

R-Type - Engine

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Chapter 1

Engine

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

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

Archetypes	7
Audio	7
Components	7
Entity	8
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Chapter 3

Class Index

3.1 Class List

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

Archetypes	7
Audio	7
Components	7
Entity	
Entity class: Entity is a class that represents an entity in the game	8
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Transform class: Transform is a class that represents the transform of a Component	12
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Chapter 4

Class Documentation

4.1 Archetypes Class Reference

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

- Archetype/Archetypes.h

4.2 Audio Class Reference

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

- Components/all_components/Audio.h

4.3 Components Class Reference

Inheritance diagram for Components:

Public Member Functions

- virtual bool **init** ()
- virtual void **draw** ()
- virtual void **update** ()
- template<typename T >
ComponentTypeID **GetComponentTypeID** () noexcept

Protected Types

- using **ComponentTypeID** = std::size_t
- using **ComponentBitset** = std::bitset< 3 >
- using **ComponentArray** = std::array< [Components](#) *, 3 >

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

- Components/Components.h
- Components/Components.cpp

4.4 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.
- std::string [getName](#) () const
getName(): Get the name of the entity
- void [setName](#) (std::string newName)
setName(): Set the name of the entity
- 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

4.4.1 Detailed Description

[Entity](#) class: [Entity](#) is a class that represents an entity in the game.

The [Entity](#) class manages components associated with the entity.

4.4.2 Constructor & Destructor Documentation

4.4.2.1 [Entity](#)() [1/2]

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

Default [Entity](#) constructor.

Parameters

<i>void</i>	
-------------	--

Returns

void

4.4.2.2 Entity() [2/2]

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

[Entity](#) constructor.

Parameters

<i>nameEntity</i>	name of the entity
<i>newArchetype</i>	archetype of the entity (optional, default = new archetype)

Returns

void

4.4.2.3 ~Entity()

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

[Entity](#) destructor.

Parameters

<i>void</i>	
-------------	--

Returns

void

4.4.3 Member Function Documentation

4.4.3.1 addComponent()

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

[addComponent\(\)](#): Add a component to the entity

Template Parameters

<i>T</i>	Type of the component
<i>TArgs</i>	Variadic template for component constructor arguments.

Parameters

<i>args</i>	arguments of the component
-------------	----------------------------

Returns

T&: reference of the component

4.4.3.2 GetComponent()

```
template<typename T >
T & Entity::GetComponent
```

[GetComponent\(\)](#): Get a component from the entity

Template Parameters

<i>T</i>	Type of the component
----------	-----------------------

Parameters

<i>void</i>	
-------------	--

Returns

T&: reference of the component

4.4.3.3 getName()

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

getName(): Get the name of the entity

Parameters

<i>void</i>	
-------------	--

Returns

std::string: name of the entity

4.4.3.4 setName()

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

[setName\(\)](#): Set the name of the entity

Parameters

<i>newName</i>	new name of the entity
----------------	------------------------

Returns

void

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

- Entity/entity.h
- Entity/entity.cpp

4.5 EntityTest Class Reference

Inheritance diagram for EntityTest:

Collaboration diagram for EntityTest:

Protected Attributes

- [Entity](#) entity

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

- tests/Entity/TestEntity.cpp

4.6 Rendering Class Reference

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

- Components/all_components/Rendering.h

4.7 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
Default [Transform](#) constructor.
- [Transform](#) (const std::map< std::string, std::vector< float >> &mapTransform)
[Transform](#) constructor.
- [~Transform](#) () override=default
[Transform](#) destructor.
- int [getBit](#) () const
[getBit\(\)](#): Get the bitmask of the component
- std::vector< float > [getPositionVector](#) () const
[getPositionVector\(\)](#): Get the position vector of the component;
- std::vector< float > [getRotationVector](#) () const
[getRotationVector\(\)](#): Get the rotation vector of the component;
- std::vector< float > [getScaleVector](#) () const
[getScaleVector\(\)](#): Get the scale vector of the component;
- void [setTransform](#) (const std::map< std::string, std::vector< float >> &mapTransform)
[setTransform\(\)](#): Set the transformation properties of the component

Additional Inherited Members

4.7.1 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.

4.7.2 Constructor & Destructor Documentation

4.7.2.1 Transform() [1/2]

```
Transform::Transform ( ) [default]
```

Default [Transform](#) constructor.

Parameters

<i>void</i>	
-------------	--

Returns

void

4.7.2.2 Transform() [2/2]

```
Transform::Transform (
    const std::map< std::string, std::vector< float >> & mapTransform ) [inline],
[explicit]
```

[Transform](#) constructor.

Parameters

<i>mapTransform</i>	Map containing transformation properties (std::string, std::vector<float>).
---------------------	---

Returns

void

4.7.2.3 ~Transform()

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

[Transform](#) destructor.

Parameters

<i>void</i>	
-------------	--

Returns

void

4.7.3 Member Function Documentation

4.7.3.1 getBit()

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

[getBit\(\)](#): Get the bitmask of the component

Parameters

<i>void</i>	
-------------	--

Returns

int: bitmask of the component

4.7.3.2 getPositionVector()

```
std::vector< float > Transform::getPositionVector ( ) const
```

[getPositionVector\(\)](#): Get the position vector of the component;

Parameters

<i>void</i>	
-------------	--

Returns

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

4.7.3.3 getRotationVector()

```
std::vector< float > Transform::getRotationVector ( ) const
```

[getRotationVector\(\)](#): Get the rotation vector of the component;

Parameters

<i>void</i>	
-------------	--

Returns

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

4.7.3.4 getScaleVector()

```
std::vector< float > Transform::getScaleVector ( ) const
```

[getScaleVector\(\)](#): Get the scale vector of the component;

Parameters

<i>void</i>	
-------------	--

Returns

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

4.7.3.5 setTransform()

```
void Transform::setTransform (
    const std::map< std::string, std::vector< float >> & mapTransform )
```

[setTransform\(\)](#): Set the transformation properties of the component

Parameters

<i>mapTransform</i>	Map containing transformation properties (std::string, std::vector<float>).
---------------------	---

Returns

void

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

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

4.8 TransformTest Class Reference

Inheritance diagram for TransformTest:

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- TransformTest, [15](#)