R-Type - Engine

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Chapter 1

Engine

1.1 Compilation

1.1.1 Linux

Use the following command to compile the engine:

```
cmake -Bbuild
make -Cbuild
```

Use the following command to compile the engine and its tests:

```
cmake -Bbuild -DBUILD_TESTS=ON
make -Cbuild
```

Use the following command for create the package (.tgz or .zip) after compile:

```
cd build
cpack
```

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

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

Chapter 3

Class Index

3.1 Class List

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

Chapter 4

Class Documentation

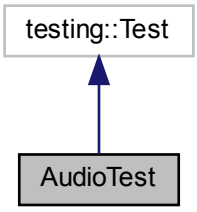
4.1 Archetypes Class Reference

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

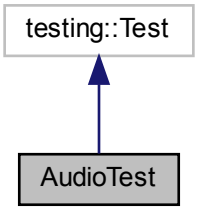
- src/Archetype/include/Archetypes.h

4.2 AudioTest Class Reference

Inheritance diagram for AudioTest:



Collaboration diagram for AudioTest:



Protected Member Functions

- void **SetUp** () override
- void **TearDown** () override

Protected Attributes

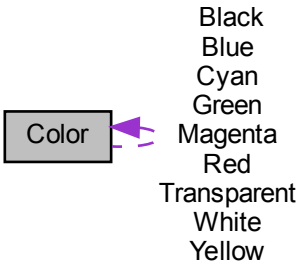
- Audio **audio**

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

- tests/Components/all_components/TestAudio.cpp

4.3 Color Class Reference

Collaboration diagram for Color:



Public Member Functions

- int **getRed** () const
- int **getGreen** () const
- int **getBlue** () const
- int **getAlpha** () const
- void **setRed** (int newRed)
- void **setGreen** (int newGreen)
- void **setBlue** (int newBlue)
- void **setAlpha** (int newAlpha)
- **operator sf::Color** () const

Static Public Member Functions

- static Color **fromSFMLColor** (const sf::Color &sfColor)

Static Public Attributes

- static const Color **Black** = Color::fromSFMLColor(sf::Color::Black)
- static const Color **White** = Color::fromSFMLColor(sf::Color::White)
- static const Color **Red** = Color::fromSFMLColor(sf::Color::Red)
- static const Color **Green** = Color::fromSFMLColor(sf::Color::Green)
- static const Color **Blue** = Color::fromSFMLColor(sf::Color::Blue)
- static const Color **Yellow** = Color::fromSFMLColor(sf::Color::Yellow)
- static const Color **Magenta** = Color::fromSFMLColor(sf::Color::Magenta)
- static const Color **Cyan** = Color::fromSFMLColor(sf::Color::Cyan)
- static const Color **Transparent** = Color::fromSFMLColor(sf::Color::Transparent)

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

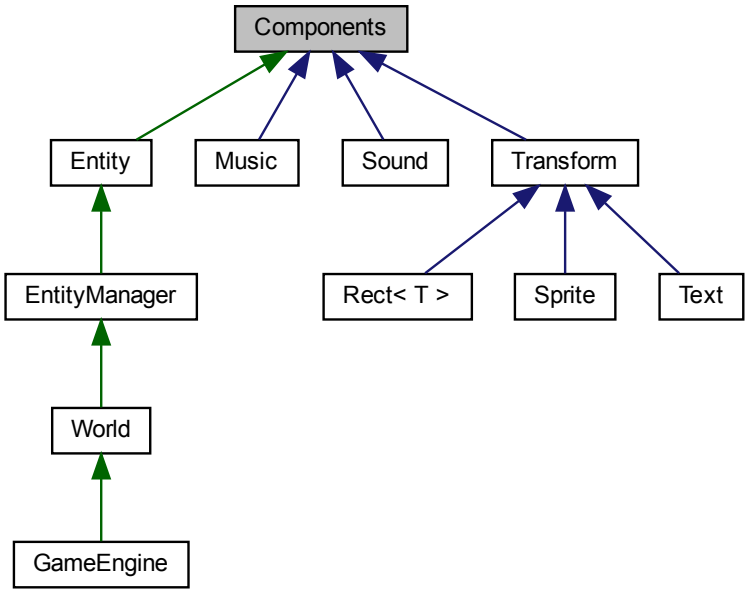
- src/Other/include/Color.h
- src/Other/Color.cpp

4.4 Components Class Reference

Components class: Components is a class that represents a component in the game.

```
#include <Components.h>
```

Inheritance diagram for Components:



Public Member Functions

- Components ()=default

  Default Components constructor.
- virtual ~Components ()=default

  Components destructor.
- virtual bool init ()

  init(): Initialize the component
- virtual void **update** (sf::Time timeDelta)=0

4.4.1 Detailed Description

Components class: Components is a class that represents a component in the game.

Components are the building blocks of the game. They are attached to entities and define their behavior.

4.4.2 Constructor & Destructor Documentation

4.4.2.1 Components()

```
Components::Components ( )  [default]
```

Default Components constructor.

Parameters

void	

Returns

void

4.4.2.2 ~Components()

```
virtual Components::~Components ( )  [virtual], [default]
```

Components destructor.

Parameters

void	

Returns

void

4.4.3 Member Function Documentation

4.4.3.1 init()

```
virtual bool Components::init ( )  [inline], [virtual]
```

init(): Initialize the component

Parameters

void	

Returns

bool: true if the component is initialized, false otherwise

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

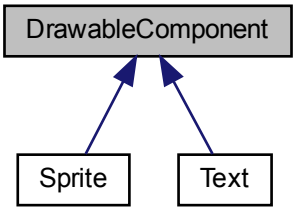
- src/Components/include/Components.h

4.5 DrawableComponent Class Reference

DrawableComponent class: DrawableComponent is a class that represents a drawable component in the game.

```
#include <DrawableComponent.h>
```

Inheritance diagram for DrawableComponent:



Public Member Functions

- virtual ~DrawableComponent ()=default

  Default DrawableComponent constructor.
- virtual void draw (sf::RenderWindow &window) const =0

  draw(): Draw the component

4.5.1 Detailed Description

DrawableComponent class: DrawableComponent is a class that represents a drawable component in the game.

DrawableComponents are components that can be drawn on the screen.

4.5.2 Constructor & Destructor Documentation

4.5.2.1 ~DrawableComponent()

```
virtual DrawableComponent::~DrawableComponent ( )  [virtual], [default]
```

Default DrawableComponent constructor.

Parameters

void	

Returns

void

4.5.3 Member Function Documentation

4.5.3.1 draw()

```
virtual void DrawableComponent::draw (
            sf::RenderWindow & window ) const  [pure virtual]
```

draw(): Draw the component

Parameters

window	Window to draw the component on

Returns

void

Implemented in Text, and Sprite.

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

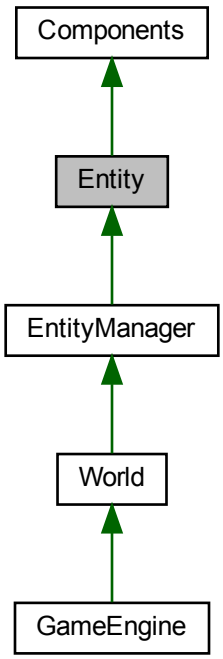
- src/Components/include/DrawableComponent.h

4.6 Entity Class Reference

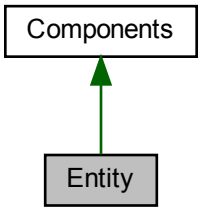
Entity class: Entity is a class that represents an entity in the game.

`#include <entity.h>`

Inheritance diagram for Entity:



Collaboration diagram for Entity:



Public Member Functions

- Entity ()=default

  Default Entity constructor.
- Entity (std::string nameEntity, Archetypes newArchetype=Archetypes())

  Entity constructor.
- ∼Entity () override=default

  Entity destructor.
- bool initEntity ()

  init(): Initialize the entity
- std::string getName () const

  genName(): Get the name of the entity
- void **update** (sf::Time deltaTime) override
- void setName (std::string newName)

  setName(): Set the name of the entity
- void addDrawable (Components ∗component)

  addDrawable(): Add a drawable component to the entity
- void drawEntity (sf::RenderWindow &window)

  drawEntity(): Draw the entities
- template<typename T , typename... TArgs>
  T & addComponent (TArgs &&... args)

  addComponent(): Add a component to the entity
- template<typename T >
  T & getComponent ()

  getComponent(): Get a component from the entity
- template<typename T >
  std::size_t getComponentTypeID () noexcept

  getComponentTypeID(): Get the ID of a component
- std::bitset< 6 > getComponentBitset () const

  getComponentBitset(): Get the bitset of the components
- std::vector< DrawableComponent ∗ > getDrawableComponents () const

  getDrawableComponents(): Get the drawable components of the entity
- std::array< Components ∗, 6 > getComponentArrays () const

  getComponentArrays(): Get the array of components

Additional Inherited Members

4.6.1 Detailed Description

Entity class: Entity is a class that represents an entity in the game.

The Entity class manages components associated with the entity.

4.6.2 Constructor & Destructor Documentation

4.6.2.1 Entity() [1/2]

```
Entity::Entity ( )  [default]
```

Default Entity constructor.

Parameters

void	

Returns

void

4.6.2.2 Entity() [2/2]

```
Entity::Entity (
            std::string nameEntity,
            Archetypes newArchetype = Archetypes() )  [inline], [explicit]
```

Entity constructor.

Parameters

nameEntity	name of the entity
newArchetype	archetype of the entity (optional, default = new archetype)

Returns

void

4.6.2.3 ~Entity()

```
Entity::~Entity ( )  [override], [default]
```

Entity destructor.

Parameters

void	

Returns

void

4.6.3 Member Function Documentation

4.6.3.1 addComponent()

```
template<typename T , typename...  TArgs>
template Text & Entity::addComponent< Text > (
            TArgs &&...  args )
```

addComponent(): Add a component to the entity

Template Parameters

T	Type of the component
TArgs	Variadic template for component constructor arguments.

