```

Gets the library name.

Returns

The library's name

Implements Arcade::Games::IGameModule.

6.2.3.5 getScore()

```
std::pair<std::string, int> Arcade::Games::AGameModule::getScore ( ) const  [final], [virtual]
```

Gets the current score.

Returns

std::pair<std::string, int> [Name, score] value pairs

Implements Arcade::Games::IGameModule.

6.2.3.6 loadFromFile() [1/2]

```
bool Arcade::Games::AGameModule::loadFromFile (
            const std::string & filepath )  [final], [virtual]
```

Loads highscores from a file.

Parameters

filepath	The file path

Returns

true Highscores were loaded
false An error occured

Implements Arcade::Games::IGameModule.

6.2.3.7 loadFromFile() [2/2]

```
bool Arcade::Games::AGameModule::loadFromFile ( )  [final], [virtual]
```

Loads highscores from the default save file.

Returns

true Highscores were loaded
false An error occured

Implements Arcade::Games::IGameModule.

6.2.3.8 render()

```
void Arcade::Games::AGameModule::render (
            Arcade::Display::IDisplayModule & lib ) const  [override], [virtual]
```

Default game implementation (out of order)

Parameters

lib	The display module that will be used to put things on a canvas.

Implements Arcade::Games::IGameModule.

Reimplemented in Arcade::Games::Nibbler, and Arcade::Games::Pacman.

6.2.3.9 saveToFile() [1/2]

```
bool Arcade::Games::AGameModule::saveToFile (
            const std::string & filepath ) const  [final], [virtual]
```

Saves highscores to a file.

Parameters

filepath	The file path

Returns

true Highscores were saved
false An error occured

Implements Arcade::Games::IGameModule.

6.2.3.10 saveToFile() [2/2]

```
bool Arcade::Games::AGameModule::saveToFile ( ) const  [final], [virtual]
```

Saves highscores from the default save file.

Returns

true Highscores were saved
false An error occured

Implements Arcade::Games::IGameModule.

6.2.3.11 setPlayerName()

```
void Arcade::Games::AGameModule::setPlayerName (
            const std::string & name )  [final], [virtual]
```

Sets the player name.

Parameters

name	The player name

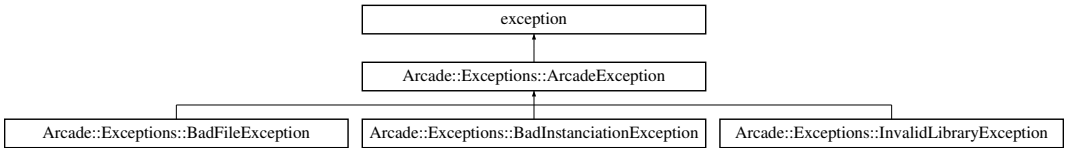
Implements Arcade::Games::IGameModule.

6.3 Arcade::Exceptions::ArcadeException Class Reference

Base exception class for this projects' exceptions.

```
#include <ArcadeException.hpp>
```

Inheritance diagram for Arcade::Exceptions::ArcadeException:



Public Member Functions

- ArcadeException (std::string const &message, std::string const &component)

  Construct a new Arcade Exception object.
- const char * what (void) const noexcept override

  Gets the error message which describe why the exception occured.
- std::string const & getComponent (void) const noexcept

  Gets the name of component where the exception occured.

6.3.1 Detailed Description

Base exception class for this projects' exceptions.

6.3.2 Constructor & Destructor Documentation

6.3.2.1 ArcadeException()

```
Arcade::Exceptions::ArcadeException::ArcadeException (
            std::string const & message,
            std::string const & component )
```

Construct a new Arcade Exception object.

Parameters

message	Message explaining the problem.
component	Additional information on where the problem occured.

6.3.3 Member Function Documentation

6.3.3.1 getComponent()

```
std::string const& Arcade::Exceptions::ArcadeException::getComponent (
            void  ) const  [noexcept]
```

Gets the name of component where the exception occured.

Returns

The component name

6.3.3.2 what()

```
const char* Arcade::Exceptions::ArcadeException::what (
            void  ) const  [override], [noexcept]
```

Gets the error message which describe why the exception occured.

Returns

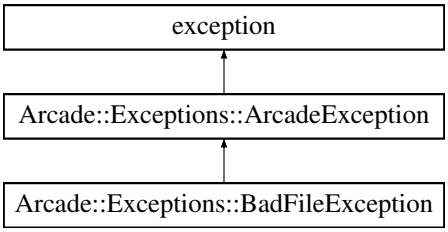
The error message

6.4 Arcade::Exceptions::BadFileException Class Reference

Thrown when looking up to an external file that is inexistant.

`#include <BadFileException.hpp>`

Inheritance diagram for Arcade::Exceptions::BadFileException:



Public Member Functions

- BadFileException (std::string const &message, std::string const &component)
  Construct a new Bad File Exception object.

6.4.1 Detailed Description

Thrown when looking up to an external file that is inexistant.

6.4.2 Constructor & Destructor Documentation

6.4.2.1 BadFileException()

```
Arcade::Exceptions::BadFileException::BadFileException (
            std::string const & message,
            std::string const & component )
```

Construct a new Bad File Exception object.

Parameters

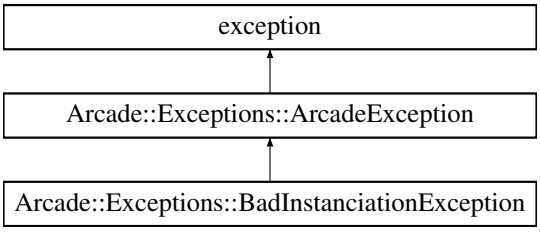
message	Message explaining the problem.
component	Additional information on where the problem occured.

6.5 Arcade::Exceptions::BadInstanciationException Class Reference

Thrown when library objects failed to be instanciated.

`#include <BadInstanciationException.hpp>`

Inheritance diagram for Arcade::Exceptions::BadInstanciationException:



Public Member Functions

- BadInstanciationException (std::string const &message, std::string const &component)
  Construct a new Bad Instanciation Exception object.

6.5.1 Detailed Description

Thrown when library objects failed to be instanciated.

6.5.2 Constructor & Destructor Documentation

6.5.2.1 BadInstanciationException()

```
Arcade::Exceptions::BadInstanciationException::BadInstanciationException (
            std::string const & message,
            std::string const & component )
```

Construct a new Bad Instanciation Exception object.

Parameters

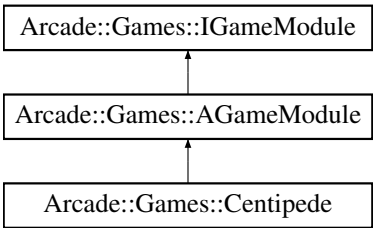
message	Message explaining the problem.
component	Additional information on where the problem occured.

6.6 Arcade::Games::Centipede Class Reference

Centipede game.

`#include <Centipede.hpp>`

Inheritance diagram for Arcade::Games::Centipede:



Public Member Functions

- void reset () final

  Resets and restarts the game.
- void update (const Arcade::Display::IDisplayModule &lib) final

  Updates the game.

Additional Inherited Members

6.6.1 Detailed Description

Centipede game.

6.6.2 Member Function Documentation

6.6.2.1 update()

