Arcade Project

Generated by Doxygen 1.9.7

Chapter 1

README

A gaming platform.

1.1 Arcade

Arcade is a gaming platform, a program that lets the user choose a game to play and keeps a register of player scores.

1.1.1 Subject

1.1.2 Build

`Requirements`

- C++20 COMPILER
- cmake VERSION 3.5.1

`Libraries`

- SFML
- SDL2
- SDL2_TTF
- NCURSES

`CMake`

Simple guide to setup the project via CMake as follows:

```
$ mkdir ./build/ && cd ./build/
$ cmake .. -G “Unix Makefiles” -DCMAKE_BUILD_TYPE=Release
[. . .]
$ cmake --build .
[. . .]
$ cd ..
$ ls ./arcade ./lib/
./arcade

./lib/:
arcade_ncurses.so
arcade_pacman.so
arcade_sdl2.so
arcade_sfml.so
arcade_solarfox.so
[. . .]
```

1.1.3 Documentation

This project is documented with Doxygen, which is the de facto standard tool for generating documentation from annotated C++ sources.
There is also a ./doc directory, explaining how to implement new graphics libraries or game libraries compatible with the system.

1.1.4 Librairies

`Graphicals libraries`

The nCurses, SDL2 and SFML graphical libraries have been implemented.

- `nCurses (arcade_ncurses.so)`
- `SDL2 (arcade_sdl2.so)`
- `SFML (arcade_sfml.so)`

`Game libraries`

The Snake and Nibbler game libraries have been implemented.

- `Snake (arcade_snake.so)`
- `Nibbler (arcade_nibbler.so)`

1.1.5 Usage

```
USAGE:
  ./arcade path_to_graphical_lib

DESCRIPTION:
  /lib folder         path to the initial graphical library to load (./lib/arcade_lib_name.so)

COMMANDS (azerty layout):
  Y           Next graphics lib.
  U           Next game.
  I           Restart the game.
  O           Go back to the menu.
  P           Exit.

  D           Move right.
  Q           Move left.
  Z           Move up.
  S           Move down.
```

1.1.6 Documentation

1.1.7 Contributors

- Raphael Camblong
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Chapter 2

IGrid

Chapter 3

IText

Chapter 4

Hierarchical Index

4.1 Class Hierarchy

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

Chapter 5

Class Index

5.1 Class List

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

Chapter 6

File Index

6.1 File List

Here is a list of all files with brief descriptions:

Chapter 7

Class Documentation

7.1 IGrid::Cell Struct Reference

```
#include <IEntity.hpp>
```

Public Attributes

- Color color
- size_t x
- size_t y

7.1.1 Member Data Documentation

7.1.1.1 color

```
Color IGrid::Cell::color
```

7.1.1.2 x

```
size_t IGrid::Cell::x
```

7.1.1.3 y

```
size_t IGrid::Cell::y
```

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

- Interface/Graphical/IEntity.hpp

7.2 IClock Class Reference

```
#include <IClock.hpp>
```

Public Member Functions

- ∼IClock ()=default
- virtual void startClock ()=0

  Start the clock used to measure time in the game or simulation. Its purpose is to start the clock used to measure time in the game or simulation.
- virtual double getTimeElapsed ()=0

  Get the time elapsed since the start of the clock. Its purpose is to retrieve the time elapsed since the start of the clock used to measure time in the game or simulation.
- virtual void resetClock ()=0

  Reset the clock used to measure time in the game or simulation. Its purpose is to reset the clock used to measure time in the game or simulation to its initial state.
- virtual void initClock ()=0

  Initialize the clock used to measure time in the game or simulation. Its purpose is to initialize the clock used to measure time in the game or simulation, setting it to its initial state.

7.2.1 Constructor & Destructor Documentation

7.2.1.1 ∼IClock()

```
IClock::∼IClock ( )  [default]
```

7.2.2 Member Function Documentation

7.2.2.1 getTimeElapsed()

```
virtual double IClock::getTimeElapsed ( )  [pure virtual]
```

Get the time elapsed since the start of the clock. Its purpose is to retrieve the time elapsed since the start of the clock used to measure time in the game or simulation.

Returns

The time elapsed, in seconds.