Parameters

args	arguments of the component

Returns

T&: reference of the component

4.6.3.2 addDrawable()

```
void Entity::addDrawable (
            Components * component )
```

addDrawable(): Add a drawable component to the entity

Parameters

component	component to add

Returns

void

4.6.3.3 drawEntity()

```
void Entity::drawEntity (
            sf::RenderWindow & window )
```

drawEntity(): Draw the entities

Parameters

window	window where the entities are drawn

Returns

void

4.6.3.4 getComponent()

```
template<typename T >
template Text & Entity::getComponent< Text > ( )
```

getComponent(): Get a component from the entity

Template Parameters

T	Type of the component

Parameters

void	

Returns

T&: reference of the component

4.6.3.5 getComponentArrays()

```
std::array<Components*, 6> Entity::getComponentArrays ( ) const  [inline]
```

getComponentArrays(): Get the array of components

Parameters

void	

Returns

std::array<Components*, 6>: array of components

4.6.3.6 getComponentBitset()

```
std::bitset<6> Entity::getComponentBitset ( ) const  [inline]
```

getComponentBitset(): Get the bitset of the components

Parameters

void	

Returns

std::bitset<6>: bitset of the components

4.6.3.7 getComponentTypeID()

```
template<typename T >
template std::size_t Entity::getComponentTypeID< Text > ( )  [noexcept]
```

getComponentTypeID(): Get the ID of a component

Template Parameters

T	Type of the component

Parameters

void	

Returns

std::size_t: ID of the component

4.6.3.8 getDrawableComponents()

```
std::vector<DrawableComponent*> Entity::getDrawableComponents ( ) const  [inline]
```

getDrawableComponents(): Get the drawable components of the entity

Parameters

void	

Returns

std::vector<DrawableComponent*>: drawable components of the entity

4.6.3.9 getName()

```
std::string Entity::getName ( ) const
```

genName(): Get the name of the entity

Parameters

void	

Returns

std::string: name of the entity

4.6.3.10 initEntity()

```
bool Entity::initEntity ( )
```

init(): Initialize the entity

Parameters

void	

Returns

bool: true if the entity is initialized, false otherwise

4.6.3.11 setName()

```
void Entity::setName (
            std::string newName )
```

setName(): Set the name of the entity

Parameters

newName	new name of the entity

Returns

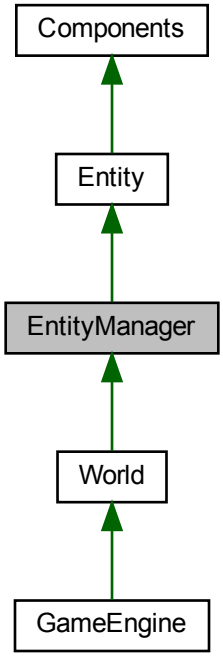
void

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

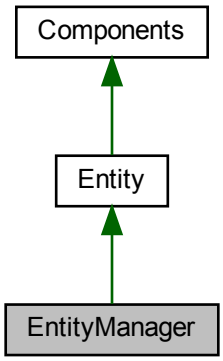
- src/Entity/include/entity.h
- src/Entity/entity.cpp

4.7 EntityManager Class Reference

Inheritance diagram for EntityManager:



Collaboration diagram for EntityManager:



Public Member Functions

- EntityManager ()=default

  Default EntityManager constructor.
- ~EntityManager ()=default

  EntityManager destructor.
- Entity & addEntity (std::string nameEntity, Archetypes newArchetype=Archetypes())

  addEntity(): Create and add a new entity to the entity manager.
- Entity & getEntity (std::string nameEntity)

  getEntity(): Get an entity from the entity manager by its name.
- std::map< std::string, Entity * > getEntities () const

  getEntities(): Get the EntityManager's entities.
- std::map< std::string, Entity * > getEntityMap () const

  getEntityMap(): Get the EntityManager's entity map.
- bool initEntityManager ()

  initEntityManager(): Initialize the EntityManager.

Additional Inherited Members

4.7.1 Constructor & Destructor Documentation

4.7.1.1 EntityManager()

```
EntityManager::EntityManager ( )  [default]
```

Default EntityManager constructor.

Parameters

void	

Returns

void

4.7.1.2 ~EntityManager()

```
EntityManager::~EntityManager ( )  [default]
```

EntityManager destructor.

Parameters

void	

Returns

void

4.7.2 Member Function Documentation

4.7.2.1 addEntity()

```
Entity & EntityManager::addEntity (
            std::string nameEntity,
            Archetypes newArchetype = Archetypes() )
```

addEntity(): Create and add a new entity to the entity manager.

Template Parameters

T	Type of the entity.
TArgs	Type of the arguments.

Parameters

args	Arguments of the entity.

4.7.2.2 getEntities()

```
std::map< std::string, Entity * > EntityManager::getEntities ( ) const
```

getEntities(): Get the EntityManager's entities.

Parameters

void	

Returns

std::map<std::string, Entity *>: Entities.

4.7.2.3 getEntity()

```
Entity & EntityManager::getEntity (
            std::string nameEntity )
```

getEntity(): Get an entity from the entity manager by its name.

Template Parameters

T	Type of the entity.

Parameters

nameEntity	Name of the entity.

Returns

T&: Reference of the entity.

4.7.2.4 getEntityMap()

```
std::map<std::string, Entity*> EntityManager::getEntityMap ( ) const  [inline]
```

getEntityMap(): Get the EntityManager's entity map.

Parameters

void	

Returns

Entity::EntityMap: Entity map.

4.7.2.5 initEntityManager()

```
bool EntityManager::initEntityManager ( )  [inline]
```

initEntityManager(): Initialize the EntityManager.

Parameters

void	

Returns

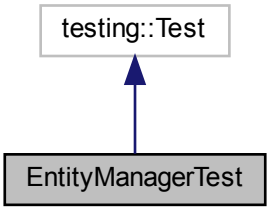
bool: true if the EntityManager is initialized, false otherwise.

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

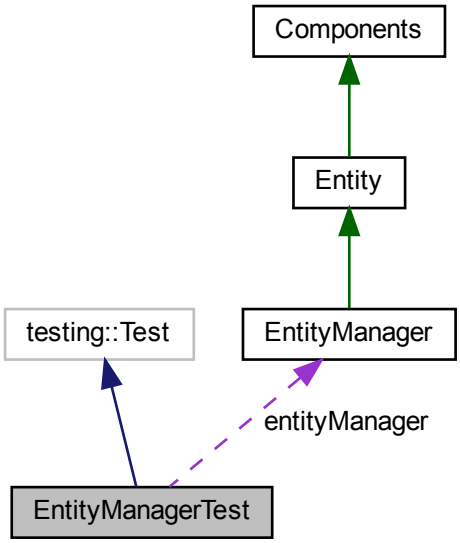
- src/Entity/include/entityManager.h
- src/Entity/entityManager.cpp

4.8 EntityManagerTest Class Reference

Inheritance diagram for EntityManagerTest:



Collaboration diagram for EntityManagerTest:



Protected Member Functions

- void **SetUp** () override
- void **TearDown** () override

Protected Attributes

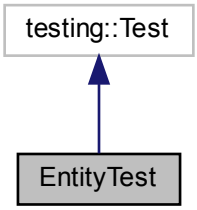
- EntityManager **entityManager** {}

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

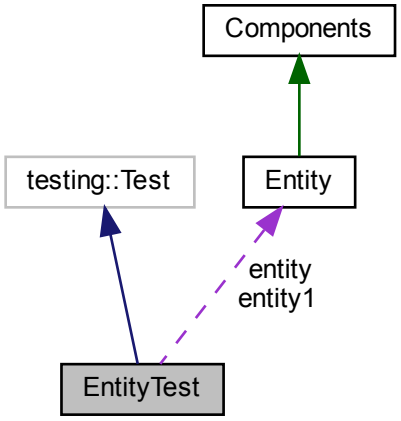
- tests/Entity/TestEntityManager.cpp

4.9 EntityTest Class Reference

Inheritance diagram for EntityTest:



Collaboration diagram for EntityTest:



Protected Attributes

- Entity **entity**
- Entity **entity1**

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

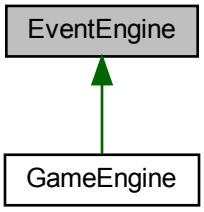
- tests/Entity/TestEntity.cpp

4.10 EventEngine Class Reference

EventEngine class: EventEngine is a class that represents the event engine of the game.

`#include <eventEngine.h>`

Inheritance diagram for EventEngine:



Public Member Functions

- EventEngine ()=default

  Default EventEngine constructor.
- virtual ~EventEngine ()=default

  EventEngine destructor.
- bool init () const

  init(): Initialize the EventEngine.
- sf::Event & getEvent ()

  getEvent(): Get the SFML Event.
- void addKeyPressed (sf::Keyboard::Key keyboard, std::function< void()> function)

  addKeyPressed(): Add a key pressed to the map.
- void addMouseButtonPressed (sf::Mouse::Button mouse, std::function< void()> function)

  addMouseButtonPressed(): Add a mouse button pressed to the map.
- void addMouseMoved (std::string nameEntity, std::function< void()> function)

  addMouseMoved(): Add a mouse moved to the map.
- std::map< sf::Keyboard::Key, std::function< void()> > & getKeyPressedMap ()

  getKeyPressedMap(): Get the map of the key pressed.
- std::map< sf::Mouse::Button, std::function< void()> > & getMouseButtonPressedMap ()

  getMouseButtonPressedMap(): Get the map of the mouse button pressed.
- std::map< std::string, std::function< void()> > & getMouseMovedMap ()

  getMouseMovedPressedMap(): Get the map of the key pressed.

4.10.1 Detailed Description

EventEngine class: EventEngine is a class that represents the event engine of the game.

The EventEngine class manages the events of the game.

4.10.2 Constructor & Destructor Documentation

4.10.2.1 EventEngine()

```
EventEngine::EventEngine ( )  [default]
```

Default EventEngine constructor.