```
void Arcade::Games::Centipede::update (
            const Arcade::Display::IDisplayModule & lib )  [final], [virtual]
```

Updates the game.

Parameters

lib	The display module that will be used to get events that occured

Implements Arcade::Games::IGameModule.

6.7 Arcade::Core Class Reference

Core class that handles all the interactions between the library modules and the game modules.

`#include <Core.hpp>`

Public Member Functions

- Core (const std::string &startLibraryPath)
  Construct a new Core object.
- void play ()
  Starts the arcade program.

6.7.1 Detailed Description

Core class that handles all the interactions between the library modules and the game modules.

6.7.2 Constructor & Destructor Documentation

6.7.2.1 Core()

```
Arcade::Core::Core (
            const std::string & startLibraryPath )  [explicit]
```

Construct a new Core object.

Parameters

startLibraryPath	The library path that will be first used when the program will be started.

6.8 Arcade::DLInfos Struct Reference

Contains information about a given library.

`#include <DLInfos.h>`

Public Attributes

- std::string path
  Path of the library.
- std::string name

Name of the library
(Arcade::Games::IGameModule::getLibName or Arcade::Display::IDisplayModule::getLibName)

- std::vector< std::pair< std::string, int > > scores

  For Arcade::Games::IGameModule, vector containing the best scores (obtained by Arcade::Games::IGameModule::getBestScores).

  For Arcade::Display::IDisplayModule, ***empty vector****.*

6.8.1 Detailed Description

Contains information about a given library.

6.9 Arcade::DLLoader< T > Class Template Reference

Used for dynamically loading libraries.

`#include <DLLoader.hpp>`

Public Member Functions

- **DLLoader** (DLLoader const &)=delete
- void **operator=** (DLLoader const &)=delete
- std::vector< DLInfos > getLibraries (const std::string &dirPath) const

  Gets the available libraries in a given folder.
- std::unique_ptr< T > loadLibrary (const std::string &path) const

  Loads the given library.

Static Public Member Functions

- static DLLoader const & getInstance (void)

  Gets an instance of this object.

6.9.1 Detailed Description

template<class T>
class Arcade::DLLoader< T >

Used for dynamically loading libraries.

Template Parameters

T	Library class type. **Either Arcade::Games::IGameModule or Arcade::Display::IDisplayModule.**

6.9.2 Member Function Documentation

6.9.2.1 getInstance()

```
template<class T >
static DLLoader const& Arcade::DLLoader< T >::getInstance (
            void  )  [static]
```

Gets an instance of this object.

Returns

The current DLLoader instance.

6.9.2.2 getLibraries()

```
template<class T >
std::vector<DLInfos> Arcade::DLLoader< T >::getLibraries (
            const std::string & dirPath ) const
```

Gets the available libraries in a given folder.

Parameters

dirPath	Folder to lookup

Returns

std::vector<DLInfos> Vector containing informations about the library.

6.9.2.3 loadLibrary()

```
template<class T >
std::unique_ptr<T> Arcade::DLLoader< T >::loadLibrary (
            const std::string & path ) const
```

Loads the given library.

Parameters

path	File containing the library to extract.

Returns

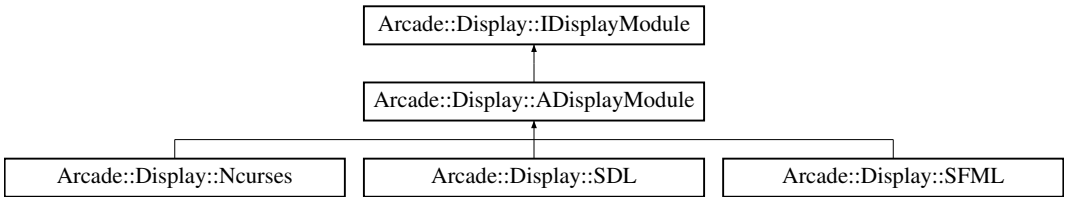
std::unique_ptr<T> Unique pointer to the T instance.

6.10 Arcade::Display::IDisplayModule Class Reference

Interface for the display modules used to display things.

`#include <IDisplayModule.hpp>`

Inheritance diagram for Arcade::Display::IDisplayModule:



Public Types

- enum Colors {
  DEFAULT, BLACK, RED, GREEN,
  YELLOW, BLUE, MAGENTA, CYAN,
  LIGHT_GRAY, DARK_GRAY, LIGHT_RED, LIGHT_GREEN,
  LIGHT_YELLOW, LIGHT_BLUE, LIGHT_MAGENTA, LIGHT_CYAN,
  WHITE, COLORS_END }

  Available colors.
- enum Keys {
  LEFT, RIGHT, UP, DOWN,
  Z, Q, S, D,
  A, E, W, X,
  SPACE, J, K, U,
  I, ENTER, KEYS_END }

  Available keys.

Public Member Functions

- virtual void reset ()=0

  Resets the library.
- virtual void open ()=0

  Opens / initializes the window.
- virtual void close ()=0

  Close / destroy the window.
- virtual bool isOpen () const =0

  Check window status.
- virtual bool switchToNextLib () const =0

  Checks whether you need to change the current display library.
- virtual bool switchToPreviousLib () const =0

  Checks whether you need to change the current display library.

- virtual bool switchToNextGame () const =0

  Checks whether you need to change the current game library.
- virtual bool switchToPreviousGame () const =0

  Checks whether you need to change the current game library.
- virtual bool shouldBeRestarted () const =0

  Checks whether you need to restart the current game.
- virtual bool shouldGoToMenu () const =0

  Checks whether you need to go back to the menu.
- virtual bool shouldExit () const =0

  Checks whether you need to exit the program.
- virtual bool isKeyPressed (IDisplayModule::Keys key) const =0

  Checks whether the current key is being pressed.
- virtual bool isKeyPressedOnce (IDisplayModule::Keys key) const =0

  Checks whether the current key was pressed during the last frame.
- virtual float getDelta () const =0

  Gets the number of frames since last update.
- virtual void clear () const =0

  Clears the canvas. ***Call this after the IDisplayModule::update method.***
- virtual void update ()=0

  Runs an update over the events that occured. ***Call this before the IDisplayModule::clear method.***
- virtual void render () const =0

  Renders the canvas.
- virtual char getKeyCode () const =0

  Gets the last pressed character from the keyboard.
- virtual void setColor (IDisplayModule::Colors color)=0

  Defines the color of the elements that will be drawn.
- virtual void putPixel (float x, float y) const =0

  Displays a pixel.
- virtual void putLine (float x1, float y1, float x2, float y2) const =0

  Displays a line.
- virtual void putRect (float x, float y, float w, float h) const =0

  Displays a rectangle.
- virtual void putFillRect (float x, float y, float w, float h) const =0

  Displays a filled rectangle.
- virtual void putCircle (float x, float y, float rad) const =0

  Displays a cirle.
- virtual void putFillCircle (float x, float y, float rad) const =0

  Displays a filled cirle.
- virtual void putText (const std::string &text, unsigned int size, float x, float y) const =0

  Displays text.
- virtual const std::string & getLibName () const =0

  Gets the library name.

6.10.1 Detailed Description

Interface for the display modules used to display things.

6.10.2 Member Enumeration Documentation

6.10.2.1 Colors

enum Arcade::Display::IDisplayModule::Colors

Available colors.

Enumerator

DEFAULT	The color the window clears to.
BLACK	Black color.
RED	Red color.
GREEN	Green color.
YELLOW	Yellow color.
BLUE	Blue color.
MAGENTA	Magenta color.
CYAN	Cyan color.
LIGHT_GRAY	Light gray color.
DARK_GRAY	Dark gray color.
LIGHT_RED	Light red color.
LIGHT_GREEN	Light green color.
LIGHT_YELLOW	Light yellow color.
LIGHT_BLUE	Light blue color.
LIGHT_MAGENTA	Light magenta color.
LIGHT_CYAN	Light cyan color.
WHITE	White color.
COLORS_END	Color count.

6.10.2.2 Keys

enum Arcade::Display::IDisplayModule::Keys

Available keys.

Enumerator

LEFT	Left key.
RIGHT	Right key.
UP	Up key.
DOWN	Down key.
Z	Z key.
Q	Q key.
S	S key.
D	D key.
A	A key.
E	E key.
W	W key.
X	X key.

Enumerator

SPACE	Space key.
J	J key.
K	K key.
U	U key.
I	I key.
ENTER	Return key.
KEYS_END	Key count.

6.10.3 Member Function Documentation

6.10.3.1 getDelta()