7.2.2.2 initClock()

```
virtual void IClock::initClock ( )  [pure virtual]
```

Initialize the clock used to measure time in the game or simulation. Its purpose is to initialize the clock used to measure time in the game or simulation, setting it to its initial state.

7.2.2.3 resetClock()

```
virtual void IClock::resetClock ( )  [pure virtual]
```

Reset the clock used to measure time in the game or simulation. Its purpose is to reset the clock used to measure time in the game or simulation to its initial state.

7.2.2.4 startClock()

```
virtual void IClock::startClock ( )  [pure virtual]
```

Start the clock used to measure time in the game or simulation. Its purpose is to start the clock used to measure time in the game or simulation.

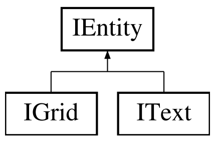
The documentation for this class was generated from the following file:

- Interface/Graphical/IClock.hpp

7.3 IEntity Class Reference

```
#include <IEntity.hpp>
```

Inheritance diagram for IEntity:



Public Types

- enum class Color {
  Blue , Green , Orange , Red ,
  Brown , Yellow }

Public Member Functions

- ∼IEntity ()=default
- virtual void setPosition (int x, int y)=0

  Sets the position of the entity. Its purpose is to set the position of the entity to the specified x and y coordinates. The function takes two integer parameters representing the x and y coordinates to set as the new position of the entity.
- virtual void destroy ()=0

  Destroys any resources used in the implementation. Its purpose is to destroy any resources used in the implementation, such as windows or textures.
- virtual void displayEntity ()=0

  Displays an entity on the screen. Its purpose is to display an entity on the screen, such as a sprite or image.

7.3.1 Member Enumeration Documentation

7.3.1.1 Color

```
enum class IEntity::Color  [strong]
```

Enumerator

Blue	
Green	
Orange	
Red	
Brown	
Yellow	

7.3.2 Constructor & Destructor Documentation

7.3.2.1 ∼IEntity()

```
IEntity::∼IEntity ( )  [default]
```

7.3.3 Member Function Documentation

7.3.3.1 destroy()

```
virtual void IEntity::destroy ( )  [pure virtual]
```

Destroys any resources used in the implementation. Its purpose is to destroy any resources used in the implementation, such as windows or textures.

7.3.3.2 displayEntity()

```
virtual void IEntity::displayEntity ( )  [pure virtual]
```

Displays an entity on the screen. Its purpose is to display an entity on the screen, such as a sprite or image.

7.3.3.3 setPosition()

```
virtual void IEntity::setPosition (
              int x,
              int y )  [pure virtual]
```

Sets the position of the entity. Its purpose is to set the position of the entity to the specified x and y coordinates. The function takes two integer parameters representing the x and y coordinates to set as the new position of the entity.

Parameters

x	
y	

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

- Interface/Graphical/IEntity.hpp

7.4 IGame Class Reference

```
#include <IGame.hpp>
```

Public Member Functions

- ∼IGame ()=default
- virtual IWindow::EventHandler & getEventBinding ()=0

  Returns the event handler object for the window. Its purpose is to return the event handler object for the window, allowing the client to modify or access event bindings. The function returns a reference to the IWindow::EventHandler object associated with the window.
- virtual bool processGameTick (IGrid &grid, IText &scoreText, IText &timeText, IClock &clock)=0

  Process a single tick of the game or simulation. Its purpose is to process a single tick of the game or simulation, updating the state of the game or simulation accordingly. The function takes four parameters: a reference to an IGrid object representing the game board or simulation space, a reference to an IText object representing the score or other information to be displayed, a reference to an IClock object representing the game or simulation timer, and a reference to an IText object representing the time or other information to be displayed. The function returns a boolean value indicating whether the game or simulation should continue running. If false, the game or simulation should end and any necessary cleanup should be performed.
- virtual void restart ()=0

  Restarts the implementation's game or simulation. Its purpose is to restart the game or simulation implemented by the class, resetting all necessary variables and objects to their initial state.

