RTYPE

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

Chapter 2

Class Index

2.1 Class List

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

Chapter 3

Class Documentation

3.1 rtype::AssetManager Class Reference

AssetManager class which allows you to load the assets only once.

`#include <AssetManager.hpp>`

Public Member Functions

- sf::Texture & getTexture (const std::string &textureName)

  Get the Texture object.
- sf::SoundBuffer & getSoundBuffer (const std::string &soundName)

  Get the Sound Buffer object.
- sf::Sound & getSound (const std::string &soundName)

  Get the Sound object.
- void playSound (const std::string &soundName)

  Play the sound.

Static Public Member Functions

- static AssetManager & getInstance ()

  Get the Instance object.

3.1.1 Detailed Description

AssetManager class which allows you to load the assets only once.

3.1.2 Member Function Documentation

3.1.2.1 getInstance()

```
static AssetManager& rtype::AssetManager::getInstance ( )  [inline], [static]
```

Get the Instance object.

Returns

AssetManager&

3.1.2.2 getSound()

```
sf::Sound& rtype::AssetManager::getSound (
            const std::string & soundName )  [inline]
```

Get the Sound object.

Parameters

soundName	

Returns

sf::Sound&

3.1.2.3 getSoundBuffer()

```
sf::SoundBuffer& rtype::AssetManager::getSoundBuffer (
            const std::string & soundName )  [inline]
```

Get the Sound Buffer object.

Parameters

soundName	

Returns

sf::SoundBuffer&

3.1.2.4 getTexture()

```
sf::Texture& rtype::AssetManager::getTexture (
             const std::string & textureName )  [inline]
```

Get the Texture object.

Parameters

textureName	

Returns

sf::Texture&

3.1.2.5 playSound()

```
void rtype::AssetManager::playSound (
             const std::string & soundName )  [inline]
```

Play the sound.

Parameters

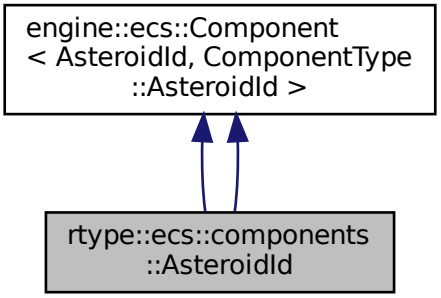
soundName	

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

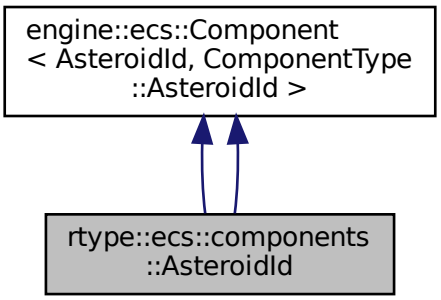
- rtype-client/include/AssetManager.hpp

3.2 rtype::ecs::components::AsteroidId Struct Reference

Inheritance diagram for rtype::ecs::components::AsteroidId:



Collaboration diagram for rtype::ecs::components::AsteroidId:



Public Member Functions

- **AsteroidId** (int asteroidId)
- **AsteroidId** (int asteroidId)

Public Attributes

- int **id**

Additional Inherited Members

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

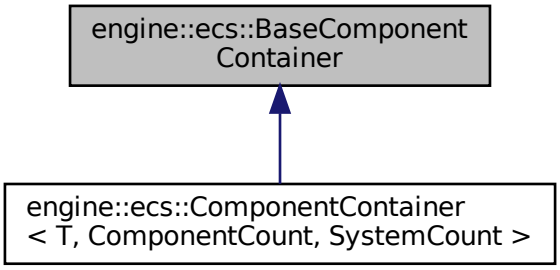
- rtype-client/include/Components.hpp

3.3 engine::ecs::BaseComponentContainer Class Reference

BaseComponentContainer Interface used to store components.

`#include <ComponentContainer.hpp>`

Inheritance diagram for engine::ecs::BaseComponentContainer:



Public Member Functions

- virtual void reserve (std::size_t size)=0
  Reserve the size of the container.
- virtual bool tryRemove (Entity entity)=0
  Try to remove an entity from the container.

3.3.1 Detailed Description

BaseComponentContainer Interface used to store components.

3.3.2 Member Function Documentation

3.3.2.1 reserve()

```
virtual void engine::ecs::BaseComponentContainer::reserve (
            std::size_t size )  [pure virtual]
```

Reserve the size of the container.

Parameters

size	

Implemented in engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >.

3.3.2.2 tryRemove()

```
virtual bool engine::ecs::BaseComponentContainer::tryRemove (
            Entity entity ) [pure virtual]
```

Try to remove an entity from the container.

Parameters

entity	

Returns

true

false

Implemented in engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >.

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

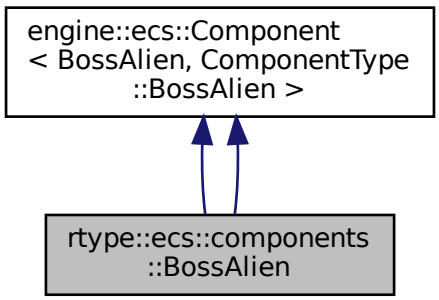
- engine/include/ecs/ComponentContainer.hpp

3.4 rtype::ecs::components::BossAlien Struct Reference

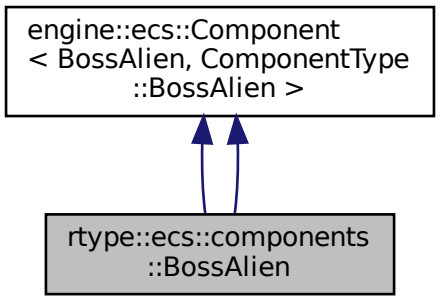
BossAlien struct which contains the boss alien of the entity.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::BossAlien:



Collaboration diagram for rtype::ecs::components::BossAlien:



Additional Inherited Members

3.4.1 Detailed Description

BossAlien struct which contains the boss alien of the entity.