```
virtual float Arcade::Display::IDisplayModule::getDelta ( ) const  [pure virtual]
```

Gets the number of frames since last update.

Returns

float Frame count

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.2 getKeyCode()

```
virtual char Arcade::Display::IDisplayModule::getKeyCode ( ) const  [pure virtual]
```

Gets the last pressed character from the keyboard.

Returns

\0 if nothing was pressed, \b if backspace was pressed, \n if return was pressed, otherwise, a character.

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.3 getLibName()

```
virtual const std::string& Arcade::Display::IDisplayModule::getLibName ( ) const  [pure virtual]
```

Gets the library name.

Returns

The library's name

Implemented in Arcade::Display::ADisplayModule.

6.10.3.4 isKeyPressed()

```
virtual bool Arcade::Display::IDisplayModule::isKeyPressed (
            IDisplayModule::Keys key ) const  [pure virtual]
```

Checks whether the current key is being pressed.

Parameters

key	The key

Returns

true Key is pressed
false Key is not pressed

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.5 isKeyPressedOnce()

```
virtual bool Arcade::Display::IDisplayModule::isKeyPressedOnce (
            IDisplayModule::Keys key ) const  [pure virtual]
```

Checks whether the current key was pressed during the last frame.

Parameters

key	The key

Returns

true Key is pressed
false Key is not pressed

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.6 isOpen()

```
virtual bool Arcade::Display::IDisplayModule::isOpen ( ) const  [pure virtual]
```

Check window status.

Returns

true Window is open
false Window is closed

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.7 putCircle()

```
virtual void Arcade::Display::IDisplayModule::putCircle (
            float x,
            float y,
            float rad ) const  [pure virtual]
```

Displays a cirle.

Parameters

x	X coordinates
y	Y coordinates
rad	Radius of the circle

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.8 putFillCircle()

```
virtual void Arcade::Display::IDisplayModule::putFillCircle (
            float x,
            float y,
            float rad ) const  [pure virtual]
```

Displays a filled cirle.

Parameters

x	X coordinates
y	Y coordinates
rad	Radius of the circle

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.9 putFillRect()

```
virtual void Arcade::Display::IDisplayModule::putFillRect (
            float x,
            float y,
            float w,
            float h ) const  [pure virtual]
```

Displays a filled rectangle.

Parameters

x	X coordinates
y	Y coordinates
w	Width of the rectangle
h	Height of the rectangle

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.10 putLine()

```
virtual void Arcade::Display::IDisplayModule::putLine (
            float x1,
            float y1,
            float x2,
            float y2 ) const  [pure virtual]
```

Displays a line.

Parameters

x1	X coordinates for the first point
y1	Y coordinates for the first point
x2	X coordinates for the second point
y2	Y coordinates for the second point

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.11 putPixel()

```
virtual void Arcade::Display::IDisplayModule::putPixel (
            float x,
            float y ) const  [pure virtual]
```

Displays a pixel.

Parameters

x	X coordinates
y	Y coordinates

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.12 putRect()

```
virtual void Arcade::Display::IDisplayModule::putRect (
            float x,
            float y,
            float w,
            float h ) const  [pure virtual]
```

Displays a rectangle.

Parameters

x	X coordinates
y	Y coordinates
w	Width of the rectangle
h	Height of the rectangle

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.13 putText()

```
virtual void Arcade::Display::IDisplayModule::putText (
            const std::string & text,
            unsigned int size,
            float x,
            float y ) const  [pure virtual]
```

Displays text.

Parameters

text	The text content
size	The text size
x	X coordinates
y	Y coordinates

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.14 setColor()

```
virtual void Arcade::Display::IDisplayModule::setColor (
            IDisplayModule::Colors color )  [pure virtual]
```

Defines the color of the elements that will be drawn.

Parameters

color	The color

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.15 shouldBeRestarted()

```
virtual bool Arcade::Display::IDisplayModule::shouldBeRestarted ( ) const  [pure virtual]
```

Checks whether you need to restart the current game.

Returns

true Restart the game
false Do nothing

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.16 shouldExit()

```
virtual bool Arcade::Display::IDisplayModule::shouldExit ( ) const  [pure virtual]
```

Checks whether you need to exit the program.

Returns

true Exit the program
false Do nothing

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.17 shouldGoToMenu()

```
virtual bool Arcade::Display::IDisplayModule::shouldGoToMenu ( ) const  [pure virtual]
```

Checks whether you need to go back to the menu.

Returns

true Go back to menu
false Do nothing

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.18 switchToNextGame()

```
virtual bool Arcade::Display::IDisplayModule::switchToNextGame ( ) const  [pure virtual]
```

Checks whether you need to change the current game library.

Returns

true Switch to next available library
false Do nothing

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.19 switchToNextLib()

```
virtual bool Arcade::Display::IDisplayModule::switchToNextLib ( ) const  [pure virtual]
```

Checks whether you need to change the current display library.

Returns

true Switch to next available library
false Do nothing

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.20 switchToPreviousGame()

```
virtual bool Arcade::Display::IDisplayModule::switchToPreviousGame ( ) const  [pure virtual]
```

Checks whether you need to change the current game library.

Returns

true Switch to previous available library
false Do nothing

Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.10.3.21 switchToPreviousLib()

```
virtual bool Arcade::Display::IDisplayModule::switchToPreviousLib ( ) const  [pure virtual]
```

Checks whether you need to change the current display library.

Returns

true Switch to previous available library
false Do nothing

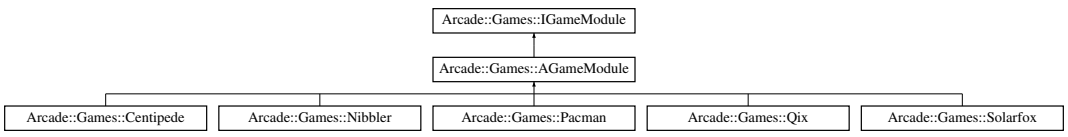
Implemented in Arcade::Display::SDL, Arcade::Display::Ncurses, and Arcade::Display::SFML.

6.11 Arcade::Games::IGameModule Class Reference

Interface for the game modules used to handle games.