Parameters

void	

Returns

void

4.10.2.2 ~EventEngine()

```
virtual EventEngine::~EventEngine ( )  [virtual], [default]
```

EventEngine destructor.

Parameters

void	

Returns

void

4.10.3 Member Function Documentation

4.10.3.1 addKeyPressed()

```
void EventEngine::addKeyPressed (
            sf::Keyboard::Key keyboard,
            std::function< void()> function )
```

addKeyPressed(): Add a key pressed to the map.

Parameters

keyboard	SFML Keyboard::Key of the key pressed.
function	Function to execute when the key is pressed.

Returns

void

4.10.3.2 addMouseButtonPressed()

```
void EventEngine::addMouseButtonPressed (
            sf::Mouse::Button mouse,
            std::function< void()> function )
```

addMouseButtonPressed(): Add a mouse button pressed to the map.

Parameters

mouse	SFML Mouse::Button of the mouse button pressed.
function	Function to execute when the mouse button is pressed.

Returns

void

4.10.3.3 addMouseMoved()

```
void EventEngine::addMouseMoved (
            std::string nameEntity,
            std::function< void()> function )
```

addMouseMoved(): Add a mouse moved to the map.

Parameters

nameEntity	: Name of the Entity you want.
function	Function to execute when the mouse moved on entity.

Returns

void

4.10.3.4 getEvent()

```
sf::Event& EventEngine::getEvent ( )  [inline]
```

getEvent(): Get the SFML Event.

Parameters

void	

Returns

sf::Event: The SFML Event.

4.10.3.5 getKeyPressedMap()

```
std::map<sf::Keyboard::Key, std::function<void()> >& EventEngine::getKeyPressedMap ( )  [inline]
```

getKeyPressedMap(): Get the map of the key pressed.

Parameters

void	

Returns

std::map<sf::Keyboard::Key, std::function<void()>>: The map of the key pressed.

4.10.3.6 getMouseButtonPressedMap()

```
std::map<sf::Mouse::Button, std::function<void()> >& EventEngine::getMouseButtonPressedMap (
)  [inline]
```

getMouseButtonPressedMap(): Get the map of the mouse button pressed.

Parameters

void	

Returns

std::map<sf::Mouse::Button, std::function<void()>>: The map of the mouse button pressed.

4.10.3.7 getMouseMovedMap()

```
std::map<std::string, std::function<void()> >& EventEngine::getMouseMovedMap ( )  [inline]
```

getMouseMovedPressedMap(): Get the map of the key pressed.

Parameters

void	

Returns

std::map<std::string, std::function<void()>>: The map of the mouse moved.

4.10.3.8 init()

```
bool EventEngine::init ( ) const  [inline]
```

init(): Initialize the EventEngine.

Parameters

void	

Returns

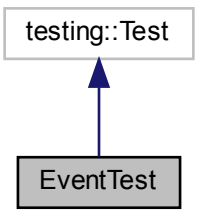
bool: True if the EventEngine is initialized, false otherwise.

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

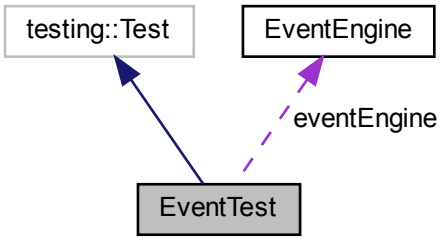
- src/Event/include/eventEngine.h
- src/Event/eventEngine.cpp

4.11 EventTest Class Reference

Inheritance diagram for EventTest:



Collaboration diagram for EventTest:



Protected Attributes

- EventEngine **eventEngine**

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

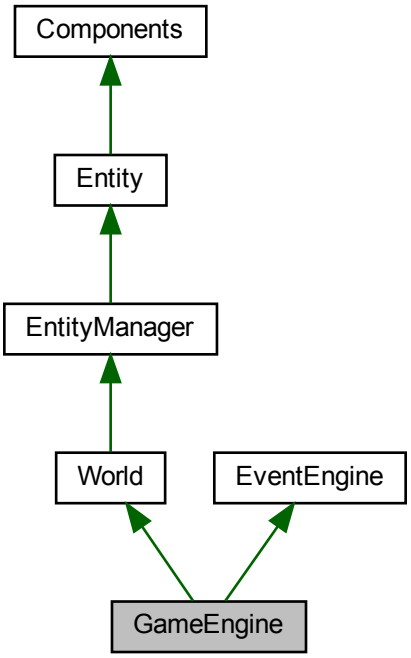
- tests/Event/TestEvent.cpp

4.12 GameEngine Class Reference

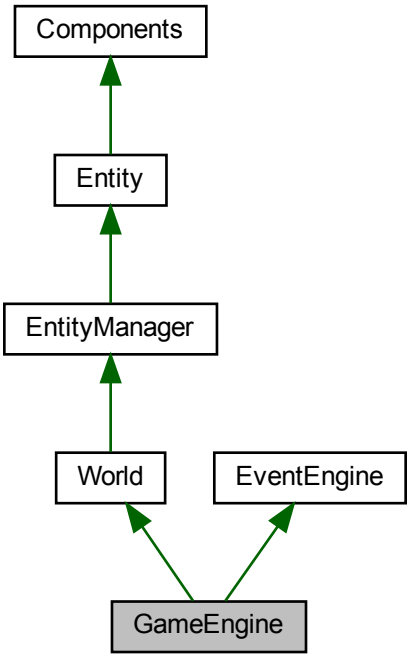
GameEngine class: GameEngine is a class that represents the game engine.

```
#include <gameEngine.h>
```

Inheritance diagram for GameEngine:



Collaboration diagram for GameEngine:



Public Member Functions

- GameEngine ()=default

  < *Time of the game. Using with the Clock.*
- GameEngine (sf::VideoMode mode, std::string type, sf::String title, sf::Uint32 style=sf::Style::Default, const sf::ContextSettings &settings=sf::ContextSettings())

  GameEngine constructor with parameters.
- ~GameEngine ()=default

  GameEngine destructor.
- void run (std::map< std::string, std::unique_ptr< World >> mapWorld, std::map< std::string, std::string > pathRessources, std::string firstScene)

  run(): Run the game engine (with parameters).
- void run ()

  run(): Run the game engine (without parameters).
- void renderGameEngine ()

  renderGameEngine(): Render the game engine.
- void eventGameEngine ()

  eventGameEngine(): Manage the events of the game engine.
- bool isWindowOpen ()

  isWindowOpen(): Check if the window is open.
- void updateGameEngine ()

  updateGameEngine(): Update the game engine.
- std::vector< std::string > getFilesRessources (std::string pathDirectory)

getFilesRessources(): Get all the ressources type files in the given directory.

- void initialize (std::map< std::string, std::unique_ptr< World >> mapWorld, std::map< std::string, std::string > pathRessources, std::string firstScene)

  initialize(): Initialize the game engine.
- void initializeSpriteFunction ()

  initializeSpriteFunction(): Initialize the sprites function.
- void initializeSoundFunction ()

  initializeSoundFunction(): Initialize the sound function.
- void initializeMusicFunction ()

  initializeMusicFunction(): Initialize the music function.
- void **initializeTextFunction** ()
- void initializeAllFiles (std::map< std::string, std::string > pathRessources)

  initializeAllFiles(): Initialize all the ressources files the engine need.
- void initializeTexture (std::string path)

  initializeTexture(): Initialize the textures with their path.
- void initializeSound (std::string path)

  initializeSound(): Initialize the sound with their path.
- void initializeMusic (std::string path)

  initializeMusic(): Initialize the music with their path.
- void **initializeFont** (std::string path)
- void initializeWorldMap (std::map< std::string, std::unique_ptr< World >> mapWorld)

  initializeWorldMap(): Initialize the world map.
- const auto & getWindow ()

  getWindow(): Get the window.
- void setWindow ()

  setWindow(): Set the window.
- EventEngine & getEventEngine ()

  getEventEngine(): Get the event engine.
- void setCurrentWorld (World *world)

  setCurrentWorld(): Set GameEngine's current world.
- World * getCurrentWorld ()

  getCurrentWorld(): Get GameEngine's current world.
- World & addWorld (std::string nameWorld, std::unique_ptr< World > world)

  addWorld(): Add a world to the world map.
- World & getWorld (std::string nameWorld)

  getWorld(): Get a world from the world map with its name.
- std::map< std::string, std::shared_ptr< sf::Texture > > getMapTexture () const

  getMapTexture(): Get GameEngine's map of the textures.
- std::map< std::string, World * > getWorldMap () const

  getWorldMap(): Get GameEngine's map of the worlds.
- std::map< std::string, std::shared_ptr< sf::Music > > getMapMusic () const

  getMapMusic(): Get GameEngine's map of the music.
- std::map< std::string, std::shared_ptr< sf::SoundBuffer > > **getMapSound** () const
- std::map< std::string, std::shared_ptr< sf::Font > > **getMapFont** () const

Additional Inherited Members

4.12.1 Detailed Description

GameEngine class: GameEngine is a class that represents the game engine.

The GameEngine class manages the game engine.

4.12.2 Constructor & Destructor Documentation

4.12.2.1 GameEngine() [1/2]

```
GameEngine::GameEngine ( )  [default]
```

< Time of the game. Using with the Clock.

Default GameEngine constructor.

Parameters

void	

Returns

void

4.12.2.2 GameEngine() [2/2]

```
GameEngine::GameEngine (
            sf::VideoMode mode,
            std::string type,
            sf::String title,
            sf::Uint32 style = sf::Style::Default,
            const sf::ContextSettings & settings = sf::ContextSettings() )  [explicit]
```

GameEngine constructor with parameters.

Parameters

mode	Video mode.
type	Type of the graphics ("2D" or "3D").
title	Title of the window.
style	Style of the window (sf::Style::Default by default).
settings	Settings of the window.