7.4.1 Constructor & Destructor Documentation

7.4.1.1 ∼IGame()

```
IGame::∼IGame ( )  [default]
```

7.4.2 Member Function Documentation

7.4.2.1 getEventBinding()

```
virtual IWindow::EventHandler & IGame::getEventBinding ( )  [pure virtual]
```

Returns the event handler object for the window. Its purpose is to return the event handler object for the window, allowing the client to modify or access event bindings. The function returns a reference to the IWindow::EventHandler object associated with the window.

Returns

IWindow::EventHandler&

7.4.2.2 processGameTick()

```
virtual bool IGame::processGameTick (
            IGrid & grid,
            IText & scoreText,
            IText & timeText,
            IClock & clock )  [pure virtual]
```

Process a single tick of the game or simulation. Its purpose is to process a single tick of the game or simulation, updating the state of the game or simulation accordingly. The function takes four parameters: a reference to an IGrid object representing the game board or simulation space, a reference to an IText object representing the score or other information to be displayed, a reference to an IClock object representing the game or simulation timer, and a reference to an IText object representing the time or other information to be displayed. The function returns a boolean value indicating whether the game or simulation should continue running. If false, the game or simulation should end and any necessary cleanup should be performed.

Parameters

grid	
scoreText	
timeText	
clock	

Returns

true

false

7.4.2.3 restart()

`virtual void IGame::restart ( ) [pure virtual]`

Restarts the implementation's game or simulation. Its purpose is to restart the game or simulation implemented by the class, resetting all necessary variables and objects to their initial state.

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

- Interface/Game/IGame.hpp

7.5 IGraphicalFactory Class Reference

`#include <IGraphicalFactory.hpp>`

Public Member Functions

- ∼IGraphicalFactory ()=default
- virtual void loadResource ()=0

  Loads the necessary resources required for the implementation of the program. Its purpose is to load any required resources that are used in the implementation, such as textures, sounds, or fonts, into memory so they can be used later on.
- virtual void destroyRessource ()=0

  Releases the resources held by the implementation. Its purpose is to release any resources that have been allocated or loaded by the implementation, such as textures, sounds, or fonts that were loaded during the course of the program. It ensure that all resources are properly released to avoid any memory leaks or resource conflicts.
- virtual std::unique_ptr< IWindow > createWindow (std::string name, size_t width, size_t height)=0

  This function creates a window object required for the implementation.
- virtual std::unique_ptr< IClock > createIClock ()=0

  Creates an IClock object required for the implementation. Its purpose is to create a new IClock object, which is used to track time in the implementation.

7.5.1 Constructor & Destructor Documentation

7.5.1.1 ∼IGraphicalFactory()

`IGraphicalFactory::∼IGraphicalFactory ( ) [default]`

7.5.2 Member Function Documentation

7.5.2.1 createIClock()

```
virtual std::unique_ptr< IClock > IGraphicalFactory::createIClock ( )  [pure virtual]
```

Creates an IClock object required for the implementation. Its purpose is to create a new IClock object, which is used to track time in the implementation.

Parameters

width	
height	

Returns

std::unique_ptr<IClock> A unique_ptr<IClock> object pointing to the newly created IClock.

7.5.2.2 createWindow()

```
virtual std::unique_ptr< IWindow > IGraphicalFactory::createWindow (
            std::string name,
            size_t width,
            size_t height )  [pure virtual]
```

This function creates a window object required for the implementation.

Parameters

name	A string specifying the name of the window to be created.
width	A size_t specifying the width of the window to be created.
height	A size_t specifying the height of the window to be created.

Returns

std::unique_ptr<IWindow> A unique_ptr<IWindow> object pointing to the newly created window.

7.5.2.3 destroyRessource()

```
virtual void IGraphicalFactory::destroyRessource ( )  [pure virtual]
```

Releases the resources held by the implementation. Its purpose is to release any resources that have been allocated or loaded by the implementation, such as textures, sounds, or fonts that were loaded during the course of the program. It ensure that all resources are properly released to avoid any memory leaks or resource conflicts.

7.5.2.4 loadResource()

```
virtual void IGraphicalFactory::loadResource ( )  [pure virtual]
```

Loads the necessary resources required for the implementation of the program. Its purpose is to load any required resources that are used in the implementation, such as textures, sounds, or fonts, into memory so they can be used later on.