```
#include <IGameModule.hpp>
```

Inheritance diagram for Arcade::Games::IGameModule:



Public Member Functions

- virtual void reset ()=0

  Resets and restarts the game.
- virtual bool loadFromFile (const std::string &filepath)=0

  Loads highscores from a file.
- virtual bool loadFromFile ()=0

  Loads highscores from the default save file.
- virtual bool saveToFile (const std::string &filepath) const =0

  Saves highscores to a file.
- virtual bool saveToFile () const =0

  Saves highscores from the default save file.
- virtual void setPlayerName (const std::string &name)=0

  Sets the player name.
- virtual std::pair< std::string, int > getScore () const =0

  Gets the current score.
- virtual std::vector< std::pair< std::string, int > > getBestScores () const =0

  Gets the best 16 scores.
- virtual void update (const Arcade::Display::IDisplayModule &lib)=0

  Updates the game.
- virtual void render (Arcade::Display::IDisplayModule &lib) const =0

  Renders the game on the display module.
  THIS MUST ONLY DRAW THINGS ON THE CANVAS, so don't call the Arcade::Display::IDisplayModule::update or Arcade::Display::IDisplayModule::render methods.
- virtual const std::string & getLibName () const =0

  Gets the library name.

6.11.1 Detailed Description

Interface for the game modules used to handle games.

6.11.2 Member Function Documentation

6.11.2.1 getBestScores()

```
virtual std::vector<std::pair<std::string, int> > Arcade::Games::IGameModule::getBestScores (
) const  [pure virtual]
```

Gets the best 16 scores.

Returns

std::vector<std::pair<std::string, int>> Vector of [name, score] value pairs

Implemented in Arcade::Games::AGameModule.

6.11.2.2 getLibName()

```
virtual const std::string& Arcade::Games::IGameModule::getLibName ( ) const  [pure virtual]
```

Gets the library name.

Returns

The library's name

Implemented in Arcade::Games::AGameModule.

6.11.2.3 getScore()

```
virtual std::pair<std::string, int> Arcade::Games::IGameModule::getScore ( ) const  [pure
virtual]
```

Gets the current score.

Returns

std::pair<std::string, int> [Name, score] value pairs

Implemented in Arcade::Games::AGameModule.

6.11.2.4 loadFromFile() [1/2]

```
virtual bool Arcade::Games::IGameModule::loadFromFile (
            const std::string & filepath )  [pure virtual]
```

Loads highscores from a file.

Parameters

filepath	The file path

Returns

true Highscores were loaded
false An error occured

Implemented in Arcade::Games::AGameModule.

6.11.2.5 loadFromFile() [2/2]

```
virtual bool Arcade::Games::IGameModule::loadFromFile ( )  [pure virtual]
```

Loads highscores from the default save file.

Returns

true Highscores were loaded
false An error occured

Implemented in Arcade::Games::AGameModule.

6.11.2.6 render()

```
virtual void Arcade::Games::IGameModule::render (
            Arcade::Display::IDisplayModule & lib ) const  [pure virtual]
```

Renders the game on the display module.
THIS MUST ONLY DRAW THINGS ON THE CANVAS, so don't call the Arcade::Display::IDisplayModule::update or Arcade::Display::IDisplayModule::render methods.

Parameters

lib	The display module that will be used to put things on a canvas.

Implemented in Arcade::Games::AGameModule, Arcade::Games::Nibbler, and Arcade::Games::Pacman.

6.11.2.7 saveToFile() [1/2]

```
virtual bool Arcade::Games::IGameModule::saveToFile (
            const std::string & filepath ) const  [pure virtual]
```

Saves highscores to a file.

Parameters

filepath	The file path

Returns

true Highscores were saved
false An error occured

Implemented in Arcade::Games::AGameModule.

6.11.2.8 saveToFile() [2/2]

```
virtual bool Arcade::Games::IGameModule::saveToFile ( ) const  [pure virtual]
```

Saves highscores from the default save file.

Returns

true Highscores were saved
false An error occured

Implemented in Arcade::Games::AGameModule.

6.11.2.9 setPlayerName()

```
virtual void Arcade::Games::IGameModule::setPlayerName (
            const std::string & name )  [pure virtual]
```

Sets the player name.

Parameters

name	The player name

Implemented in Arcade::Games::AGameModule.

6.11.2.10 update()

```
virtual void Arcade::Games::IGameModule::update (
            const Arcade::Display::IDisplayModule & lib )  [pure virtual]
```

Updates the game.

Parameters

lib	The display module that will be used to get events that occured

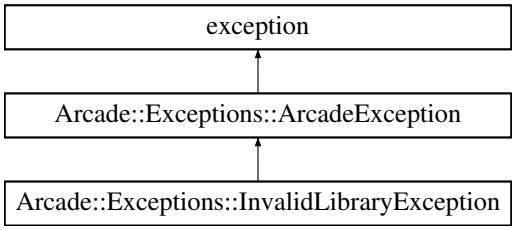
Implemented in Arcade::Games::Nibbler, Arcade::Games::Pacman, Arcade::Games::Centipede, Arcade::Games::Qix, and Arcade::Games::Solarfox.

6.12 Arcade::Exceptions::InvalidLibraryException Class Reference

Thrown when trying to use an invalid library file.

`#include <InvalidLibraryException.hpp>`

Inheritance diagram for Arcade::Exceptions::InvalidLibraryException:



Public Member Functions

- InvalidLibraryException (std::string const &message, std::string const &component)
  Construct a new Invalid Library Exception object.

6.12.1 Detailed Description

Thrown when trying to use an invalid library file.

6.12.2 Constructor & Destructor Documentation

6.12.2.1 InvalidLibraryException()

```
Arcade::Exceptions::InvalidLibraryException::InvalidLibraryException (
            std::string const & message,
            std::string const & component )
```

Construct a new Invalid Library Exception object.

Parameters

message	Message explaining the problem.
component	Additional information on where the problem occured.

6.13 Arcade::Logger Class Reference

Used to display error messages depending on the set log level.

`#include <Logger.hpp>`

Public Types

- enum LogLevel { ERROR, DEBUG }

  Available log levels.

Public Member Functions

- **Logger** (const Logger &)=delete
- void **operator=** (const Logger &)=delete

Static Public Member Functions

- template<typename ... Args>
  static void log (LogLevel level, Args &&...args)

  Logs the given message to the output.
- static void setLogLevel (LogLevel level)

  Sets the current log level.

6.13.1 Detailed Description

Used to display error messages depending on the set log level.

6.13.2 Member Enumeration Documentation

6.13.2.1 LogLevel

```
enum Arcade::Logger::LogLevel
```

Available log levels.

Enumerator

ERROR	Displays unexpected errors.
DEBUG	Used for debugging.

6.13.3 Member Function Documentation

6.13.3.1 log()

```
template<typename ...  Args>
static void Arcade::Logger::log (
```

```
            LogLevel level,
            Args &&... args )  [inline], [static]
```

Logs the given message to the output.

Template Parameters

Args	Type list for each argument

Parameters

level	The log level of the message
args	Every argument are going to be assembled using std::cerr << ... << args

6.13.3.2 setLogLevel()

```
static void Arcade::Logger::setLogLevel (
            LogLevel level )  [static]
```

Sets the current log level.

Parameters

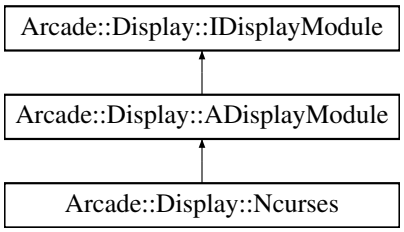
level	Log level value.

6.14 Arcade::Display::Ncurses Class Reference

Libncurses library.