Returns

void

4.12.2.3 ~GameEngine()

```
GameEngine::~GameEngine ( )  [default]
```

GameEngine destructor.

Parameters

void	

Returns

void

4.12.3 Member Function Documentation

4.12.3.1 addWorld()

```
World & GameEngine::addWorld (
            std::string nameWorld,
            std::unique_ptr< World > world )
```

addWorld(): Add a world to the world map.

Parameters

nameWorld	Name of the world.
world	World to add.

Returns

World&: The world.

4.12.3.2 eventGameEngine()

```
void GameEngine::eventGameEngine ( )
```

eventGameEngine(): Manage the events of the game engine.

Parameters

void	

Returns

void

4.12.3.3 getCurrentWorld()

```
World* GameEngine::getCurrentWorld ( )  [inline]
```

getCurrentWorld(): Get GameEngine's current world.

Parameters

void	

Returns

World*: GameEngine's current world.

4.12.3.4 getEventEngine()

```
EventEngine& GameEngine::getEventEngine ( )  [inline]
```

getEventEngine(): Get the event engine.

Parameters

void	

Returns

EventEngine&: GameEngine's EventEngine.

4.12.3.5 getFilesRessources()

```
std::vector< std::string > GameEngine::getFilesRessources (
            std::string pathDirectory )
```

getFilesRessources(): Get all the ressources type files in the given directory.

Parameters

pathDirectory	Path of the directory.

Returns

std::vector<std::string>: Vector of the ressources type files' names.

4.12.3.6 getMapMusic()

```
std::map<std::string, std::shared_ptr<sf::Music> > GameEngine::getMapMusic ( ) const  [inline]
```

getMapMusic(): Get GameEngine's map of the music.

Parameters

void	

Returns

std::map<std::string, std::shared_ptr<sf::Music>>: GameEngine's map of the musics.

4.12.3.7 getMapTexture()

```
std::map<std::string, std::shared_ptr<sf::Texture> > GameEngine::getMapTexture ( ) const
[inline]
```

getMapTexture(): Get GameEngine's map of the textures.

Parameters

void	

Returns

std::map<std::string, std::shared_ptr<sf::Texture>>: GameEngine's map of the textures.

4.12.3.8 getWindow()

```
const auto& GameEngine::getWindow ( )  [inline]
```

getWindow(): Get the window.

Parameters

void	

Returns

std::variant<std::unique_ptr<sf::Window>, std::unique_ptr<sf::RenderWindow>>: The GameEngine's window

4.12.3.9 getWorld()

```
World & GameEngine::getWorld (
            std::string nameWorld )
```

getWorld(): Get a world from the world map with its name.

Parameters

nameWorld	Name of the world.

Returns

World&: GameEngine's world.

4.12.3.10 getWorldMap()

```
std::map<std::string, World *> GameEngine::getWorldMap ( ) const  [inline]
```

getWorldMap(): Get GameEngine's map of the worlds.

Parameters

void	

Returns

std::map<std::string, World*>: GameEngine's map of the worlds.

4.12.3.11 initialize()

```
void GameEngine::initialize (
            std::map< std::string, std::unique_ptr< World >> mapWorld,
            std::map< std::string, std::string > pathRessources,
            std::string firstScene )
```

initialize(): Initialize the game engine.

Parameters

mapWorld	Map of World classes' unique pointers.
pathRessources	Map of the path of the ressources (assets).
firstScene	Name of the first scene.

Returns

void

4.12.3.12 initializeAllFiles()

```
void GameEngine::initializeAllFiles (
            std::map< std::string, std::string > pathRessources )
```

initializeAllFiles(): Initialize all the ressources files the engine need.

Parameters

void	

Returns

void

4.12.3.13 initializeMusic()

```
void GameEngine::initializeMusic (
            std::string path )
```

initializeMusic(): Initialize the music with their path.

Parameters

path	Path of the texture.

Returns

void

4.12.3.14 initializeMusicFunction()

```
void GameEngine::initializeMusicFunction ( )
```

initializeMusicFunction(): Initialize the music function.

Parameters

void	

Returns

void

4.12.3.15 initializeSound()

```
void GameEngine::initializeSound (
            std::string path )
```

initializeSound(): Initialize the sound with their path.

Parameters

path	Path of the texture.

Returns

void

4.12.3.16 initializeSoundFunction()

```
void GameEngine::initializeSoundFunction ( )
```

initializeSoundFunction(): Initialize the sound function.

Parameters

void	

Returns

void

4.12.3.17 initializeSpriteFunction()

```
void GameEngine::initializeSpriteFunction ( )
```

initializeSpriteFunction(): Initialize the sprites function.

Parameters

void	

Returns

void

4.12.3.18 initializeTexture()

```
void GameEngine::initializeTexture (
            std::string path )
```

initializeTexture(): Initialize the textures with their path.

Parameters

path	Path of the texture.

Returns

void

4.12.3.19 initializeWorldMap()

```
void GameEngine::initializeWorldMap (
            std::map< std::string, std::unique_ptr< World >> mapWorld )
```

initializeWorldMap(): Initialize the world map.

Parameters

mapWorld	Map of World classes' unique pointers.

Returns

void

4.12.3.20 isWindowOpen()

```
bool GameEngine::isWindowOpen ( )
```

isWindowOpen(): Check if the window is open.

Parameters

void	

Returns

bool: True if the window is open, false otherwise.

4.12.3.21 renderGameEngine()

```
void GameEngine::renderGameEngine ( )
```

renderGameEngine(): Render the game engine.

Parameters

void	

Returns

void

4.12.3.22 run() [1/2]

```
void GameEngine::run ( )
```

run(): Run the game engine (without parameters).

Parameters

void	

Returns

void

4.12.3.23 run() [2/2]

```
void GameEngine::run (
            std::map< std::string, std::unique_ptr< World >> mapWorld,
            std::map< std::string, std::string > pathRessources,
            std::string firstScene )
```

run(): Run the game engine (with parameters).

Parameters

mapWorld	Map of World classes' unique pointers.
pathRessources	Map of the path of the ressources (assets).
firstScene	Name of the first scene.

Returns

void

4.12.3.24 setCurrentWorld()

```
void GameEngine::setCurrentWorld (
            World * world )
```

setCurrentWorld(): Set GameEngine's current world.

Parameters

world	World to set.

Returns

void

4.12.3.25 setWindow()

```
void GameEngine::setWindow ( )
```

setWindow(): Set the window.

Parameters

void	

Returns

void

4.12.3.26 updateGameEngine()

```
void GameEngine::updateGameEngine ( )
```

updateGameEngine(): Update the game engine.

Parameters

void	

Returns

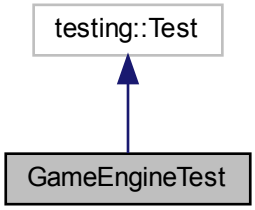
void

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

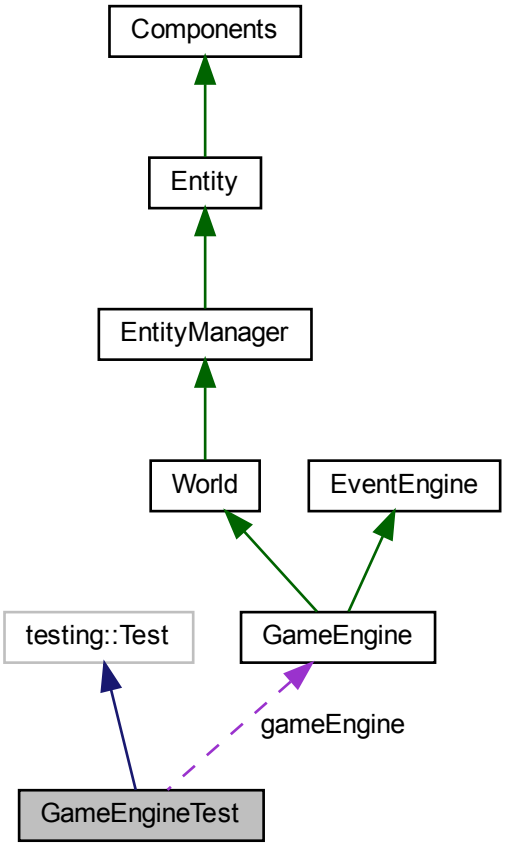
- src/GameEngine/include/gameEngine.h
- src/GameEngine/gameEngine.cpp

4.13 GameEngineTest Class Reference

Inheritance diagram for GameEngineTest:



Collaboration diagram for GameEngineTest:



Protected Member Functions

- void **TearDown** () override

Protected Attributes

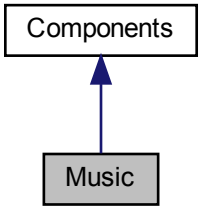
- GameEngine * **gameEngine**

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

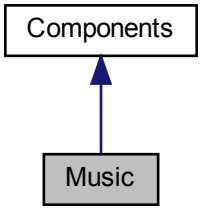
- tests/GameEngine/TestGameEngine.cpp

4.14 Music Class Reference

Inheritance diagram for Music:



Collaboration diagram for Music:



Public Member Functions

- void **setMusic** (std::map< std::string, std::shared_ptr< sf::Music >> mapMusic, std::string nameMusic)
- void **setDeferredMusic** (std::function< void()> setter)
- void **applyDeferredMusic** ()
- std::shared_ptr< sf::Music > **getMusic** () const
- void **play** ()
- void **play** (int seconds)
- void **stop** ()
- int **getBit** () const

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

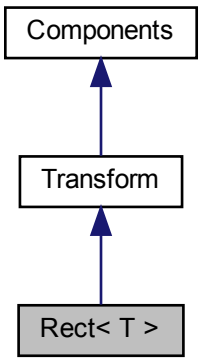
- src/Components/all_components/include/Music.h
- src/Components/all_components/Music.cpp

4.15 Rect< T > Class Template Reference

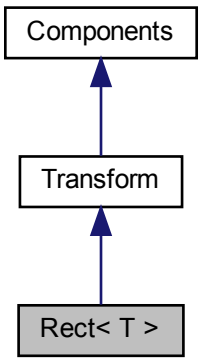
Rect class: Rect is a class that represents a rectangle.