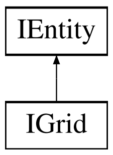
The documentation for this class was generated from the following file:

- Interface/Graphical/IGraphicalFactory.hpp

7.6 IGrid Class Reference

```
#include <IEntity.hpp>
```

Inheritance diagram for IGrid:



Classes

- struct Cell

Public Member Functions

- ∼IGrid ()=default
- virtual void create (int width, int heigth)=0

  Creates a new object in the implementation with the given width and height. Its purpose is to create a new object in the implementation with the given width and height. The function takes two integer parameters, representing the width and height of the new object to be created.
- virtual void updateCell (int x, int y, IEntity::Color)=0

  a pure virtual function that must be implemented by the derived class. Its purpose is to update the color of a cell in the implementation's grid, identified by its x and y coordinates. The function takes three parameters: two integer parameters representing the x and y coordinates of the cell, and a parameter of type IEntity::Color representing the new color to assign to the cell.

Public Member Functions inherited from IEntity

- ∼IEntity ()=default
- virtual void setPosition (int x, int y)=0

  Sets the position of the entity. Its purpose is to set the position of the entity to the specified x and y coordinates. The function takes two integer parameters representing the x and y coordinates to set as the new position of the entity.
- virtual void destroy ()=0

  Destroys any resources used in the implementation. Its purpose is to destroy any resources used in the implementation, such as windows or textures.
- virtual void displayEntity ()=0

  Displays an entity on the screen. Its purpose is to display an entity on the screen, such as a sprite or image.

Additional Inherited Members

Public Types inherited from IEntity

- enum class Color {
  Blue , Green , Orange , Red ,
  Brown , Yellow }

7.6.1 Constructor & Destructor Documentation

7.6.1.1 ∼IGrid()

```
IGrid::∼IGrid ( )  [default]
```

7.6.2 Member Function Documentation

7.6.2.1 create()

```
virtual void IGrid::create (
             int width,
             int heigth )  [pure virtual]
```

Creates a new object in the implementation with the given width and height. Its purpose is to create a new object in the implementation with the given width and height. The function takes two integer parameters, representing the width and height of the new object to be created.

Parameters

width	
heigth	

7.6.2.2 updateCell()

```
virtual void IGrid::updateCell (
             int x,
             int y,
             IEntity::Color  )  [pure virtual]
```

a pure virtual function that must be implemented by the derived class. Its purpose is to update the color of a cell in the implementation's grid, identified by its x and y coordinates. The function takes three parameters: two integer parameters representing the x and y coordinates of the cell, and a parameter of type IEntity::Color representing the new color to assign to the cell.

Parameters

x	
y	

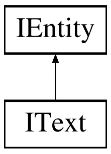
The documentation for this class was generated from the following file:

- Interface/Graphical/IEntity.hpp

7.7 IText Class Reference

```
#include <IEntity.hpp>
```

Inheritance diagram for IText:



Public Types

- enum class EntityType { GridEntity , SpriteEntity , TextEntity }

Public Types inherited from IEntity

- enum class Color {
  Blue , Green , Orange , Red ,
  Brown , Yellow }

Public Member Functions

- ∼IText ()=default
- virtual void create (std::string str)=0

  Creates a new object in the implementation. Its purpose is to create a new object in the implementation based on the given string parameter. The function take a string as parameter, which can be used to determine the type or properties of the object to be created.
- virtual void changeString (std::string str)=0

  Changes the string property of the object in the implementation. Its purpose is to change the string property of the object in the implementation. The function takes a string parameter, which represents the new value for the string property of the object.

Public Member Functions inherited from IEntity

- ∼IEntity ()=default
- virtual void setPosition (int x, int y)=0

  Sets the position of the entity. Its purpose is to set the position of the entity to the specified x and y coordinates. The function takes two integer parameters representing the x and y coordinates to set as the new position of the entity.
- virtual void destroy ()=0

  Destroys any resources used in the implementation. Its purpose is to destroy any resources used in the implementation, such as windows or textures.
- virtual void displayEntity ()=0

  Displays an entity on the screen. Its purpose is to display an entity on the screen, such as a sprite or image.