```
#include <Ncurses.hpp>
```

Inheritance diagram for Arcade::Display::Ncurses:



Public Member Functions

- void reset () final

Resets the library.

- void open () final

  Opens / initializes the window.
- void close () final

  Close / destroy the window.
- bool isOpen () const final

  Check window status.
- bool switchToNextLib () const final

  Checks whether you need to change the current display library.
- bool switchToPreviousLib () const final

  Checks whether you need to change the current display library.
- bool switchToNextGame () const final

  Checks whether you need to change the current game library.
- bool switchToPreviousGame () const final

  Checks whether you need to change the current game library.
- bool shouldBeRestarted () const final

  Checks whether you need to restart the current game.
- bool shouldGoToMenu () const final

  Checks whether you need to go back to the menu.
- bool shouldExit () const final

  Checks whether you need to exit the program.
- bool isKeyPressed (IDisplayModule::Keys key) const final

  Checks whether the current key is being pressed.
- bool isKeyPressedOnce (IDisplayModule::Keys key) const final

  Checks whether the current key was pressed during the last frame.
- float getDelta () const final

  Gets the number of frames since last update.
- void clear () const final

  Clears the canvas. ***Call this after the IDisplayModule::update method.***
- void update () final

  Runs an update over the events that occured. ***Call this before the IDisplayModule::clear method.***
- void render () const final

  Renders the canvas.
- char getKeyCode () const final

  Gets the last pressed character from the keyboard.
- void setColor (IDisplayModule::Colors color) final

  Defines the color of the elements that will be drawn.
- void putPixel (float x, float y) const final

  Displays a pixel.
- void putLine (float x1, float y1, float x2, float y2) const final

  Displays a line.
- void putRect (float x, float y, float w, float h) const final

  Displays a rectangle.
- void putFillRect (float x, float y, float w, float h) const final

  Displays a filled rectangle.
- void putCircle (float x, float y, float rad) const final

  Displays a cirle.
- void putFillCircle (float x, float y, float rad) const final

  Displays a filled cirle.
- void putText (const std::string &text, unsigned int size, float x, float y) const final

  Displays text.

Additional Inherited Members

6.14.1 Detailed Description

Libncurses library.

6.14.2 Member Function Documentation

6.14.2.1 getDelta()

```
float Arcade::Display::Ncurses::getDelta ( ) const  [final], [virtual]
```

Gets the number of frames since last update.

Returns

float Frame count

Implements Arcade::Display::IDisplayModule.

6.14.2.2 getKeyCode()

```
char Arcade::Display::Ncurses::getKeyCode ( ) const  [final], [virtual]
```

Gets the last pressed character from the keyboard.

Returns

\0 if nothing was pressed, \b if backspace was pressed, \n if return was pressed, otherwise, a character.

Implements Arcade::Display::IDisplayModule.

6.14.2.3 isKeyPressed()

```
bool Arcade::Display::Ncurses::isKeyPressed (
            IDisplayModule::Keys key ) const  [final], [virtual]
```

Checks whether the current key is being pressed.

Parameters

key	The key

Returns

true Key is pressed
false Key is not pressed

Implements Arcade::Display::IDisplayModule.

6.14.2.4 isKeyPressedOnce()

```
bool Arcade::Display::Ncurses::isKeyPressedOnce (
            IDisplayModule::Keys key ) const  [final], [virtual]
```

Checks whether the current key was pressed during the last frame.

Parameters

key	The key

Returns

true Key is pressed
false Key is not pressed

Implements Arcade::Display::IDisplayModule.

6.14.2.5 isOpen()

```
bool Arcade::Display::Ncurses::isOpen ( ) const  [final], [virtual]
```

Check window status.

Returns

true Window is open
false Window is closed

Implements Arcade::Display::IDisplayModule.

6.14.2.6 putCircle()

```
void Arcade::Display::Ncurses::putCircle (
            float x,
            float y,
            float rad ) const  [final], [virtual]
```

Displays a cirle.

Parameters

x	X coordinates
y	Y coordinates
rad	Radius of the circle

Implements Arcade::Display::IDisplayModule.

6.14.2.7 putFillCircle()

```
void Arcade::Display::Ncurses::putFillCircle (
            float x,
            float y,
            float rad ) const  [final], [virtual]
```

Displays a filled cirle.

Parameters

x	X coordinates
y	Y coordinates
rad	Radius of the circle

Implements Arcade::Display::IDisplayModule.

6.14.2.8 putFillRect()

```
void Arcade::Display::Ncurses::putFillRect (
            float x,
            float y,
            float w,
            float h ) const  [final], [virtual]
```

Displays a filled rectangle.

Parameters

x	X coordinates
y	Y coordinates
w	Width of the rectangle
h	Height of the rectangle

Implements Arcade::Display::IDisplayModule.

6.14.2.9 putLine()

```
void Arcade::Display::Ncurses::putLine (
            float x1,
            float y1,
            float x2,
            float y2 ) const  [final], [virtual]
```

Displays a line.

Parameters

x1	X coordinates for the first point
y1	Y coordinates for the first point
x2	X coordinates for the second point
y2	Y coordinates for the second point

Implements Arcade::Display::IDisplayModule.

6.14.2.10 putPixel()

```
void Arcade::Display::Ncurses::putPixel (
            float x,
            float y ) const  [final], [virtual]
```

Displays a pixel.

Parameters

x	X coordinates
y	Y coordinates

Implements Arcade::Display::IDisplayModule.

6.14.2.11 putRect()

```
void Arcade::Display::Ncurses::putRect (
            float x,
            float y,
            float w,
            float h ) const  [final], [virtual]
```

Displays a rectangle.

Parameters

x	X coordinates

Parameters

y	Y coordinates
w	Width of the rectangle
h	Height of the rectangle

Implements Arcade::Display::IDisplayModule.

6.14.2.12 putText()

```
void Arcade::Display::Ncurses::putText (
            const std::string & text,
            unsigned int size,
            float x,
            float y ) const  [final], [virtual]
```

Displays text.

Parameters

text	The text content
size	The text size
x	X coordinates
y	Y coordinates

Implements Arcade::Display::IDisplayModule.

6.14.2.13 setColor()

```
void Arcade::Display::Ncurses::setColor (
            IDisplayModule::Colors color )  [final], [virtual]
```

Defines the color of the elements that will be drawn.

Parameters

color	The color

Implements Arcade::Display::IDisplayModule.

6.14.2.14 shouldBeRestarted()

```
bool Arcade::Display::Ncurses::shouldBeRestarted ( ) const  [final], [virtual]
```

Checks whether you need to restart the current game.

Returns

true Restart the game
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.14.2.15 shouldExit()

```
bool Arcade::Display::Ncurses::shouldExit ( ) const  [final], [virtual]
```

Checks whether you need to exit the program.

Returns

true Exit the program
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.14.2.16 shouldGoToMenu()

```
bool Arcade::Display::Ncurses::shouldGoToMenu ( ) const  [final], [virtual]
```

Checks whether you need to go back to the menu.

Returns

true Go back to menu
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.14.2.17 switchToNextGame()

```
bool Arcade::Display::Ncurses::switchToNextGame ( ) const  [final], [virtual]
```

Checks whether you need to change the current game library.

Returns

true Switch to next available library
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.14.2.18 switchToNextLib()