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

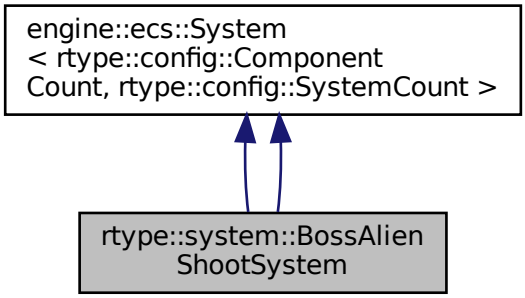
- rtype-client/include/Components.hpp

3.5 rtype::system::BossAlienShootSystem Class Reference

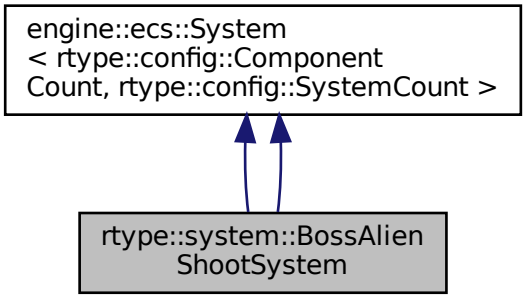
EnemyShoot system class used to let the enemy shoot.

`#include <BossAlienShootSystem.hpp>`

Inheritance diagram for rtype::system::BossAlienShootSystem:



Collaboration diagram for rtype::system::BossAlienShootSystem:



Public Member Functions

- BossAlienShootSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩ SystemCount > &entityManager)

  Construct a new BossAlien Shoot System object.
- void update (const float dt)

  Update the BossAlien Shoot system class, to allow enemies to shoot.
- BossAlienShootSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩ SystemCount > &entityManager)

  Construct a new BossAlien Shoot System object.
- void update (const float dt)

  Update the BossAlien Shoot system class, to allow enemies to shoot.

Additional Inherited Members

3.5.1 Detailed Description

EnemyShoot system class used to let the enemy shoot.

3.5.2 Constructor & Destructor Documentation

3.5.2.1 BossAlienShootSystem() [1/2]

```
rtype::system::BossAlienShootSystem::BossAlienShootSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new BossAlien Shoot System object.

Parameters

entityManager	

3.5.2.2 BossAlienShootSystem() [2/2]

```
rtype::system::BossAlienShootSystem::BossAlienShootSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new BossAlien Shoot System object.

Parameters

entityManager	

3.5.3 Member Function Documentation

3.5.3.1 update() [1/2]

```
void rtype::system::BossAlienShootSystem::update (
            const float dt )  [inline], [virtual]
```

Update the BossAlien Shoot system class, to allow enemies to shoot.

Parameters

dt	The Delta Time for the shoot of enemies

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

3.5.3.2 update() [2/2]

```
void rtype::system::BossAlienShootSystem::update (
            const float dt )  [inline], [virtual]
```

Update the BossAlien Shoot system class, to allow enemies to shoot.

Parameters

dt	The Delta Time for the shoot of enemies

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

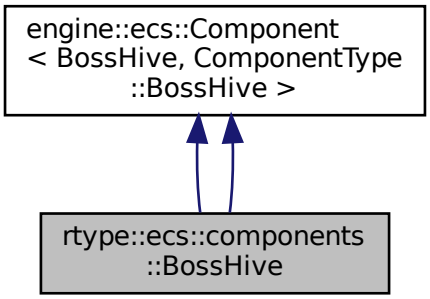
- rtype-client/include/systems/BossAlienShootSystem.hpp

3.6 rtype::ecs::components::BossHive Struct Reference

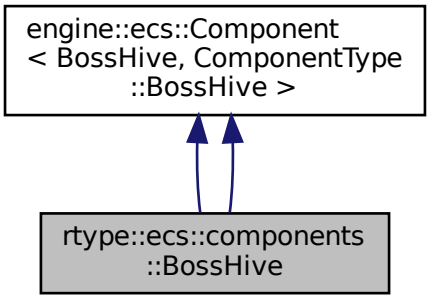
BossHive struct which contains the boss hive of the entity.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::BossHive:



Collaboration diagram for rtype::ecs::components::BossHive:



Additional Inherited Members

3.6.1 Detailed Description

BossHive struct which contains the boss hive of the entity.

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

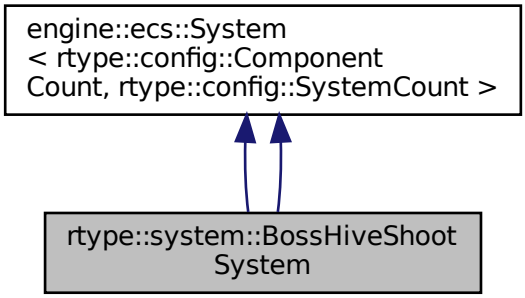
- rtype-client/include/Components.hpp

3.7 rtype::system::BossHiveShootSystem Class Reference

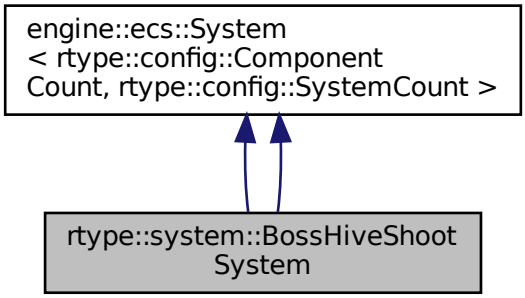
EnemyShoot system class used to let the enemy shoot.

`#include <BossHiveShootSystem.hpp>`

Inheritance diagram for rtype::system::BossHiveShootSystem:



Collaboration diagram for rtype::system::BossHiveShootSystem:



Public Member Functions

- BossHiveShootSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩ SystemCount > &entityManager)

  Construct a new BossHive Shoot System object.
- void update (const float dt)

  Update the BossHive Shoot system class, to allow enemies to shoot.
- BossHiveShootSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩ SystemCount > &entityManager)

  Construct a new BossHive Shoot System object.
- void update (const float dt)

  Update the BossHive Shoot system class, to allow enemies to shoot.

Additional Inherited Members

3.7.1 Detailed Description

EnemyShoot system class used to let the enemy shoot.

3.7.2 Constructor & Destructor Documentation

3.7.2.1 BossHiveShootSystem() [1/2]

```
rtype::system::BossHiveShootSystem::BossHiveShootSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new BossHive Shoot System object.

Parameters

entityManager	

3.7.2.2 BossHiveShootSystem() [2/2]

```
rtype::system::BossHiveShootSystem::BossHiveShootSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new BossHive Shoot System object.

Parameters

entityManager	

3.7.3 Member Function Documentation

3.7.3.1 update() [1/2]

```
void rtype::system::BossHiveShootSystem::update (
            const float dt )  [inline], [virtual]
```

Update the BossHive Shoot system class, to allow enemies to shoot.