`#include <Rect.h>`

Inheritance diagram for Rect< T >:



Collaboration diagram for Rect< T >:



Public Member Functions

- Rect (T left, T top, T width, T height)

  < *Rect is the variable you can use for change the data in RectStruct.*
- ~Rect ()=default

Rect destructor.

- RectStruct getRect () const

  getRect(): Get the using RectStruct.
- T getLeft () const

  getLeft(): Get the using RectStruct left.
- T getTop () const

  getTop(): Get the using RectStruct top.
- T getWidth () const

  getWidth(): Get the using RectStruct width.
- T getHeight () const

  getHeight(): Get the using RectStruct height.
- bool contains (T x, T y) const

  contains(): Check if a point is in the rectangle.

4.15.1 Detailed Description

template<typename T>
class Rect< T >

Rect class: Rect is a class that represents a rectangle.

This create a rectangle and using for what you want.

4.15.2 Constructor & Destructor Documentation

4.15.2.1 Rect()

```
template<typename T >
Rect< T >::Rect (
            T left,
            T top,
            T width,
            T height )  [inline]
```

< Rect is the variable you can use for change the data in RectStruct.

Rect constructor with parameters.

Template Parameters

T	Type of the rect.

Parameters

left	Position x.
top	Position y.

Parameters

width	Width of your rectangle.
height	Height of your rectangle.

Returns

void

4.15.2.2 ~Rect()

```
template<typename T >
Rect< T >::~Rect ( )  [default]
```

Rect destructor.

Template Parameters

T	Type of the rect.

Parameters

void	

Returns

void

4.15.3 Member Function Documentation

4.15.3.1 contains()

```
template<typename T >
template bool Rect< T >::contains (
            T x,
            T y ) const
```

contains(): Check if a point is in the rectangle.

Template Parameters

T	Type of the rect.

Parameters

x	: Position x of the point.
y	: Position y of the point.

Returns

T : T is the type you want (float, int,...).

4.15.3.2 getHeight()

```
template<typename T >
T Rect< T >::getHeight ( ) const  [inline]
```

getHeight(): Get the using RectStruct height.

Template Parameters

T	Type of the rect.

Parameters

void	

Returns

T : T is the type you want (float, int,...).

4.15.3.3 getLeft()

```
template<typename T >
T Rect< T >::getLeft ( ) const  [inline]
```

getLeft(): Get the using RectStruct left.

Template Parameters

T	Type of the rect.

Parameters

void	

Returns

T : T is the type you want (float, int,...).

4.15.3.4 getRect()

```
template<typename T >
RectStruct Rect< T >::getRect ( ) const  [inline]
```

getRect(): Get the using RectStruct.

Parameters

void	

Returns

Rect

4.15.3.5 getTop()

```
template<typename T >
T Rect< T >::getTop ( ) const  [inline]
```

getTop(): Get the using RectStruct top.

Template Parameters

T	Type of the rect.

Parameters

void	

Returns

T : T is the type you want (float, int,...).

4.15.3.6 getWidth()

```
template<typename T >
T Rect< T >::getWidth ( ) const  [inline]
```

getWidth(): Get the using RectStruct width.

Template Parameters

T	Type of the rect.

Parameters

void	

Returns

T : T is the type you want (float, int,...).

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

- src/Other/include/Rect.h
- src/Other/Rect.cpp

4.16 Script Class Reference

Public Member Functions

- virtual void **execute** ()=0

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

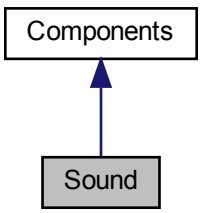
- src/Script/include/Script.h

4.17 Sound Class Reference

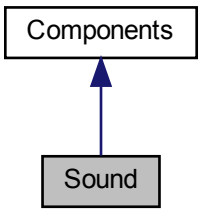
Sound class: Sound is a class that represents the audio properties of a Component.

`#include <Sound.h>`

Inheritance diagram for Sound:



Collaboration diagram for Sound:



Public Member Functions

- Sound ()=default

  Default Sound constructor.
- Sound (const sf::SoundBuffer &buffer)

  Sound constructor with an existing sound buffer. Automatically set the sound.
- ∼Sound () override=default

  Sound destructor.
- bool loadSoundBuffer (const std::string &filePath)

  loadSoundBuffer(): Load the sound buffer from a file. Automatically set the component sound. /!\ Only supports .wav, .ogg and FLAC files.
- bool setSoundBuffer (const sf::SoundBuffer &buffer)

  setSoundBuffer(): Set the sound buffer with an existing one. Automatically set the component sound.
- const sf::SoundBuffer & getSoundBuffer () const

  getSoundBuffer(): Get the current sound buffer.
- bool setSound (const sf::Sound &sound)

  setSound(): Set the sound with an existing one. Automatically set the component sound buffer.
- void **setSound** (std::map< std::string, std::shared_ptr< sf::SoundBuffer >> mapSound, std::string name↩ Sound)
- void **setDeferredSound** (std::function< void()> setter)
- void **applyDeferredSound** ()
- const sf::Sound & getSound () const

  getSound(): Get the current sound.
- void play ()

  play(): Play the audio.
- void pause ()

  pause(): Pause the audio.
- void stop ()

  stop(): Stop the audio.
- void setLoop (bool loop)

  setLoop(): Set whether the audio should loop or not.
- void setVolume (float volume)

  setVolume(): Set the volume of the audio.
- float getVolume () const

  getVolume(): Get the current volume level.
- bool isPlaying () const

  isPlaying(): Check if the audio is currently playing.
- int **getBit** () const

4.17.1 Detailed Description

Sound class: Sound is a class that represents the audio properties of a Component.

The Sound class manages the audio representation of a Component using SFML.

4.17.2 Constructor & Destructor Documentation

4.17.2.1 Sound() [1/2]

```
Sound::Sound ( )  [default]
```

Default Sound constructor.

Parameters

void	

Returns

void

4.17.2.2 Sound() [2/2]

```
Sound::Sound (
            const sf::SoundBuffer & buffer )  [explicit]
```

Sound constructor with an existing sound buffer. Automatically set the sound.

Parameters

buffer	SFML SoundBuffer for audio.

Returns

void

4.17.2.3 ~Sound()

```
Sound::~Sound ( )  [override], [default]
```

Sound destructor.

Parameters

void	

Returns

void

4.17.3 Member Function Documentation

4.17.3.1 getSound()

```
const sf::Sound & Sound::getSound ( ) const
```

getSound(): Get the current sound.

Parameters

void	

Returns

sf::Sound: SFML Sound for audio.

4.17.3.2 getSoundBuffer()

```
const sf::SoundBuffer & Sound::getSoundBuffer ( ) const
```

getSoundBuffer(): Get the current sound buffer.

Parameters

void	

Returns

sf::SoundBuffer: SFML SoundBuffer for audio.

4.17.3.3 getVolume()

```
float Sound::getVolume ( ) const
```

getVolume(): Get the current volume level.

Parameters

void	

Returns

float: Volume level (0 to 100).

4.17.3.4 isPlaying()

```
bool Sound::isPlaying ( ) const
```

isPlaying(): Check if the audio is currently playing.

Parameters

void	

Returns

bool: True if the audio is playing, false otherwise.

4.17.3.5 loadSoundBuffer()

```
bool Sound::loadSoundBuffer (
            const std::string & filePath )
```

loadSoundBuffer(): Load the sound buffer from a file. Automatically set the component sound. /!\ Only supports .wav, .ogg and FLAC files.

Parameters

filePath	Path to the audio file.

Returns

bool: True if the sound buffer has been loaded, false otherwise.

4.17.3.6 pause()

```
void Sound::pause ( )
```

pause(): Pause the audio.

Parameters

void	

Returns

void

4.17.3.7 play()

```
void Sound::play ( )
```

play(): Play the audio.

Parameters

void	

Returns

void

4.17.3.8 setLoop()

```
void Sound::setLoop (
            bool loop )
```

setLoop(): Set whether the audio should loop or not.

Parameters

loop	True to enable looping, false to disable.

Returns

void

4.17.3.9 setSound()

```
bool Sound::setSound (
            const sf::Sound & sound )
```

setSound(): Set the sound with an existing one. Automatically set the component sound buffer.

Parameters

sound	SFML Sound for audio.

Returns

bool: True if the sound has been set, false otherwise.

4.17.3.10 setSoundBuffer()

```
bool Sound::setSoundBuffer (
            const sf::SoundBuffer & buffer )
```

setSoundBuffer(): Set the sound buffer with an existing one. Automatically set the component sound.

Parameters

buffer	SFML SoundBuffer for audio.

Returns

bool: True if the sound buffer has been set, false otherwise.

4.17.3.11 setVolume()

```
void Sound::setVolume (
            float volume )
```

setVolume(): Set the volume of the audio.

Parameters

volume	Volume level (0 to 100).

Returns

void

4.17.3.12 stop()

```
void Sound::stop ( )
```

stop(): Stop the audio.