```
bool Arcade::Display::Ncurses::switchToNextLib ( ) const  [final], [virtual]
```

Checks whether you need to change the current display library.

Returns

true Switch to next available library
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.14.2.19 switchToPreviousGame()

```
bool Arcade::Display::Ncurses::switchToPreviousGame ( ) const  [final], [virtual]
```

Checks whether you need to change the current game library.

Returns

true Switch to previous available library
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.14.2.20 switchToPreviousLib()

```
bool Arcade::Display::Ncurses::switchToPreviousLib ( ) const  [final], [virtual]
```

Checks whether you need to change the current display library.

Returns

true Switch to previous available library
false Do nothing

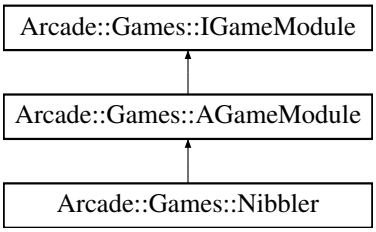
Implements Arcade::Display::IDisplayModule.

6.15 Arcade::Games::Nibbler Class Reference

Nibbler game.

`#include <Nibbler.hpp>`

Inheritance diagram for Arcade::Games::Nibbler:



Public Member Functions

- void reset () final

  Resets and restarts the game.
- void update (const Arcade::Display::IDisplayModule &displayModule) final

  Updates the game.
- void render (Arcade::Display::IDisplayModule &displayModule) const final

  Renders the Nibbler game on the display module.

Additional Inherited Members

6.15.1 Detailed Description

Nibbler game.

6.15.2 Member Function Documentation

6.15.2.1 render()

```
void Arcade::Games::Nibbler::render (
            Arcade::Display::IDisplayModule & displayModule ) const  [final], [virtual]
```

Renders the Nibbler game on the display module.

Parameters

displayModule	The display module that will be used to put things on a canvas.

Reimplemented from Arcade::Games::AGameModule.

6.15.2.2 update()

```
void Arcade::Games::Nibbler::update (
            const Arcade::Display::IDisplayModule & lib )  [final], [virtual]
```

Updates the game.

Parameters

lib	The display module that will be used to get events that occured

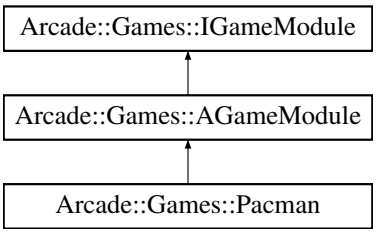
Implements Arcade::Games::IGameModule.

6.16 Arcade::Games::Pacman Class Reference

Pacman game.

`#include <Pacman.hpp>`

Inheritance diagram for Arcade::Games::Pacman:



Public Member Functions

- void reset () final
  Resets and restarts the game.
- void update (const Arcade::Display::IDisplayModule &displayModule) final
  Updates the game.
- void render (Arcade::Display::IDisplayModule &displayModule) const final
  Renders the Pacman game on the display module.

Additional Inherited Members

6.16.1 Detailed Description

Pacman game.

6.16.2 Member Function Documentation

6.16.2.1 render()

```
void Arcade::Games::Pacman::render (
            Arcade::Display::IDisplayModule & displayModule ) const  [final], [virtual]
```

Renders the Pacman game on the display module.

Parameters

displayModule	The display module that will be used to put things on a canvas.

Reimplemented from Arcade::Games::AGameModule.

6.16.2.2 update()

```
void Arcade::Games::Pacman::update (
            const Arcade::Display::IDisplayModule & lib )  [final], [virtual]
```

Updates the game.

Parameters

lib	The display module that will be used to get events that occured

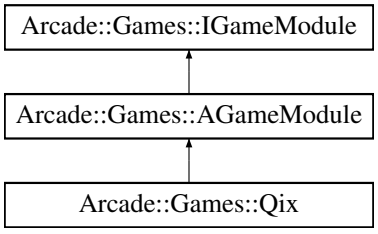
Implements Arcade::Games::IGameModule.

6.17 Arcade::Games::Qix Class Reference

Qix game.

```
#include <Qix.hpp>
```

Inheritance diagram for Arcade::Games::Qix:



Public Member Functions

- void reset () final

  Resets and restarts the game.
- void update (const Arcade::Display::IDisplayModule &lib) final

  Updates the game.

Additional Inherited Members

6.17.1 Detailed Description

Qix game.

6.17.2 Member Function Documentation

6.17.2.1 update()

```
void Arcade::Games::Qix::update (
            const Arcade::Display::IDisplayModule & lib )  [final], [virtual]
```

Updates the game.

Parameters

lib	The display module that will be used to get events that occured

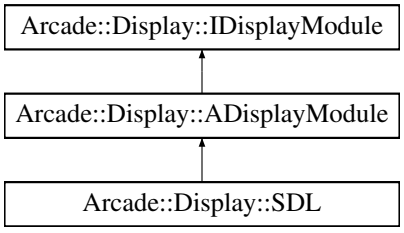
Implements Arcade::Games::IGameModule.

6.18 Arcade::Display::SDL Class Reference

SDL library.

```
#include <SDL.hpp>
```

Inheritance diagram for Arcade::Display::SDL:



Public Member Functions

- void reset () final

  Resets the library.
- void open () final

  Opens / initializes the window.
- void close () final

  Close / destroy the window.
- bool isOpen () const final

  Check window status.
- bool switchToNextLib () const final

  Checks whether you need to change the current display library.
- bool switchToPreviousLib () const final

  Checks whether you need to change the current display library.
- bool switchToNextGame () const final

  Checks whether you need to change the current game library.
- bool switchToPreviousGame () const final

  Checks whether you need to change the current game library.
- bool shouldBeRestarted () const final

  Checks whether you need to restart the current game.
- bool shouldGoToMenu () const final

  Checks whether you need to go back to the menu.
- bool shouldExit () const final

  Checks whether you need to exit the program.
- bool isKeyPressed (IDisplayModule::Keys key) const final

  Checks whether the current key is being pressed.
- bool isKeyPressedOnce (IDisplayModule::Keys key) const final

  Checks whether the current key was pressed during the last frame.
- float getDelta () const final

  Gets the number of frames since last update.
- void clear () const final

  Clears the canvas. ***Call this after the IDisplayModule::update method.***
- void update () final

  Runs an update over the events that occured. ***Call this before the IDisplayModule::clear method.***
- void render () const final

  Renders the canvas.
- char getKeyCode () const final

  Gets the last pressed character from the keyboard.
- void setColor (IDisplayModule::Colors color) final

  Defines the color of the elements that will be drawn.
- void putPixel (float x, float y) const final

  Displays a pixel.
- void putLine (float x1, float y1, float x2, float y2) const final

  Displays a line.
- void putRect (float x, float y, float w, float h) const final

  Displays a rectangle.
- void putFillRect (float x, float y, float w, float h) const final

  Displays a filled rectangle.
- void putCircle (float x, float y, float rad) const final

  Displays a cirle.
- void putFillCircle (float x, float y, float rad) const final

  Displays a filled cirle.
- void putText (const std::string &text, unsigned int size, float x, float y) const final

  Displays text.

Additional Inherited Members

6.18.1 Detailed Description

SDL library.

6.18.2 Member Function Documentation

6.18.2.1 getDelta()

```
float Arcade::Display::SDL::getDelta ( ) const  [final], [virtual]
```

Gets the number of frames since last update.

Returns

float Frame count

Implements Arcade::Display::IDisplayModule.

6.18.2.2 getKeyCode()