Parameters

dt	The Delta Time for the shoot of enemies

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

3.7.3.2 update() [2/2]

```
void rtype::system::BossHiveShootSystem::update (
            const float dt )  [inline], [virtual]
```

Update the BossHive Shoot system class, to allow enemies to shoot.

Parameters

dt	The Delta Time for the shoot of enemies

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

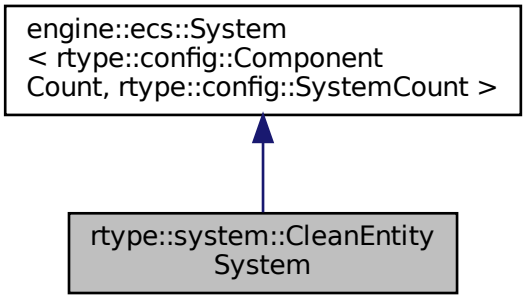
- rtype-client/include/systems/BossHiveShootSystem.hpp

3.8 rtype::system::CleanEntitySystem Class Reference

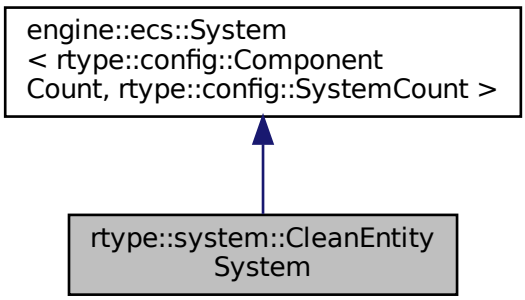
Clean entity system class to remove entities.

```
#include <CleanEntitySystem.hpp>
```

Inheritance diagram for rtype::system::CleanEntitySystem:



Collaboration diagram for rtype::system::CleanEntitySystem:



Public Member Functions

- CleanEntitySystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::System↩ Count > &entityManager)

  Construct a new Clean Entity System object.
- void update (const float dt)

  Update the Clean Entity System object.

Additional Inherited Members

3.8.1 Detailed Description

Clean entity system class to remove entities.

3.8.2 Constructor & Destructor Documentation

3.8.2.1 CleanEntitySystem()

```
rtype::system::CleanEntitySystem::CleanEntitySystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Clean Entity System object.

Parameters

entityManager	

3.8.3 Member Function Documentation

3.8.3.1 update()

```
void rtype::system::CleanEntitySystem::update (
            const float dt )  [inline], [virtual]
```

Update the Clean Entity System object.

Parameters

dt	

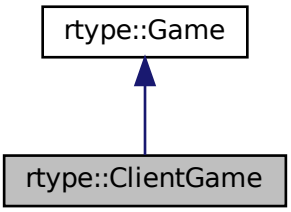
Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

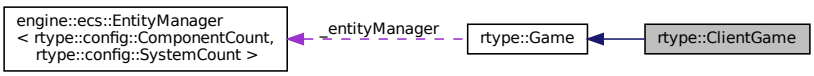
- game/include/systems/CleanEntitySystem.hpp

3.9 rtype::ClientGame Class Reference

Inheritance diagram for rtype::ClientGame:



Collaboration diagram for rtype::ClientGame:



Public Member Functions

- ClientGame ()

  Construct a new ClientGame object.
- ~ClientGame ()
- float getFps () const

  Get the Fps of the game.
- void handleEvent (NetworkEvent package)

  Handle the event received from the server.
- void gameEvent () override

  ClientGame event.
- void gameUpdate () override

  ClientGame update.
- void gameUi ()

  ClientGame ui for the debug menu.
- void gameDraw ()

  ClientGame draw.
- void gameLoop () override

  Game loop to repeat at each frame.
- bool isOver () override

  Says whether the game is over or not.
- std::string getIp ()

  Gets the IP address of the server enter at the beginning.
- int getPlayerID ()

  Gets the id of the player.

Additional Inherited Members

3.9.1 Constructor & Destructor Documentation

3.9.1.1 ClientGame()

```
rtype::ClientGame::ClientGame ( )
```

Construct a new ClientGame object.

Parameters

io_context	

3.9.1.2 ~ClientGame()

```
rtype::ClientGame::~ClientGame ( )
```

Destroy the game and add a dying event to the queue

3.9.2 Member Function Documentation

3.9.2.1 getFps()

```
float rtype::ClientGame::getFps ( ) const  [virtual]
```

Get the Fps of the game.

Returns

float

Implements rtype::Game.

3.9.2.2 getIp()

```
std::string rtype::ClientGame::getIp ( )
```

Gets the IP address of the server enter at the beginning.

Returns

IP address of the running server

3.9.2.3 getPlayerID()

```
int rtype::ClientGame::getPlayerID ( )
```

Gets the id of the player.

Returns

An int containing the player ID

3.9.2.4 isOver()

```
bool rtype::ClientGame::isOver ( )  [override], [virtual]
```

Says whether the game is over or not.

Returns

The state of the game

Implements rtype::Game.

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

- rtype-client/include/ClientGame.hpp

3.10 client::clientInstance Class Reference

Instance of the client containing a game.

```
#include <clientInstance.hpp>
```

Public Member Functions

- clientInstance ()
- void lifeCycle ()

  Handle the life cycle of the client.

3.10.1 Detailed Description

Instance of the client containing a game.

3.10.2 Constructor & Destructor Documentation

3.10.2.1 clientInstance()

```
client::clientInstance::clientInstance ( )
```

Create a window which is waiting for the user to enter the server ip adress

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

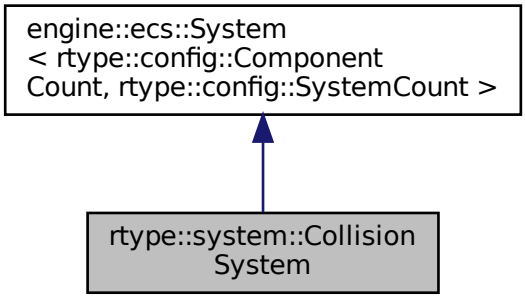
- rtype-client/include/clientInstance.hpp

3.11 rtype::system::CollisionSystem Class Reference

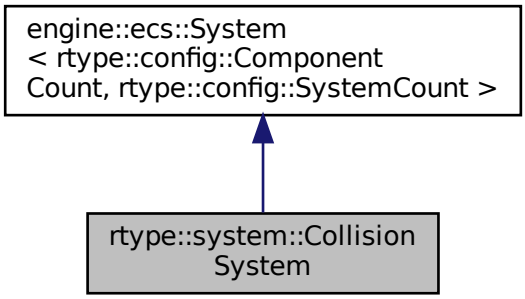
Collision system class to check collision between entities.