7.7.1 Member Enumeration Documentation

7.7.1.1 EntityType

```
enum class IText::EntityType [strong]
```

Enumerator

GridEntity	
SpriteEntity	
TextEntity	

7.7.2 Constructor & Destructor Documentation

7.7.2.1 ∼IText()

```
IText::∼IText ( ) [default]
```

7.7.3 Member Function Documentation

7.7.3.1 changeString()

```
virtual void IText::changeString (
            std::string str ) [pure virtual]
```

Changes the string property of the object in the implementation. Its purpose is to change the string property of the object in the implementation. The function takes a string parameter, which represents the new value for the string property of the object.

Parameters

str	

7.7.3.2 create()

```
virtual void IText::create (
            std::string str ) [pure virtual]
```

Creates a new object in the implementation. Its purpose is to create a new object in the implementation based on the given string parameter. The function take a string as parameter, which can be used to determine the type or properties of the object to be created.

Parameters

str	

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

- Interface/Graphical/IEntity.hpp

7.8 IWindow Class Reference

```
#include <IWindow.hpp>
```

Public Types

- enum class EventType {
  UP_pressed , DOWN_pressed , LEFT_pressed , RIGHT_pressed ,
  QUIT , PAUSE , RESUME , NEXT_GAME ,
  NEXT_LIB , RESTART , GO_TO_MENU }
- using EventCallBack = std::function< void()>
- using EventHandler = std::map< IWindow::EventType, EventCallBack >

Public Member Functions

- ∼IWindow ()=default
- virtual void initWindow (std::string name, size_t width, size_t height)=0

  Initializes the window object required for the implementation. Its purpose is to initialize the window object with the specified name, width, and height.
- virtual void closeWindow ()=0

  loses the window object used in the implementation. Its purpose is to close and destroy the window object used in the implementation.
- virtual bool windowIsOpen ()=0

  Checks whether the window object used in the implementation is currently open. Its purpose is to check whether the window object used in the implementation is currently open.
- virtual void clear ()=0

  Clears the rendering buffer used in the implementation. Its purpose is to clear the rendering buffer used in the implementation. This is typically done at the beginning of each frame to ensure that the previous frame's rendering is not visible in the current frame.
- virtual void display ()=0

  Displays the rendered content on the window object used in the implementation. Its purpose is to display the rendered content on the window object used in the implementation. This is typically done at the end of each frame to show the newly rendered content on the screen.
- virtual void callEvent (const IWindow::EventType)=0

  Calls the event handler function for the specified event type. Its purpose is to call the event handler function for the specified event type. This function is typically called by the application's main loop to handle user input or other events.
- virtual void loadEventBindings (EventHandler &)=0

  oads the event bindings for the specified event handler object. Its purpose is to load the event bindings for the specified event handler object. This function is typically called at the beginning of the application to register event handlers for various types of events (e.g. mouse clicks, key presses, etc.).
- virtual void eventPollEvent ()=0

  Polls for any pending events on the window object used in the implementation. Its purpose is to poll for any pending events on the window object used in the implementation. This function is typically called by the application's main loop to handle user input or other events.
- virtual std::unique_ptr< IText > createIText ()=0

  Creates a new instance of the IText interface for the implementation. Its purpose is to create a new instance of the IText interface for the implementation. The returned object can be used to draw text on the window.
- virtual std::unique_ptr< IGrid > createIGrid ()=0

  Creates a new instance of the IGrid interface for the implementation. Its purpose is to create a new instance of the IGrid interface for the implementation. The returned object can be used to draw a grid on the window.

7.8.1 Member Typedef Documentation

7.8.1.1 EventCallBack

```
using IWindow::EventCallBack = std::function<void()>
```

7.8.1.2 EventHandler

```
using IWindow::EventHandler = std::map<IWindow::EventType, EventCallBack>
```

7.8.2 Member Enumeration Documentation

7.8.2.1 EventType

```
enum class IWindow::EventType [strong]
```

Enumerator

UP_pressed	
DOWN_pressed	
LEFT_pressed	
RIGHT_pressed	
QUIT	
PAUSE	
RESUME	
NEXT_GAME	
NEXT_LIB	
RESTART	
GO_TO_MENU	

7.8.3 Constructor & Destructor Documentation

7.8.3.1 ∼IWindow()

```
IWindow::∼IWindow ( ) [default]
```

7.8.4 Member Function Documentation

7.8.4.1 callEvent()

```
virtual void IWindow::callEvent (
            const IWindow::EventType  )  [pure virtual]
```

Calls the event handler function for the specified event type. Its purpose is to call the event handler function for the specified event type. This function is typically called by the application's main loop to handle user input or other events.