```
char Arcade::Display::SDL::getKeyCode ( ) const  [final], [virtual]
```

Gets the last pressed character from the keyboard.

Returns

\0 if nothing was pressed, \b if backspace was pressed, \n if return was pressed, otherwise, a character.

Implements Arcade::Display::IDisplayModule.

6.18.2.3 isKeyPressed()

```
bool Arcade::Display::SDL::isKeyPressed (
            IDisplayModule::Keys key ) const  [final], [virtual]
```

Checks whether the current key is being pressed.

Parameters

key	The key

Returns

true Key is pressed
false Key is not pressed

Implements Arcade::Display::IDisplayModule.

6.18.2.4 isKeyPressedOnce()

```
bool Arcade::Display::SDL::isKeyPressedOnce (
            IDisplayModule::Keys key ) const  [final], [virtual]
```

Checks whether the current key was pressed during the last frame.

Parameters

key	The key

Returns

true Key is pressed
false Key is not pressed

Implements Arcade::Display::IDisplayModule.

6.18.2.5 isOpen()

```
bool Arcade::Display::SDL::isOpen ( ) const  [final], [virtual]
```

Check window status.

Returns

true Window is open
false Window is closed

Implements Arcade::Display::IDisplayModule.

6.18.2.6 putCircle()

```
void Arcade::Display::SDL::putCircle (
            float x,
            float y,
            float rad ) const  [final], [virtual]
```

Displays a cirle.

Parameters

x	X coordinates
y	Y coordinates
rad	Radius of the circle

Implements Arcade::Display::IDisplayModule.

6.18.2.7 putFillCircle()

```
void Arcade::Display::SDL::putFillCircle (
            float x,
            float y,
            float rad ) const  [final], [virtual]
```

Displays a filled cirle.

Parameters

x	X coordinates
y	Y coordinates
rad	Radius of the circle

Implements Arcade::Display::IDisplayModule.

6.18.2.8 putFillRect()

```
void Arcade::Display::SDL::putFillRect (
            float x,
            float y,
            float w,
            float h ) const  [final], [virtual]
```

Displays a filled rectangle.

Parameters

x	X coordinates
y	Y coordinates
w	Width of the rectangle
h	Height of the rectangle

Implements Arcade::Display::IDisplayModule.

6.18.2.9 putLine()

```
void Arcade::Display::SDL::putLine (
            float x1,
            float y1,
            float x2,
            float y2 ) const  [final], [virtual]
```

Displays a line.

Parameters

x1	X coordinates for the first point
y1	Y coordinates for the first point
x2	X coordinates for the second point
y2	Y coordinates for the second point

Implements Arcade::Display::IDisplayModule.

6.18.2.10 putPixel()

```
void Arcade::Display::SDL::putPixel (
            float x,
            float y ) const  [final], [virtual]
```

Displays a pixel.

Parameters

x	X coordinates
y	Y coordinates

Implements Arcade::Display::IDisplayModule.

6.18.2.11 putRect()

```
void Arcade::Display::SDL::putRect (
            float x,
            float y,
            float w,
            float h ) const  [final], [virtual]
```

Displays a rectangle.

Parameters

x	X coordinates

Parameters

y	Y coordinates
w	Width of the rectangle
h	Height of the rectangle

Implements Arcade::Display::IDisplayModule.

6.18.2.12 putText()

```
void Arcade::Display::SDL::putText (
            const std::string & text,
            unsigned int size,
            float x,
            float y ) const  [final], [virtual]
```

Displays text.

Parameters

text	The text content
size	The text size
x	X coordinates
y	Y coordinates

Implements Arcade::Display::IDisplayModule.

6.18.2.13 setColor()

```
void Arcade::Display::SDL::setColor (
            IDisplayModule::Colors color )  [final], [virtual]
```

Defines the color of the elements that will be drawn.

Parameters

color	The color

Implements Arcade::Display::IDisplayModule.

6.18.2.14 shouldBeRestarted()

```
bool Arcade::Display::SDL::shouldBeRestarted ( ) const  [final], [virtual]
```

Checks whether you need to restart the current game.

Returns

true Restart the game
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.18.2.15 shouldExit()

```
bool Arcade::Display::SDL::shouldExit ( ) const  [final], [virtual]
```

Checks whether you need to exit the program.

Returns

true Exit the program
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.18.2.16 shouldGoToMenu()

```
bool Arcade::Display::SDL::shouldGoToMenu ( ) const  [final], [virtual]
```

Checks whether you need to go back to the menu.

Returns

true Go back to menu
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.18.2.17 switchToNextGame()

```
bool Arcade::Display::SDL::switchToNextGame ( ) const  [final], [virtual]
```

Checks whether you need to change the current game library.

Returns

true Switch to next available library
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.18.2.18 switchToNextLib()

```
bool Arcade::Display::SDL::switchToNextLib ( ) const  [final], [virtual]
```

Checks whether you need to change the current display library.

Returns

true Switch to next available library
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.18.2.19 switchToPreviousGame()

```
bool Arcade::Display::SDL::switchToPreviousGame ( ) const  [final], [virtual]
```

Checks whether you need to change the current game library.

Returns

true Switch to previous available library
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.18.2.20 switchToPreviousLib()

```
bool Arcade::Display::SDL::switchToPreviousLib ( ) const  [final], [virtual]
```

Checks whether you need to change the current display library.

Returns

true Switch to previous available library
false Do nothing

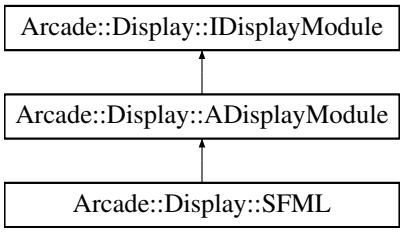
Implements Arcade::Display::IDisplayModule.

6.19 Arcade::Display::SFML Class Reference

SFML library.

`#include <SFML.hpp>`

Inheritance diagram for Arcade::Display::SFML:



Public Member Functions

- void reset () final
  Resets the library.
- void open () final
  Opens / initializes the window.
- void close () final
  Close / destroy the window.
- bool isOpen () const final
  Check window status.
- bool switchToNextLib () const final
  Checks whether you need to change the current display library.
- bool switchToPreviousLib () const final
  Checks whether you need to change the current display library.
- bool switchToNextGame () const final
  Checks whether you need to change the current game library.
- bool switchToPreviousGame () const final
  Checks whether you need to change the current game library.
- bool shouldBeRestarted () const final
  Checks whether you need to restart the current game.
- bool shouldGoToMenu () const final
  Checks whether you need to go back to the menu.
- bool shouldExit () const final
  Checks whether you need to exit the program.
- bool isKeyPressed (IDisplayModule::Keys key) const final
  Checks whether the current key is being pressed.
- bool isKeyPressedOnce (IDisplayModule::Keys key) const final
  Checks whether the current key was pressed during the last frame.
- float getDelta () const final
  Gets the number of frames since last update.
- void clear () const final
  Clears the canvas. ***Call this after the IDisplayModule::update method.***
- void update () final
  Runs an update over the events that occured. ***Call this before the IDisplayModule::clear method.***

- void render () const final

  Renders the canvas.
- char getKeyCode () const final

  Gets the last pressed character from the keyboard.
- void setColor (IDisplayModule::Colors color) final

  Defines the color of the elements that will be drawn.
- void putPixel (float x, float y) const final

  Displays a pixel.
- void putLine (float x1, float y1, float x2, float y2) const final

  Displays a line.
- void putRect (float x, float y, float w, float h) const final

  Displays a rectangle.
- void putFillRect (float x, float y, float w, float h) const final

  Displays a filled rectangle.
- void putCircle (float x, float y, float rad) const final

  Displays a cirle.
- void putFillCircle (float x, float y, float rad) const final

  Displays a filled cirle.
- void putText (const std::string &text, unsigned int size, float x, float y) const final

  Displays text.

Additional Inherited Members

6.19.1 Detailed Description

SFML library.

6.19.2 Member Function Documentation

6.19.2.1 getDelta()