```
#include <CollisionSystem.hpp>
```

Inheritance diagram for rtype::system::CollisionSystem:



Collaboration diagram for rtype::system::CollisionSystem:



Public Member Functions

- CollisionSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Collision System object.
- void update (const float dt)

  Update the Collision System object.

Additional Inherited Members

3.11.1 Detailed Description

Collision system class to check collision between entities.

3.11.2 Constructor & Destructor Documentation

3.11.2.1 CollisionSystem()

```
rtype::system::CollisionSystem::CollisionSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Collision System object.

Parameters

entityManager	

3.11.3 Member Function Documentation

3.11.3.1 update()

```
void rtype::system::CollisionSystem::update (
            const float dt )  [inline], [virtual]
```

Update the Collision System object.

Parameters

dt	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

- game/include/systems/CollisionSystem.hpp

3.12 engine::ecs::Component< T, Type > Class Template Reference

Component class which is the base class for all components.

```
#include <Component.hpp>
```

Static Public Attributes

- static constexpr auto **type** = static_cast<std::size_t>(Type)

3.12.1 Detailed Description

template<typename T, auto Type>
class engine::ecs::Component< T, Type >

Component class which is the base class for all components.

Template Parameters

T	
Type	

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

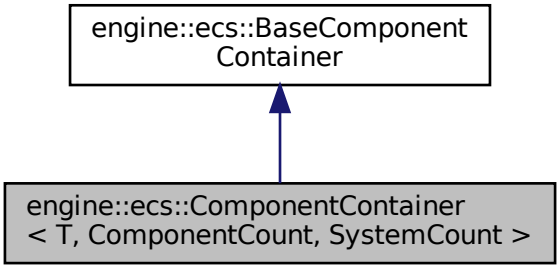
- engine/include/ecs/Component.hpp

3.13 engine::ecs::ComponentContainer< T, ComponentCount, SystemCount > Class Template Reference

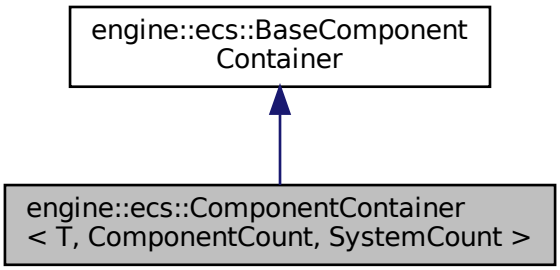
ComponentContainer class used to store components.

`#include <ComponentContainer.hpp>`

Inheritance diagram for engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >:



Collaboration diagram for engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >:



Public Member Functions

- **ComponentContainer** (std::vector< Index > &entityToComponent, std::vector< std::bitset< Component↩ Count >> &entityToBitset)
- virtual void reserve (std::size_t size) override

  Reserve the size of the container.
- T & get (Entity entity)

  Get a component of an entity.
- const T & get (Entity entity) const

Get a component of an entity with const.

- template<typename... Args>
  void add (Entity entity, Args &&...args)

  Add a component to an entity.
- void remove (Entity entity)

  Remove a component from an entity.
- virtual bool tryRemove (Entity entity) override

  Try to remove a component from an entity.
- Entity getOwner (const T &component) const

  Get the Owner object of a component.

3.13.1 Detailed Description

template<typename T, std::size_t ComponentCount, std::size_t SystemCount>
class engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >

ComponentContainer class used to store components.

Template Parameters

T	
ComponentCount	
SystemCount	

3.13.2 Member Function Documentation

3.13.2.1 add()

```
template<typename T , std::size_t ComponentCount, std::size_t SystemCount>
template<typename...  Args>
void engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >::add (
            Entity entity,
            Args &&...  args )  [inline]
```

Add a component to an entity.

Template Parameters

Args	

Parameters

entity	
args	

3.13.2.2 get() [1/2]

```
template<typename T , std::size_t ComponentCount, std::size_t SystemCount>
T& engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >::get (
            Entity entity )  [inline]
```

Get a component of an entity.

Parameters

entity	

Returns

T&

3.13.2.3 get() [2/2]

```
template<typename T , std::size_t ComponentCount, std::size_t SystemCount>
const T& engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >::get (
            Entity entity ) const  [inline]
```

Get a component of an entity with const.

Parameters

entity	

Returns

const T&

3.13.2.4 getOwner()

```
template<typename T , std::size_t ComponentCount, std::size_t SystemCount>
Entity engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >::getOwner (
            const T & component ) const  [inline]
```

Get the Owner object of a component.

Parameters

component	

Returns

Entity

3.13.2.5 remove()

```
template<typename T , std::size_t ComponentCount, std::size_t SystemCount>
void engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >::remove (
            Entity entity )  [inline]
```

Remove a component from an entity.

Parameters

entity	

3.13.2.6 reserve()

```
template<typename T , std::size_t ComponentCount, std::size_t SystemCount>
virtual void engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >::reserve (
            std::size_t size )  [inline], [override], [virtual]
```

Reserve the size of the container.

Parameters

size	

Implements engine::ecs::BaseComponentContainer.

3.13.2.7 tryRemove()

```
template<typename T , std::size_t ComponentCount, std::size_t SystemCount>
virtual bool engine::ecs::ComponentContainer< T, ComponentCount, SystemCount >::tryRemove (
            Entity entity )  [inline], [override], [virtual]
```

Try to remove a component from an entity.

Parameters

entity	

Returns

true if the component was removed.

false if the component was not removed.

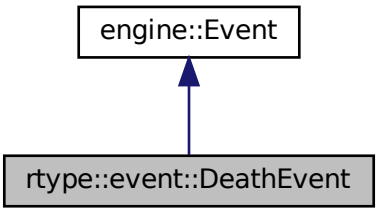
Implements engine::ecs::BaseComponentContainer.