Parameters

void	

Returns

void

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

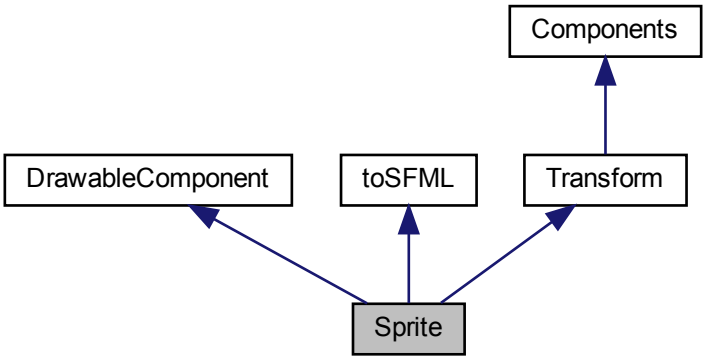
- src/Components/all_components/include/Sound.h
- src/Components/all_components/Sound.cpp

4.18 Sprite Class Reference

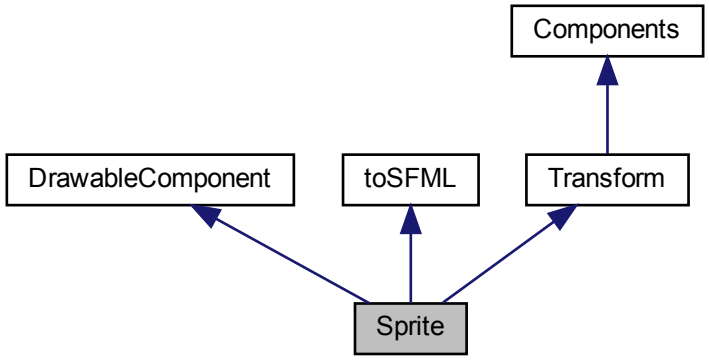
Sprite class: Sprite is a class that represents the rendering properties of a Component.

`#include <Sprite.h>`

Inheritance diagram for Sprite:



Collaboration diagram for Sprite:



Public Member Functions

- Sprite ()
  < *Doing the animation.*
- Sprite (const std::string &texturePath)
  Sprite constructor with an existing texture path.
- ~Sprite () override=default
  Sprite destructor.
- Transform * **getTransform** () const
- void **setTransform** (Transform &newTransform)
- bool initSprite () const
  init(): Initialize the Sprite.
- int getBit () const
  getBit(): Get the bit of the Sprite.
- void draw (sf::RenderWindow &window) const override
  draw(): Draw the Sprite.
- void **update** (sf::Time deltaTime) override
- void createSprite (const std::string &texturePath)
  createSprite(): Create the SFML Sprite with a texture path for rendering.
- void createSprite (const sf::Texture &existingTexture)
  createSprite(): Create the SFML Sprite with an existing texture for rendering.
- void createSprite ()
  createSprite(): Create the SFML Sprite with the component's texture for rendering.
- sf::Sprite getSprite () const
  getSprite(): Get the SFML Sprite for rendering.
- sf::Texture getTexture () const
  getTexture(): Get the SFML Texture for the sprite.
- bool isTextureLoaded () const
  isTextureLoaded(): Check if the texture is loaded.
- void setSprite (const sf::Sprite &sprite)
  setSprite(): Set the SFML Sprite with an existing one for rendering.

- void setSprite (std::map< std::string, std::shared_ptr< sf::Texture >> mapTexture, std::string nameTexture, bool animate=false, std::vector< Rect< int >> newFrames=std::vector< Rect< int >>(), int durationOf↩ Frame=100)

  setSprite(): Set the SFML Sprite with a map of string and textures, a texture name and a map of string and vector of floats.
- void setTransformSprite (Vector2< float > newPosition, float newRotation, Vector2< float > newScale)

  setTransformSprite(): Set the sprite transform with new value and set the value on the Transform component.
- void setTransformSprite ()

  setTransformSprite(): Set the transform of the sprite based on the Transform component value.
- void setPosition (Vector2< float > newPosition)

  setPosition(): Set the position of the sprite with new value.
- void setPosition ()

  setPosition(): Set the position of the sprite based on the Transform component value.
- void setRotation (float newRotation)

  setRotation(): Set the rotation of the sprite with new value.
- void setRotation ()

  setRotation(): Set the rotation of the sprite based on the Transform component value.
- void setScale (Vector2< float > newScale)

  setScale(): Set the the scale of the sprite with new value.
- void setScale ()

  setScale(): Set the scale of the sprite based on the Transform component value.
- void setDeferredSprite (std::function< void()> setter)

  setDeferredSprite(): Set the deferred sprite.
- void applyDeferredSprite ()

  applyDeferredSprite(): Apply the deferred sprite.
- void setTexture (const sf::Texture &existingTexture)

  setTexture(): Set the texture with an existing one for the sprite.
- Rect< float > **getBounds** () const

4.18.1 Detailed Description

Sprite class: Sprite is a class that represents the rendering properties of a Component.

The Sprite class manages the graphical representation of a Component using SFML.

4.18.2 Constructor & Destructor Documentation

4.18.2.1 Sprite() [1/2]

```
Sprite::Sprite ( )  [inline]
```

< Doing the animation.

Default Sprite constructor.

Parameters

void	

Returns

void

4.18.2.2 Sprite() [2/2]

```
Sprite::Sprite (
            const std::string & texturePath )  [inline]
```

Sprite constructor with an existing texture path.

Parameters

texturePath	Path to the texture file for the sprite.

Returns

void

4.18.2.3 ~Sprite()

```
Sprite::~Sprite ( )  [override], [default]
```

Sprite destructor.

Parameters

void	

Returns

void

4.18.3 Member Function Documentation

4.18.3.1 applyDeferredSprite()

```
void Sprite::applyDeferredSprite ( )
```

applyDeferredSprite(): Apply the deferred sprite.

Parameters

void	

Returns

void

4.18.3.2 createSprite() [1/3]

```
void Sprite::createSprite ( )
```

createSprite(): Create the SFML Sprite with the component's texture for rendering.

Parameters

void	

Returns

void

4.18.3.3 createSprite() [2/3]

```
void Sprite::createSprite (
            const sf::Texture & existingTexture )
```

createSprite(): Create the SFML Sprite with an existing texture for rendering.

Parameters

existingTexture	SFML Texture for the sprite

Returns

void

4.18.3.4 createSprite() [3/3]

```
void Sprite::createSprite (
            const std::string & texturePath )
```

createSprite(): Create the SFML Sprite with a texture path for rendering.

Parameters

texturePath	Path to the texture file for the sprite.

Returns

void

4.18.3.5 draw()

```
void Sprite::draw (
            sf::RenderWindow & window ) const  [override], [virtual]
```

draw(): Draw the Sprite.

Parameters

window	SFML RenderWindow where the Sprite will be drawn.

Returns

void

Implements DrawableComponent.

4.18.3.6 getBit()

```
int Sprite::getBit ( ) const  [inline]
```

getBit(): Get the bit of the Sprite.

Parameters

void	

Returns

int: The bit of the Sprite.

4.18.3.7 getSprite()

```
sf::Sprite Sprite::getSprite ( ) const
```

getSprite(): Get the SFML Sprite for rendering.

Parameters

void	

Returns

sf::Sprite: SFML Sprite for rendering

4.18.3.8 getTexture()

```
sf::Texture Sprite::getTexture ( ) const
```

getTexture(): Get the SFML Texture for the sprite.

Parameters

void	

Returns

sf::Texture: SFML Texture for the sprite

4.18.3.9 initSprite()

```
bool Sprite::initSprite ( ) const  [inline]
```

init(): Initialize the Sprite.

Parameters

void	

Returns

bool: True if the Sprite is initialized, false otherwise.

4.18.3.10 isTextureLoaded()

```
bool Sprite::isTextureLoaded ( ) const  [inline]
```

isTextureLoaded(): Check if the texture is loaded.

Parameters

void	

Returns

bool: True if the texture is loaded, false otherwise.

4.18.3.11 setDeferredSprite()

```
void Sprite::setDeferredSprite (
            std::function< void()> setter )
```

setDeferredSprite(): Set the deferred sprite.

Parameters

setter	Function that will set the sprite.

Returns

void

4.18.3.12 setPosition() [1/2]

```
void Sprite::setPosition ( )
```

setPosition(): Set the position of the sprite based on the Transform component value.

Parameters

void	

Returns

void

4.18.3.13 setPosition() [2/2]

```
void Sprite::setPosition (
            Vector2< float > newPosition )
```

setPosition(): Set the position of the sprite with new value.

Parameters

newPosition	The new Vector2<float> position.

Returns

void

4.18.3.14 setRotation() [1/2]

```
void Sprite::setRotation ( )
```

setRotation(): Set the rotation of the sprite based on the Transform component value.

Parameters

void	

Returns

void

4.18.3.15 setRotation() [2/2]

```
void Sprite::setRotation (
            float newRotation )
```

setRotation(): Set the rotation of the sprite with new value.

Parameters

newRotation	The new float rotation.

Returns

void

4.18.3.16 setScale() [1/2]

```
void Sprite::setScale ( )
```

setScale(): Set the scale of the sprite based on the Transform component value.

Parameters

void	

Returns

void

4.18.3.17 setScale() [2/2]

```
void Sprite::setScale (
            Vector2< float > newScale )
```

setScale(): Set the the scale of the sprite with new value.

Parameters

newScale	The new Vector2<float> scale.

Returns

void

4.18.3.18 setSprite() [1/2]

```
void Sprite::setSprite (
            const sf::Sprite & sprite )
```

setSprite(): Set the SFML Sprite with an existing one for rendering.

Parameters

sprite	SFML Sprite for rendering

Returns

void

4.18.3.19 setSprite() [2/2]

```
void Sprite::setSprite (
            std::map< std::string, std::shared_ptr< sf::Texture >> mapTexture,
            std::string nameTexture,
            bool animate = false,
            std::vector< Rect< int >> newFrames = std::vector<Rect<int>>(),
            int durationOfFrame = 100 )
```

setSprite(): Set the SFML Sprite with a map of string and textures, a texture name and a map of string and vector of floats.

Parameters

mapTexture	Map of string and textures.
nameTexture	Name of the texture.
mapTransform	Map of string and vector of floats.

Returns

void

4.18.3.20 setTexture()

```
void Sprite::setTexture (
            const sf::Texture & existingTexture )
```

setTexture(): Set the texture with an existing one for the sprite.

Parameters

existingTexture	SFML Texture for the sprite

Returns

void

4.18.3.21 setTransformSprite() [1/2]

```
void Sprite::setTransformSprite ( )
```

setTransformSprite(): Set the transform of the sprite based on the Transform component value.