```
float Arcade::Display::SFML::getDelta ( ) const  [final], [virtual]
```

Gets the number of frames since last update.

Returns

float Frame count

Implements Arcade::Display::IDisplayModule.

6.19.2.2 getKeyCode()

```
char Arcade::Display::SFML::getKeyCode ( ) const  [final], [virtual]
```

Gets the last pressed character from the keyboard.

Returns

\0 if nothing was pressed, \b if backspace was pressed, \n if return was pressed, otherwise, a character.

Implements Arcade::Display::IDisplayModule.

6.19.2.3 isKeyPressed()

```
bool Arcade::Display::SFML::isKeyPressed (
            IDisplayModule::Keys key ) const  [final], [virtual]
```

Checks whether the current key is being pressed.

Parameters

key	The key

Returns

true Key is pressed
false Key is not pressed

Implements Arcade::Display::IDisplayModule.

6.19.2.4 isKeyPressedOnce()

```
bool Arcade::Display::SFML::isKeyPressedOnce (
            IDisplayModule::Keys key ) const  [final], [virtual]
```

Checks whether the current key was pressed during the last frame.

Parameters

key	The key

Returns

true Key is pressed
false Key is not pressed

Implements Arcade::Display::IDisplayModule.

6.19.2.5 isOpen()

```
bool Arcade::Display::SFML::isOpen ( ) const  [final], [virtual]
```

Check window status.

Returns

true Window is open
false Window is closed

Implements Arcade::Display::IDisplayModule.

6.19.2.6 putCircle()

```
void Arcade::Display::SFML::putCircle (
            float x,
            float y,
            float rad ) const  [final], [virtual]
```

Displays a cirle.

Parameters

x	X coordinates
y	Y coordinates
rad	Radius of the circle

Implements Arcade::Display::IDisplayModule.

6.19.2.7 putFillCircle()

```
void Arcade::Display::SFML::putFillCircle (
            float x,
            float y,
            float rad ) const  [final], [virtual]
```

Displays a filled cirle.

Parameters

x	X coordinates
y	Y coordinates
rad	Radius of the circle

Implements Arcade::Display::IDisplayModule.

6.19.2.8 putFillRect()

```
void Arcade::Display::SFML::putFillRect (
            float x,
            float y,
            float w,
            float h ) const  [final], [virtual]
```

Displays a filled rectangle.

Parameters

x	X coordinates
y	Y coordinates
w	Width of the rectangle
h	Height of the rectangle

Implements Arcade::Display::IDisplayModule.

6.19.2.9 putLine()

```
void Arcade::Display::SFML::putLine (
            float x1,
            float y1,
            float x2,
            float y2 ) const  [final], [virtual]
```

Displays a line.

Parameters

x1	X coordinates for the first point
y1	Y coordinates for the first point
x2	X coordinates for the second point
y2	Y coordinates for the second point

Implements Arcade::Display::IDisplayModule.

6.19.2.10 putPixel()

```
void Arcade::Display::SFML::putPixel (
            float x,
            float y ) const  [final], [virtual]
```

Displays a pixel.

Parameters

x	X coordinates
y	Y coordinates

Implements Arcade::Display::IDisplayModule.

6.19.2.11 putRect()

```
void Arcade::Display::SFML::putRect (
            float x,
            float y,
            float w,
            float h ) const  [final], [virtual]
```

Displays a rectangle.

Parameters

x	X coordinates
y	Y coordinates
w	Width of the rectangle
h	Height of the rectangle

Implements Arcade::Display::IDisplayModule.

6.19.2.12 putText()

```
void Arcade::Display::SFML::putText (
            const std::string & text,
            unsigned int size,
            float x,
            float y ) const  [final], [virtual]
```

Displays text.

Parameters

text	The text content
size	The text size
x	X coordinates
y	Y coordinates

Implements Arcade::Display::IDisplayModule.

6.19.2.13 setColor()

```
void Arcade::Display::SFML::setColor (
            IDisplayModule::Colors color )  [final], [virtual]
```

Defines the color of the elements that will be drawn.

Parameters

color	The color

Implements Arcade::Display::IDisplayModule.

6.19.2.14 shouldBeRestarted()

```
bool Arcade::Display::SFML::shouldBeRestarted ( ) const  [final], [virtual]
```

Checks whether you need to restart the current game.

Returns

true Restart the game
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.19.2.15 shouldExit()

```
bool Arcade::Display::SFML::shouldExit ( ) const  [final], [virtual]
```

Checks whether you need to exit the program.

Returns

true Exit the program
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.19.2.16 shouldGoToMenu()

```
bool Arcade::Display::SFML::shouldGoToMenu ( ) const  [final], [virtual]
```

Checks whether you need to go back to the menu.

Returns

true Go back to menu
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.19.2.17 switchToNextGame()

```
bool Arcade::Display::SFML::switchToNextGame ( ) const  [final], [virtual]
```

Checks whether you need to change the current game library.

Returns

true Switch to next available library
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.19.2.18 switchToNextLib()

```
bool Arcade::Display::SFML::switchToNextLib ( ) const  [final], [virtual]
```

Checks whether you need to change the current display library.

Returns

true Switch to next available library
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.19.2.19 switchToPreviousGame()

```
bool Arcade::Display::SFML::switchToPreviousGame ( ) const  [final], [virtual]
```

Checks whether you need to change the current game library.

Returns

true Switch to previous available library
false Do nothing

Implements Arcade::Display::IDisplayModule.

6.19.2.20 switchToPreviousLib()

```
bool Arcade::Display::SFML::switchToPreviousLib ( ) const  [final], [virtual]
```

Checks whether you need to change the current display library.

Returns

true Switch to previous available library
false Do nothing

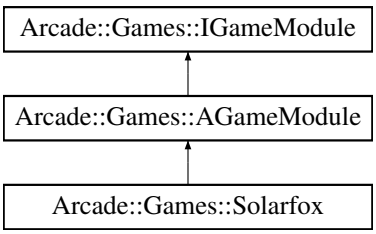
Implements Arcade::Display::IDisplayModule.

6.20 Arcade::Games::Solarfox Class Reference

Solarfox game.

```
#include <Solarfox.hpp>
```

Inheritance diagram for Arcade::Games::Solarfox:



Public Member Functions

- void reset () final

  Resets and restarts the game.
- void update (const Arcade::Display::IDisplayModule &lib) final

  Updates the game.

Additional Inherited Members

6.20.1 Detailed Description

Solarfox game.

6.20.2 Member Function Documentation

6.20.2.1 update()

```
void Arcade::Games::Solarfox::update (
            const Arcade::Display::IDisplayModule & lib )  [final], [virtual]
```

Updates the game.

Parameters

lib	The display module that will be used to get events that occured

Implements Arcade::Games::IGameModule.

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