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

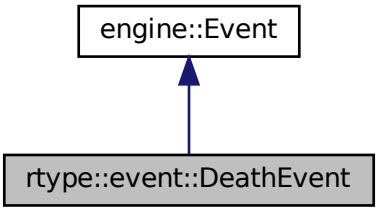
- engine/include/ecs/ComponentContainer.hpp

3.14 rtype::event::DeathEvent Class Reference

Inheritance diagram for rtype::event::DeathEvent:



Collaboration diagram for rtype::event::DeathEvent:



Public Attributes

- int **entity**
- bool **isDead**

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

- game/include/events/DeathEvent.hpp

3.15 rtype::debug::Debugger Class Reference

Public Member Functions

- bool **getShowHitbox** () const
- bool **hasComponents** (rtype::Game &game, int id)
- void **calculateNumberOfActiveEntities** (rtype::Game &game)
- void **update** (rtype::Game &game)
- void **draw** (rtype::Game &game)
- void **drawEntityWindow** (rtype::Game &game)

Static Public Member Functions

- static Debugger & **getInstance** ()

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

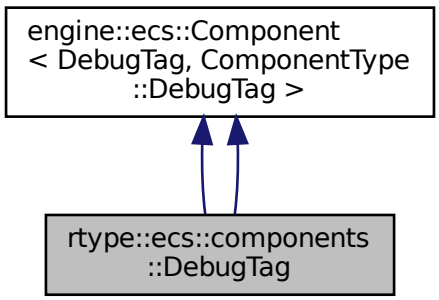
- rtype-client/include/debug/Debugger.hpp

3.16 rtype::ecs::components::DebugTag Struct Reference

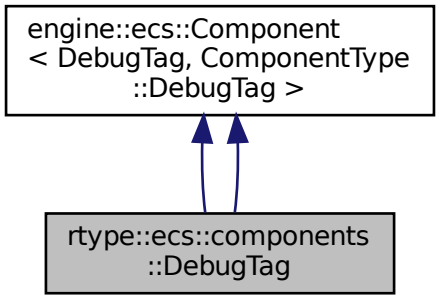
DebugTag struct which contains the debug tag of the entity.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::DebugTag:



Collaboration diagram for rtype::ecs::components::DebugTag:



Public Member Functions

- **DebugTag** (const std::string &Tag)
- **DebugTag** (const std::string &Tag)

Public Attributes

- std::string **tag**

Additional Inherited Members

3.16.1 Detailed Description

DebugTag struct which contains the debug tag of the entity.

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

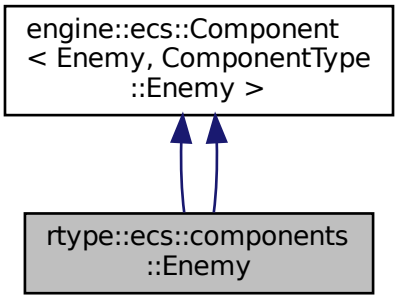
- rtype-client/include/Components.hpp

3.17 rtype::ecs::components::Enemy Struct Reference

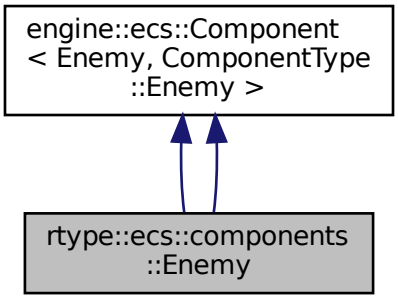
Enemy struct which contains the enemy of the entity.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::Enemy:



Collaboration diagram for rtype::ecs::components::Enemy:



Additional Inherited Members

3.17.1 Detailed Description

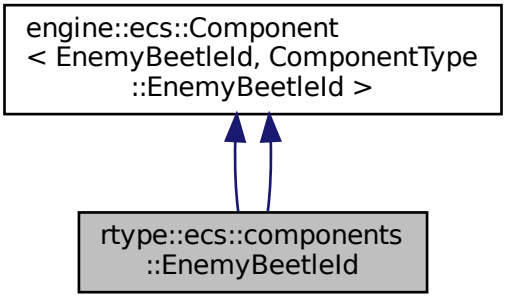
Enemy struct which contains the enemy of the entity.

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

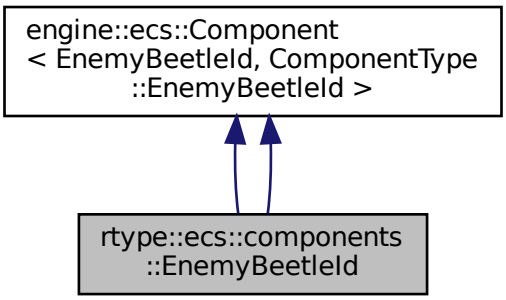
- rtype-client/include/Components.hpp

3.18 rtype::ecs::components::EnemyBeetleId Struct Reference

Inheritance diagram for rtype::ecs::components::EnemyBeetleId:



Collaboration diagram for rtype::ecs::components::EnemyBeetleId:



Public Member Functions

- **EnemyBeetleId** (int enemyBeetle)
- **EnemyBeetleId** (int enemyBeetle)

Public Attributes

- int **id**

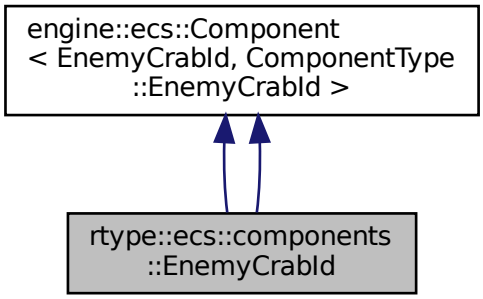
Additional Inherited Members

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

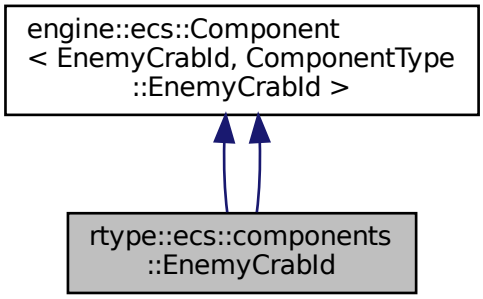
- rtype-client/include/Components.hpp

3.19 rtype::ecs::components::EnemyCrabId Struct Reference

Inheritance diagram for rtype::ecs::components::EnemyCrabId:



Collaboration diagram for rtype::ecs::components::EnemyCrabId:



Public Member Functions

- **EnemyCrabId** (int enemyCrab)
- **EnemyCrabId** (int enemyCrab)

Public Attributes

- int **id**

Additional Inherited Members

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

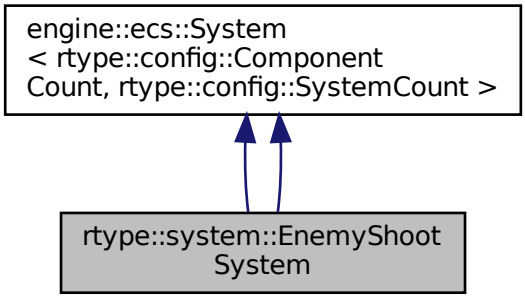
- rtype-client/include/Components.hpp

3.20 rtype::system::EnemyShootSystem Class Reference

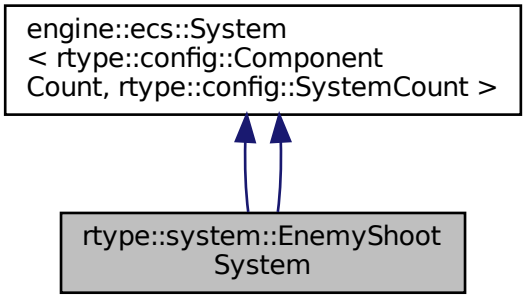
EnemyShoot system class used to let the enemy shoot.

`#include <EnemyShootSystem.hpp>`

Inheritance diagram for rtype::system::EnemyShootSystem:



Collaboration diagram for rtype::system::EnemyShootSystem:



Public Member Functions

- EnemyShootSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::System↩ Count > &entityManager)

  Construct a new Enemy Shoot System object.
- void update (const float dt)

  Update the Enemy Shoot system class, to allow enemies to shoot.
- EnemyShootSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::System↩ Count > &entityManager)

  Construct a new Enemy Shoot System object.
- void update (const float dt)

  Update the Enemy Shoot system class, to allow enemies to shoot.

Additional Inherited Members

3.20.1 Detailed Description

EnemyShoot system class used to let the enemy shoot.

3.20.2 Constructor & Destructor Documentation

3.20.2.1 EnemyShootSystem() [1/2]

```
rtype::system::EnemyShootSystem::EnemyShootSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Enemy Shoot System object.

Parameters

entityManager	

3.20.2.2 EnemyShootSystem() [2/2]

```
rtype::system::EnemyShootSystem::EnemyShootSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Enemy Shoot System object.

Parameters

entityManager	

3.20.3 Member Function Documentation

3.20.3.1 update() [1/2]

```
void rtype::system::EnemyShootSystem::update (
            const float dt ) [inline], [virtual]
```

Update the Enemy Shoot system class, to allow enemies to shoot.

Parameters

dt	The Delta Time for the shoot of enemies

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

3.20.3.2 update() [2/2]

```
void rtype::system::EnemyShootSystem::update (
            const float dt ) [inline], [virtual]
```

Update the Enemy Shoot system class, to allow enemies to shoot.

Parameters

dt	The Delta Time for the shoot of enemies

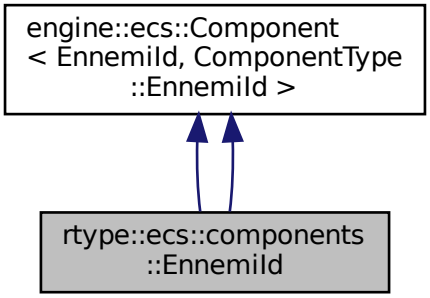
Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

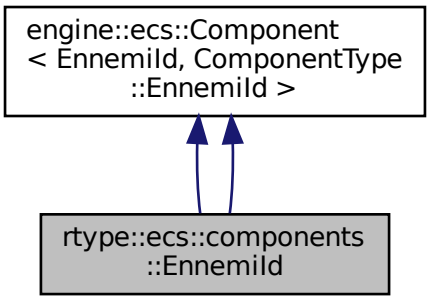
- rtype-client/include/systems/EnemyShootSystem.hpp

3.21 rtype::ecs::components::EnnemiId Struct Reference

Inheritance diagram for rtype::ecs::components::EnnemiId:



Collaboration diagram for rtype::ecs::components::EnnemiId:



Public Member Functions

- **EnnemiId** (int ennemiId)
- **EnnemiId** (int ennemiId)

Public Attributes

- int **id**

Additional Inherited Members

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

- rtype-client/include/Components.hpp

3.22 engine::ecs::EntityContainer< ComponentCount, SystemCount > Class Template Reference

EntityContainer class used to store entities.

`#include <EntityContainer.hpp>`

Public Member Functions

- void reserve (std::size_t size)
  Construct a new EntityContainer object.
- std::vector< std::bitset< ComponentCount > > & getEntityToBitset ()
  Get the Entity To Bitset object.
- const std::bitset< ComponentCount > & getBitset (Entity entity) const
  Get the Entity To Bitset object.
- std::vector< Index > & getEntityToComponent (std::size_t type)
  Get the Entity To Component object.
- std::vector< Index > & getEntityToManagedEntity (std::size_t type)
  Get the Entity To Managed Entity object.
- Entity create ()
  Create a new Entity object.
- void remove (Entity entity)
  Remove an Entity object.

3.22.1 Detailed Description

template<std::size_t ComponentCount, std::size_t SystemCount>
class engine::ecs::EntityContainer< ComponentCount, SystemCount >

EntityContainer class used to store entities.

Template Parameters

ComponentCount	
SystemCount	

3.22.2 Member Function Documentation

3.22.2.1 create()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
Entity engine::ecs::EntityContainer< ComponentCount, SystemCount >::create ( )  [inline]
```

Create a new Entity object.

Returns

Entity

3.22.2.2 getBitset()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
const std::bitset<ComponentCount>& engine::ecs::EntityContainer< ComponentCount, SystemCount
>::getBitset (
            Entity entity ) const  [inline]
```

Get the Entity To Bitset object.

Parameters

entity	

Returns

const std::bitset<ComponentCount>&

3.22.2.3 getEntityToBitset()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
std::vector<std::bitset<ComponentCount> >& engine::ecs::EntityContainer< ComponentCount,
SystemCount >::getEntityToBitset ( )  [inline]
```

Get the Entity To Bitset object.

Returns

std::vector<std::bitset<ComponentCount>>&

3.22.2.4 getEntityToComponent()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
std::vector<Index>& engine::ecs::EntityContainer< ComponentCount, SystemCount >::getEntity↩
ToComponent (
            std::size_t type )  [inline]
```

Get the Entity To Component object.