Parameters

void	

Returns

void

4.18.3.22 setTransformSprite() [2/2]

```
void Sprite::setTransformSprite (
            Vector2< float > newPosition,
            float newRotation,
            Vector2< float > newScale )
```

setTransformSprite(): Set the sprite transform with new value and set the value on the Transform component.

Parameters

newPosition	The new Vector2<float> position.
newRotation	The new float rotation.
newScale	The new Vector2<float> scale.

Returns

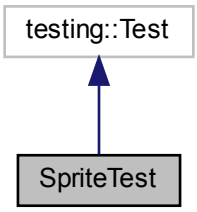
void

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

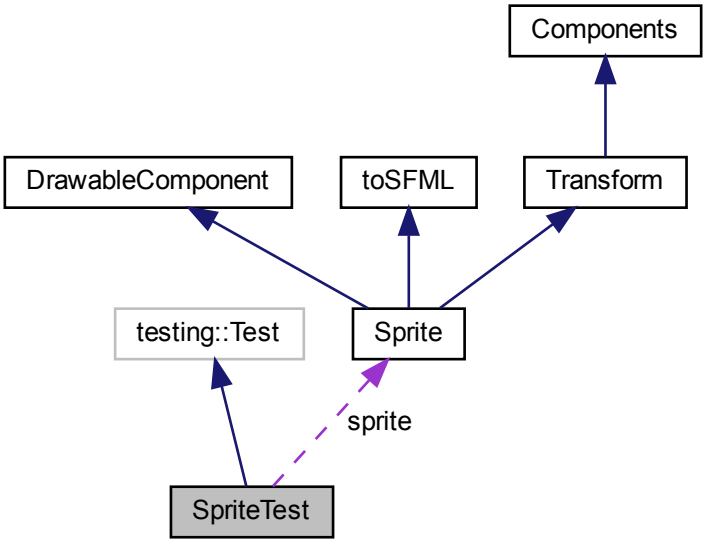
- src/Components/all_components/include/Sprite.h
- src/Components/all_components/Sprite.cpp

4.19 SpriteTest Class Reference

Inheritance diagram for SpriteTest:



Collaboration diagram for SpriteTest:



Protected Attributes

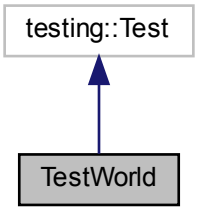
- Sprite **sprite**

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

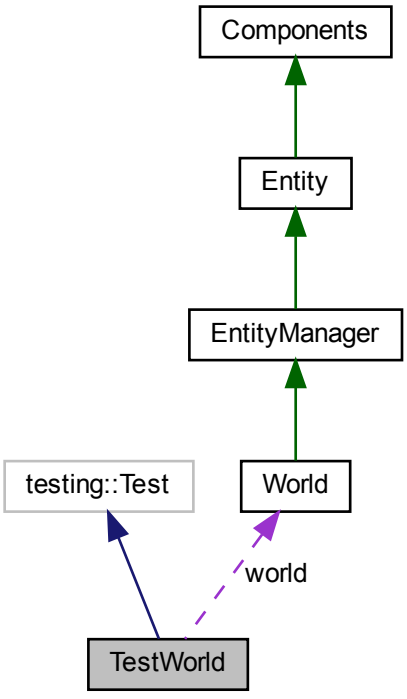
- tests/Components/all_components/TestSprite.cpp

4.20 TestWorld Class Reference

Inheritance diagram for TestWorld:



Collaboration diagram for TestWorld:



Protected Attributes

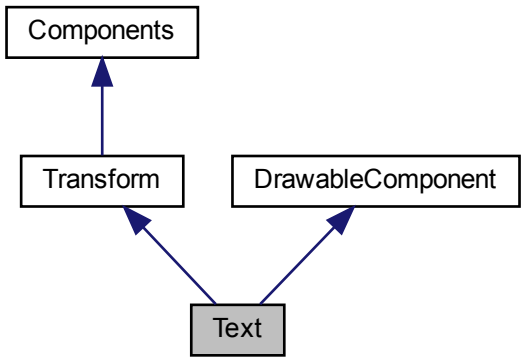
- World **world**

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

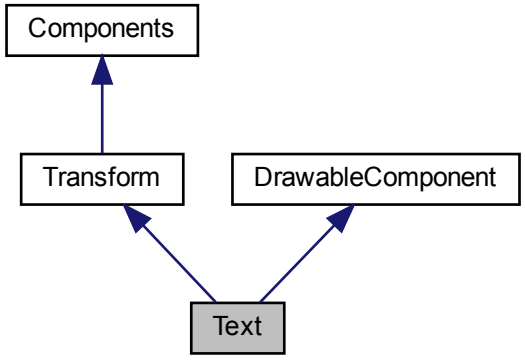
- tests/World/TestWorld.cpp

4.21 Text Class Reference

Inheritance diagram for Text:



Collaboration diagram for Text:



Public Member Functions

- int **getBit** () const
- void draw (sf::RenderWindow &window) const override

  draw(): Draw the component
- void **update** (sf::Time deltaTime) override
- void **setText** (std::map< std::string, std::shared_ptr< sf::Font >> mapFont, std::string nameFont, std::string newStringText, int sizeText, Color color)

- void **setText** (std::map< std::string, std::shared_ptr< sf::Font >> mapFont, std::string nameFont, std::string newStringText, int sizeText, Color newColorFill, Color newColorOutline)
- void **setFont** (std::map< std::string, std::shared_ptr< sf::Font >> mapFont, std::string nameFont)
- void **setString** (std::string nameText)
- void **setSize** (int sizeText)
- void **setOutlineColor** (Color color)
- void **setFillColor** (Color color)
- void **setPosition** (Vector2< float > position)
- void **setRotation** (float rotation)
- void **setScale** (Vector2< float > scale)
- sf::Text **getText** () const
- sf::Font **getFont** () const
- std::string **getStringText** () const
- int **getSize** () const
- Color **getColorFill** () const
- Color **getColorOutline** () const
- Transform * **getTransform** () const
- void **setTransform** (Transform &newTransform)
- void **setDeferredText** (std::function< void()> setter)
- void **applyDeferredText** ()

4.21.1 Member Function Documentation

4.21.1.1 draw()

```
void Text::draw (
            sf::RenderWindow & window ) const  [override], [virtual]
```

draw(): Draw the component

Parameters

window	Window to draw the component on

Returns

void

Implements DrawableComponent.

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

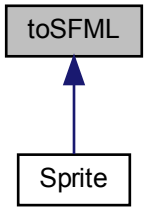
- src/Components/all_components/include/Text.h
- src/Components/all_components/Text.cpp

4.22 toSFML Class Reference

toSFML class: toSFML is a class that convert some class into SFML class.

`#include <toSFML.h>`

Inheritance diagram for toSFML:



Public Member Functions

- toSFML ()=default

  Default toSFML constructor.
- ~toSFML ()=default

  toSFML destructor.
- template<typename T >
  sf::Rect< T > toSFMLRect (Rect< T > rect)

  toSFMLRect(): Convert your Rect<T> into sf::Rect<T>.

4.22.1 Detailed Description

toSFML class: toSFML is a class that convert some class into SFML class.

Convert some class in SFML class.

4.22.2 Constructor & Destructor Documentation

4.22.2.1 toSFML()

`toSFML::toSFML ( )  [default]`

Default toSFML constructor.

Parameters

void	

Returns

void

4.22.2.2 ~toSFML()

```
toSFML::~toSFML ( )  [default]
```

toSFML destructor.

Parameters

void	

Returns

void

4.22.3 Member Function Documentation

4.22.3.1 toSFMLRect()

```
template<typename T >
template sf::Rect< float > toSFML::toSFMLRect (
            Rect< T > rect )
```

toSFMLRect(): Convert your Rect<T> into sf::Rect<T>.

Template Parameters

T	Type of the rect.

Parameters

rect	The rect you want to convert.

Returns

sf:Rect<T>: SFML rect.

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

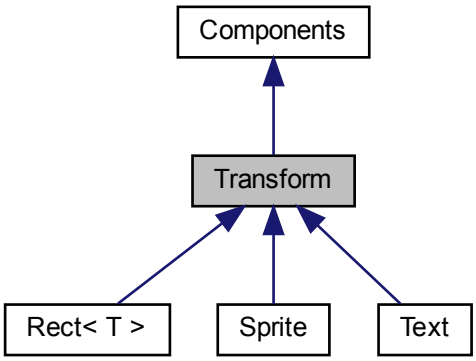
- src/toSFML/include/toSFML.h
- src/toSFML/toSFML.cpp

4.23 Transform Class Reference

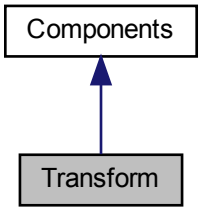
Transform class: Transform is a class that represents the transform of a Component.

```
#include <Transform.h>
```

Inheritance diagram for Transform:



Collaboration diagram for Transform:



Public Member Functions

- Transform ()

  Default Transform constructor.
- bool init () const

  init(): Initialize the component
- ~Transform () override=default

  Transform destructor.
- void **update** (sf::Time deltaTime) override
- int getBit () const

  getBit(): Get the bitmask of the component
- Vector2< float > getPosition () const

  getPositionVector(): Get the position vector of the component;
- float getRotation () const

  getRotationVector(): Get the rotation vector of the component;
- Vector2< float > getScale () const

  getScaleVector(): Get the scale vector of the component;
- TransformStruct getTransformStruct () const

  getTransformStruct(): Get the the transform of the component;
- void setTransform (Vector2< float > newPosition, float newRotation, Vector2< float > newScale)

  setTransformStruct(): Set the transform of the component;
- void setTransformPosition (Vector2< float > newPosition)

  setTransformPosition(): Set the transform position of the component;
- void setTransformRotation (float newRotation)

  setTransformRotation(): Set the transform rotation of the component;
- void setTransformScale (Vector2< float > newScale)

  setTransformScale(): Set the transform scale of the component;

4.23.1 Detailed Description

Transform class: Transform is a class that represents the transform of a Component.