Parameters

eventType	An object of type IWindow::EventType specifying the type of the event to be handled.

7.8.4.2 clear()

```
virtual void IWindow::clear ( )  [pure virtual]
```

Clears the rendering buffer used in the implementation. Its purpose is to clear the rendering buffer used in the implementation. This is typically done at the beginning of each frame to ensure that the previous frame's rendering is not visible in the current frame.

7.8.4.3 closeWindow()

```
virtual void IWindow::closeWindow ( )  [pure virtual]
```

loses the window object used in the implementation. Its purpose is to close and destroy the window object used in the implementation.

7.8.4.4 createIGrid()

```
virtual std::unique_ptr< IGrid > IWindow::createIGrid ( )  [pure virtual]
```

Creates a new instance of the IGrid interface for the implementation. Its purpose is to create a new instance of the IGrid interface for the implementation. The returned object can be used to draw a grid on the window.

Returns

std::unique_ptr<IGrid>

7.8.4.5 createIText()

```
virtual std::unique_ptr< IText > IWindow::createIText ( )  [pure virtual]
```

Creates a new instance of the IText interface for the implementation. Its purpose is to create a new instance of the IText interface for the implementation. The returned object can be used to draw text on the window.

Returns

std::unique_ptr<IText>

7.8.4.6 display()

```
virtual void IWindow::display ( )  [pure virtual]
```

Displays the rendered content on the window object used in the implementation. Its purpose is to display the rendered content on the window object used in the implementation. This is typically done at the end of each frame to show the newly rendered content on the screen.

7.8.4.7 eventPollEvent()

```
virtual void IWindow::eventPollEvent ( )  [pure virtual]
```

Polls for any pending events on the window object used in the implementation. Its purpose is to poll for any pending events on the window object used in the implementation. This function is typically called by the application's main loop to handle user input or other events.

7.8.4.8 initWindow()

```
virtual void IWindow::initWindow (
             std::string name,
             size_t width,
             size_t height )  [pure virtual]
```

Initializes the window object required for the implementation. Its purpose is to initialize the window object with the specified name, width, and height.

Parameters

name	
width	
height	

7.8.4.9 loadEventBindings()

```
virtual void IWindow::loadEventBindings (
             EventHandler &  )  [pure virtual]
```

oads the event bindings for the specified event handler object. Its purpose is to load the event bindings for the specified event handler object. This function is typically called at the beginning of the application to register event handlers for various types of events (e.g. mouse clicks, key presses, etc.).

Parameters

handler	An object of type EventHandler that contains the event bindings to be loaded.

7.8.4.10 windowIsOpen()

```
virtual bool IWindow::windowIsOpen ( )  [pure virtual]
```

Checks whether the window object used in the implementation is currently open. Its purpose is to check whether the window object used in the implementation is currently open.

Returns

true

false

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

- Interface/Graphical/IWindow.hpp

Chapter 8

File Documentation

8.1 Interface/Game/IGame.hpp File Reference

`#include "../Graphical/IGraphicalFactory.hpp"`

Classes

- class IGame

8.2 IGame.hpp

Go to the documentation of this file.

```
/*
** EPITECH PROJECT, 2023
** B-OOP-400-BDX-4-1-arcade-leopold.sallan-gemard
** File description:
** IGame
*/

#pragma once
#include "../Graphical/IGraphicalFactory.hpp"

class IGame
{
    public:
        ~IGame() = default;

        virtual IWindow::EventHandler &getEventBinding() = 0;

        virtual bool processGameTick(IGrid &grid, IText &scoreText, IText &timeText,
                                     IClock &clock) = 0;

        virtual void restart() = 0;
};
```