Parameters

type	

Returns

std::vector<Index>&

3.22.2.5 getEntityToManagedEntity()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
std::vector<Index>& engine::ecs::EntityContainer< ComponentCount, SystemCount >::getEntity↩
ToManagedEntity (
            std::size_t type )  [inline]
```

Get the Entity To Managed Entity object.

Parameters

type	

Returns

std::vector<Index>&

3.22.2.6 remove()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
void engine::ecs::EntityContainer< ComponentCount, SystemCount >::remove (
            Entity entity )  [inline]
```

Remove an Entity object.

Parameters

entity	

3.22.2.7 reserve()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
void engine::ecs::EntityContainer< ComponentCount, SystemCount >::reserve (
            std::size_t size )  [inline]
```

Construct a new EntityContainer object.

Parameters

size	

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

- engine/include/ecs/EntityContainer.hpp

3.23 engine::ecs::EntityManager< ComponentCount, SystemCount > Class Template Reference

Entity manager class. It is used to create entities, add components to them and create systems with the entity linked.

`#include <EntityManager.hpp>`

Public Member Functions

- template<typename T >
  void registerComponent ()
  Construct a new Entity Manager object.
- template<typename T , typename... Args>
  T * createSystem (Args &&...args)
  Create a System object.
- void reserve (std::size_t size)
  Reserve the size of the containers.
- Entity createEntity ()
  Create a Entity object.
- void removeEntity (Entity entity)
  Remove a Entity object.
- template<typename T >
  bool hasComponent (Entity entity) const
  Add a Component to a Entity.
- template<typename... Ts>
  bool hasComponents (Entity entity) const
  Check if a Entity has a set of Components.
- template<typename T >
  T & getComponent (Entity entity)
  Get the Component object.
- template<typename T >
  const T & getComponent (Entity entity) const
  Get the Component object with const.
- template<typename... Ts>
  std::tuple< Ts &... > getComponents (Entity entity)
  Get the Components object.
- template<typename... Ts>
  std::tuple< const Ts &... > getComponents (Entity entity) const

Get the Components object.

- template<typename T , typename... Args>
  void addComponent (Entity entity, Args &&...args)

  Add a Component to a Entity.
- template<typename T >
  void removeComponent (Entity entity)

  Remove a Component from a Entity.
- template<typename T >
  Entity getOwner (const T &component) const

  Get the Owner object.
- void updateSystems (const float dt)

  Get the Component Container object.
- void drawSystems (engine::graphical::GraphicalWindow &window)

  Draw the Systems.
- void dispatchEvent (const Event &event)

  Dispatch an Event to all Systems.

3.23.1 Detailed Description

template<std::size_t ComponentCount, std::size_t SystemCount>
class engine::ecs::EntityManager< ComponentCount, SystemCount >

Entity manager class. It is used to create entities, add components to them and create systems with the entity linked.

Template Parameters

ComponentCount	
SystemCount	

3.23.2 Member Function Documentation

3.23.2.1 addComponent()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename T , typename...  Args>
void engine::ecs::EntityManager< ComponentCount, SystemCount >::addComponent (
            Entity entity,
            Args &&...  args )  [inline]
```

Add a Component to a Entity.

Template Parameters

T	
Args	

Parameters

entity	
args	

3.23.2.2 createEntity()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
Entity engine::ecs::EntityManager< ComponentCount, SystemCount >::createEntity ( )  [inline]
```

Create a Entity object.

Returns

Entity

3.23.2.3 createSystem()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename T , typename...  Args>
T* engine::ecs::EntityManager< ComponentCount, SystemCount >::createSystem (
            Args &&...  args )  [inline]
```

Create a System object.

Template Parameters

T	
Args	

Parameters

args	

Returns

T*

3.23.2.4 dispatchEvent()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
void engine::ecs::EntityManager< ComponentCount, SystemCount >::dispatchEvent (
            const Event & event )  [inline]
```

Dispatch an Event to all Systems.

Parameters

event	

3.23.2.5 drawSystems()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
void engine::ecs::EntityManager< ComponentCount, SystemCount >::drawSystems (
            engine::graphical::GraphicalWindow & window )  [inline]
```

Draw the Systems.

Parameters

window	

3.23.2.6 getComponent() [1/2]

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename T >
T& engine::ecs::EntityManager< ComponentCount, SystemCount >::getComponent (
            Entity entity )  [inline]
```

Get the Component object.

Template Parameters

T	

Parameters

entity	

Returns

T&

3.23.2.7 getComponent() [2/2]

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename T >
```

```
const T& engine::ecs::EntityManager< ComponentCount, SystemCount >::getComponent (
            Entity entity ) const  [inline]
```

Get the Component object with const.

Template Parameters

T	

Parameters

entity	

Returns

const T&

3.23.2.8 getComponents() [1/2]

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename...  Ts>
std::tuple<Ts &...> engine::ecs::EntityManager< ComponentCount, SystemCount >::getComponents
(
            Entity entity )  [inline]
```

Get the Components object.

Template Parameters

Ts	

Parameters

entity	

Returns

std::tuple<Ts &...>

3.23.2.9 getComponents() [2/2]

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename...  Ts>
```

```
std::tuple<const Ts &...> engine::ecs::EntityManager< ComponentCount, SystemCount >::get↩
Components (
            Entity entity ) const  [inline]
```

Get the Components object.

Template Parameters

Ts	

Parameters

entity	

Returns

std::tuple<const Ts &...>

3.23.2.10 getOwner()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename T >
Entity engine::ecs::EntityManager< ComponentCount, SystemCount >::getOwner (
            const T & component ) const  [inline]
```

Get the Owner object.

Template Parameters

T	

Parameters

component	

Returns

Entity

3.23.2.11 hasComponent()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename T >
bool engine::ecs::EntityManager< ComponentCount, SystemCount >::hasComponent (
            Entity entity ) const  [inline]
```

Add a Component to a Entity.