The Transform class manages the position, rotation and scale of a Component.

4.23.2 Constructor & Destructor Documentation

4.23.2.1 Transform()

```
Transform::Transform ( )  [inline]
```

Default Transform constructor.

Parameters

void	

Returns

void

4.23.2.2 ~Transform()

```
Transform::~Transform ( )  [override], [default]
```

Transform destructor.

Parameters

void	

Returns

void

4.23.3 Member Function Documentation

4.23.3.1 getBit()

```
int Transform::getBit ( ) const
```

getBit(): Get the bitmask of the component

Parameters

void	

Returns

int: bitmask of the component

4.23.3.2 getPosition()

```
Vector2<float> Transform::getPosition ( ) const  [inline]
```

getPositionVector(): Get the position vector of the component;

Parameters

void	

Returns

std::vector<float>: position vector of the component

4.23.3.3 getRotation()

```
float Transform::getRotation ( ) const  [inline]
```

getRotationVector(): Get the rotation vector of the component;

Parameters

void	

Returns

std::vector<float>: rotation vector of the component

4.23.3.4 getScale()

```
Vector2<float> Transform::getScale ( ) const  [inline]
```

getScaleVector(): Get the scale vector of the component;

Parameters

void	

Returns

std::vector<float>: scale vector of the component

4.23.3.5 getTransformStruct()

```
TransformStruct Transform::getTransformStruct ( ) const  [inline]
```

getTransformStruct(): Get the the transform of the component;

Parameters

void	

Returns

TransformStruct: struct of the Transform.

4.23.3.6 init()

```
bool Transform::init ( ) const  [inline]
```

init(): Initialize the component

Parameters

void	

Returns

bool: true if the component is initialized, false otherwise

4.23.3.7 setTransform()

```
void Transform::setTransform (
            Vector2< float > newPosition,
            float newRotation,
            Vector2< float > newScale )
```

setTransformStruct(): Set the transform of the component;

Parameters

newPosition	: the new Vector2<float> position.
newRotation	: the new float rotation.
newScale	: the new Vector2<float> scale.

Returns

void

4.23.3.8 setTransformPosition()

```
void Transform::setTransformPosition (
            Vector2< float > newPosition )
```

setTransformPosition(): Set the transform position of the component;

Parameters

newPosition	: the new Vector2<float> position.

Returns

void

4.23.3.9 setTransformRotation()

```
void Transform::setTransformRotation (
            float newRotation )
```

setTransformRotation(): Set the transform rotation of the component;

Parameters

newRotation	: the new float rotation.

Returns

void

4.23.3.10 setTransformScale()

```
void Transform::setTransformScale (
            Vector2< float > newScale )
```

setTransformScale(): Set the transform scale of the component;

Parameters

newScale	: the new Vector2<float> scale.

Returns

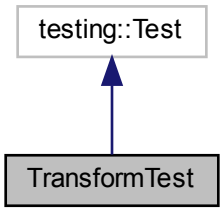
void

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

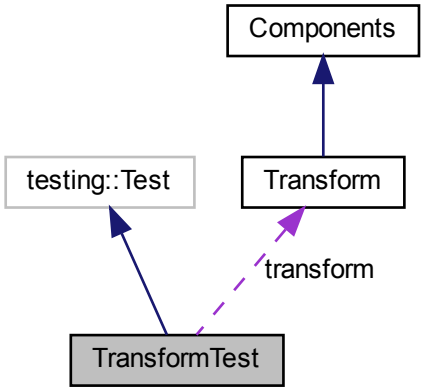
- src/Components/all_components/include/Transform.h
- src/Components/all_components/Transform.cpp

4.24 TransformTest Class Reference

Inheritance diagram for TransformTest:



Collaboration diagram for TransformTest:



Protected Attributes

- Transform **transform**

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

- tests/Components/all_components/TestTransform.cpp

4.25 Vector2< T > Class Template Reference

Vector class: Vector is a class that represents a vector in 2 dimensions.

`#include <Vector2.h>`

Public Member Functions

- Vector2 (T x, T y)
  < *Variable for using the value of the Vector2Struct.*
- ~Vector2 ()=default
  Vector2 destructor.
- Vector2Struct getVector2Struct () const
  getVector2Struct(): Get the using Vector2Struct.
- T getX () const
  getX(): Get x of Vector2Struct.
- T getY () const
  getY(): Get y of Vector2Struct.

4.25.1 Detailed Description

template<typename T>
class Vector2< T >

Vector class: Vector is a class that represents a vector in 2 dimensions.

This create a vector with 2 value.

4.25.2 Constructor & Destructor Documentation

4.25.2.1 Vector2()

```
template<typename T >
Vector2< T >::Vector2 (
            T x,
            T y )  [inline]
```

< Variable for using the value of the Vector2Struct.

Vector2 constructor with parameters.

Template Parameters

T	Type of the vector.

Parameters

x	Position x.
y	Position y.

Returns

void

4.25.2.2 ~Vector2()

```
template<typename T >
Vector2< T >::~Vector2 ( )  [default]
```

Vector2 destructor.

Template Parameters

T	Type of the vector.

Parameters

void	

Returns

void

4.25.3 Member Function Documentation

4.25.3.1 getVector2Struct()

```
template<typename T >
Vector2Struct Vector2< T >::getVector2Struct ( ) const  [inline]
```

getVector2Struct(): Get the using Vector2Struct.

Parameters

void	

Returns

Vector2Struct

4.25.3.2 getX()

```
template<typename T >
T Vector2< T >::getX ( ) const  [inline]
```

getX(): Get x of Vector2Struct.

Template Parameters

4.25.3.3 getY()

```
template<typename T >
T Vector2< T >::getY ( ) const  [inline]
```

getY(): Get y of Vector2Struct.

Template Parameters

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

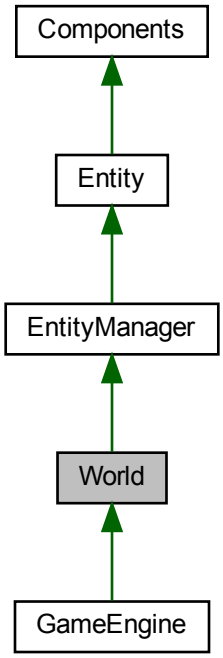
- src/Other/include/Vector2.h

4.26 World Class Reference

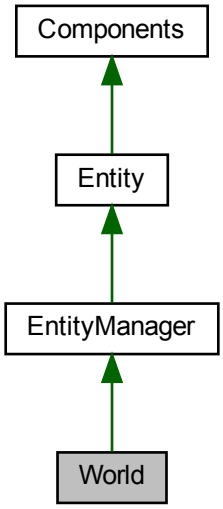
World class: World is a class that represents the world of the game.

```
#include <world.h>
```

Inheritance diagram for World:



Collaboration diagram for World:



Public Member Functions

- World ()=default

  Default World constructor.
- ∼World () override=default

  World destructor.
- void createEntities (std::map< std::string, std::pair< std::unique_ptr< EntityManager >, std::vector< std::string >>> &mapEntityManager)

  createEntities(): Create the entities.
- EntityManager & addEntityManager (std::string NameEntityManager)

  addEntityManager(): Add an entity manager to the map.
- EntityManager & getEntityManager (std::string NameEntityManager)

  getEntityManager(): Get the entity manager.
- void setNameWorld (std::string newName)

  setNameWorld(): Set the name of the world.
- std::string getNameWorld () const

  getNameWorld(): Get the name of the world.
- std::map< std::string, EntityManager * > getEntityManagerMap () const

  getEntityManagerMap(): Get the map of the entity manager.
- bool initWorld ()

  init(): Initialize the World.

Additional Inherited Members

4.26.1 Detailed Description

World class: World is a class that represents the world of the game.

The World class manages the world of the game.

4.26.2 Constructor & Destructor Documentation

4.26.2.1 World()

```
World::World ( )  [default]
```

Default World constructor.

Parameters

void	

Returns

void

4.26.2.2 ~World()

```
World::~World ( )  [override], [default]
```

World destructor.

Parameters

void	

Returns

void

4.26.3 Member Function Documentation

4.26.3.1 addEntityManager()

```
EntityManager & World::addEntityManager (
            std::string NameEntityManager )
```

addEntityManager(): Add an entity manager to the map.

Parameters

NameEntityManager	Name of the entity manager.

Returns

EntityManager&: The entity manager.

4.26.3.2 createEntities()

```
void World::createEntities (
            std::map< std::string, std::pair< std::unique_ptr< EntityManager >, std::vector<
std::string >>> & mapEntityManager )
```

createEntities(): Create the entities.

Parameters

mapEntityManager	Map of the entities manager's unique pointers.
keyEntityManager	Key of the entities manager.

Returns

void

4.26.3.3 getEntityManager()

```
EntityManager & World::getEntityManager (
            std::string NameEntityManager )
```

getEntityManager(): Get the entity manager.

Parameters

NameEntityManager	Name of the entity manager.

Returns

EntityManager&: The entity manager.

4.26.3.4 getEntityManagerMap()

```
std::map<std::string, EntityManager*> World::getEntityManagerMap ( ) const  [inline]
```

getEntityManagerMap(): Get the map of the entity manager.

Parameters

void	

Returns

std::map<std::string, EntityManager*>: The map of the entity manager.

4.26.3.5 getNameWorld()

```
std::string World::getNameWorld ( ) const  [inline]
```

getNameWorld(): Get the name of the world.

Parameters

void	

Returns

std::string: The name of the world.

4.26.3.6 initWorld()

```
bool World::initWorld ( )  [inline]
```

init(): Initialize the World.

Parameters

void	

Returns

bool: True if the world is initialized, false otherwise.

4.26.3.7 setNameWorld()

```
void World::setNameWorld (
            std::string newName )
```

setNameWorld(): Set the name of the world.

Parameters

newName	New name of the world.

Returns

void

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

- src/World/include/world.h
- src/World/world.cpp

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