8.3 Interface/Graphical/IClock.hpp File Reference

Classes

- class IClock

8.4 IClock.hpp

Go to the documentation of this file.

```
/*
** EPITECH PROJECT, 2023
** arcade
** File description:
** IClock
*/

#pragma once

class IClock
{
    public:
        ~IClock() = default;

        virtual void startClock() = 0;

        virtual double getTimeElapsed() = 0;

        virtual void resetClock() = 0;

        virtual void initClock() = 0;
};
```

8.5 Interface/Graphical/IEntity.hpp File Reference

```
#include <string>
```

Classes

- class IEntity
- class IText
- class IGrid
- struct IGrid::Cell

8.6 IEntity.hpp

Go to the documentation of this file.

```
/*
** EPITECH PROJECT, 2023
** arcade
** File description:
** IEntity
*/

#pragma once
#include <string>

class IEntity
{
    public:
        enum class Color {
            Blue,
            Green,
            Orange,
            Red,
            Brown,
            Yellow,
        };

        ~IEntity() = default;

        virtual void setPosition(int x, int y) = 0;

        virtual void destroy() = 0;

        virtual void displayEntity() = 0;
};

class IText : public IEntity
{
    public:
        enum class EntityType {
            GridEntity,
            SpriteEntity,
            TextEntity,
        };
        ~IText() = default;

        virtual void create(std::string str) = 0;

        virtual void changeString(std::string str) = 0;
};

class IGrid : public IEntity
{
    public:
        struct Cell {
                Color color;
                size_t x;
                size_t y;
        };
        ~IGrid() = default;

        virtual void create(int width, int heigth) = 0;

        virtual void updateCell(int x, int y, IEntity::Color) = 0;
};
```

8.7 Interface/Graphical/IGraphicalFactory.hpp File Reference

```
#include "IClock.hpp"
#include "IEntity.hpp"
#include "IWindow.hpp"
#include <memory>
```

Classes

- class IGraphicalFactory

8.8 IGraphicalFactory.hpp

Go to the documentation of this file.

```
/*
** EPITECH PROJECT, 2023
** B-OOP-400-BDX-4-1-arcade-leopold.sallan-gemard
** File description:
** IGraphicalFactorys
*/

#pragma once
#include "IClock.hpp"
#include "IEntity.hpp"
#include "IWindow.hpp"
#include <memory>

class IGraphicalFactory
{
    public:
        ~IGraphicalFactory() = default;

        virtual void loadResource() = 0;

        virtual void destroyRessource() = 0;

        virtual std::unique_ptr<IWindow> createWindow(std::string name, size_t width,
                                                      size_t height) = 0;

        virtual std::unique_ptr<IClock> createIClock() = 0;
};
```

8.9 Interface/Graphical/IGrid.md File Reference

8.10 Interface/Graphical/IText.md File Reference

8.11 Interface/Graphical/IWindow.hpp File Reference

```
#include "IEntity.hpp"
#include <functional>
#include <map>
#include <memory>
```

Classes

- class IWindow

8.12 IWindow.hpp

Go to the documentation of this file.

```
/*
** EPITECH PROJECT, 2023
** arcade
** File description:
** IWindow
*/

#pragma once
#include "IEntity.hpp"
#include <functional>
#include <map>
#include <memory>

class IWindow
{
    public:
        ~IWindow() = default;

        virtual void initWindow(std::string name, size_t width, size_t height) = 0;

        virtual void closeWindow() = 0;

        virtual bool windowIsOpen() = 0;

        virtual void clear() = 0;

        virtual void display() = 0;

        virtual void callEvent(const IWindow::EventType) = 0;

        virtual void loadEventBindings(EventHandler &) = 0;

        virtual void eventPollEvent() = 0;

        virtual std::unique_ptr<IText> createIText() = 0;

        virtual std::unique_ptr<IGrid> createIGrid() = 0;

        enum class EventType {
            UP_pressed,
            DOWN_pressed,
            LEFT_pressed,
            RIGHT_pressed,
            QUIT,
            PAUSE,
            RESUME,
            NEXT_GAME,
            NEXT_LIB,
            RESTART,
            GO_TO_MENU,
        };

        using EventCallBack = std::function<void()>;
        using EventHandler = std::map<IWindow::EventType, EventCallBack>;
};
```

8.13 README.md File Reference

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