Template Parameters

T	

Parameters

entity	

Returns

true

false

3.23.2.12 hasComponents()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename...  Ts>
bool engine::ecs::EntityManager< ComponentCount, SystemCount >::hasComponents (
            Entity entity ) const  [inline]
```

Check if a Entity has a set of Components.

Template Parameters

Ts	

Parameters

entity	

Returns

true

false

3.23.2.13 registerComponent()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename T >
void engine::ecs::EntityManager< ComponentCount, SystemCount >::registerComponent ( )  [inline]
```

Construct a new Entity Manager object.

Template Parameters

T	

3.23.2.14 removeComponent()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename T >
void engine::ecs::EntityManager< ComponentCount, SystemCount >::removeComponent (
            Entity entity )  [inline]
```

Remove a Component from a Entity.

Template Parameters

T	

Parameters

entity	

3.23.2.15 removeEntity()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
void engine::ecs::EntityManager< ComponentCount, SystemCount >::removeEntity (
            Entity entity )  [inline]
```

Remove a Entity object.

Parameters

entity	

3.23.2.16 reserve()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
void engine::ecs::EntityManager< ComponentCount, SystemCount >::reserve (
            std::size_t size )  [inline]
```

Reserve the size of the containers.

Parameters

size	

3.23.2.17 updateSystems()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
void engine::ecs::EntityManager< ComponentCount, SystemCount >::updateSystems (
            const float dt ) [inline]
```

Get the Component Container object.

Parameters

dt	

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

- engine/include/ecs/EntityManager.hpp

3.24 rtype::EntityTemplate Class Reference

EntityTemplate class which allows you to create entities.

```
#include <EntityTemplate.hpp>
```

Public Member Functions

- EntityTemplate (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Entity Template object.
- int createPlayer (int playerId, bool isOwner, std::pair< float, float > pos)

  Create a Player object.
- int createPlayerBullet (int x, int y)

  Create a Player Bullet object.
- int createSpecialPlayerBullet (int x, int y)

  Create a Special Player Bullet object when a bonus is triggered.
- int createEnemyBullet (int x, int y)

  Create a Enemy Bullet object.
- int createBossHiveBullet (int x, int y, float velX, float velY)

  Create a Boss Hive Bullet object.
- int createBossAlienBullet (int x, int y, float velX, float velY)

  Create a Boss Alien Bullet object.
- int createBossAlien (float x, float y, int enemyId)

  Create a Boss Alien object.

- int createBossHive (float x, float y, int enemyId)

  Create a Boss Hive object.
- int createEnemyCrab (float x, float y, int enemyId)

  Create a Enemy Crab object.
- int createEnemyBeetle (float x, float y, int enemyId)

  Create a Enemy Beetle object.
- int createSpecialShootBonus (float x, float y, int id)

  Create a Bonus object.
- int createHealthBonus (float x, float y, int id)

  Create a Health Bonus object.
- int createParallax (float x, float y, const std::string &textureName, float speed, int spriteLayer)

  Create a Parallax object.
- int createTopBoundary (float x, float y)

  Create a top boundary object.
- int createBottomBoundary (float x, float y)

  Create a bottom boundary object.
- int createAsteroid (float x, float y, int id)

  Create a asteroid object.
- EntityTemplate (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Entity Template object.
- int createPlayer (int playerId, bool isOwner, std::pair< float, float > pos)

  Create a Player object.
- int createPlayerBullet (int x, int y)

  Create a Player Bullet object.
- int createSpecialPlayerBullet (int x, int y)

  Create a Special Player Bullet object when a bonus is triggered.
- int createEnemyBullet (int x, int y)

  Create a Enemy Bullet object.
- int createBossHiveBullet (int x, int y, float velX, float velY)

  Create a Boss Hive Bullet object.
- int createBossAlienBullet (int x, int y, float velX, float velY)

  Create a Boss Alien Bullet object.
- int createBossAlien (float x, float y, int enemyId)

  Create a Boss Alien object.
- int createBossHive (float x, float y, int enemyId)

  Create a Boss Hive object.
- int createEnemyCrab (float x, float y, int enemyId)

  Create a Enemy Crab object.
- int createEnemyBeetle (float x, float y, int enemyId)

  Create a Enemy Beetle object.
- int createSpecialShootBonus (float x, float y, int id)

  Create a Bonus object.
- int createHealthBonus (float x, float y, int id)

  Create a Health Bonus object.
- int createParallax (float x, float y, const std::string &textureName, float speed, int spriteLayer)

  Create a Parallax object.
- int createTopBoundary (float x, float y)

  Create a top boundary object.
- int createBottomBoundary (float x, float y)

  Create a bottom boundary object.
- int createAsteroid (float x, float y, int id)

  Create a asteroid object.

3.24.1 Detailed Description

EntityTemplate class which allows you to create entities.

3.24.2 Constructor & Destructor Documentation

3.24.2.1 EntityTemplate() [1/2]

```
rtype::EntityTemplate::EntityTemplate (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )
```

Construct a new Entity Template object.

Parameters

entityManager	
assetManager	

3.24.2.2 EntityTemplate() [2/2]

```
rtype::EntityTemplate::EntityTemplate (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )
```

Construct a new Entity Template object.

Parameters

entityManager	
assetManager	

3.24.3 Member Function Documentation

3.24.3.1 createAsteroid() [1/2]

```
int rtype::EntityTemplate::createAsteroid (
            float x,
```

```
            float y,
            int id )
```

Create a asteroid object.

Parameters

x	position
y	position

Returns

int

3.24.3.2 createAsteroid() [2/2]

```
int rtype::EntityTemplate::createAsteroid (
            float x,
            float y,
            int id )
```

Create a asteroid object.

Parameters

x	position
y	position

Returns

int

3.24.3.3 createBossAlien() [1/2]

```
int rtype::EntityTemplate::createBossAlien (
            float x,
            float y,
            int enemyId )
```

Create a Boss Alien object.

Parameters

x	position
y	position

Returns

int

3.24.3.4 createBossAlien() [2/2]

```
int rtype::EntityTemplate::createBossAlien (
            float x,
            float y,
            int enemyId )
```

Create a Boss Alien object.

Parameters

x	position
y	position

Returns

int

3.24.3.5 createBossAlienBullet() [1/2]

```
int rtype::EntityTemplate::createBossAlienBullet (
            int x,
            int y,
            float velX,
            float velY )
```

Create a Boss Alien Bullet object.

Parameters

x	position
y	position
velX	velocity in X
velY	velocity in Y

Returns

int

3.24.3.6 createBossAlienBullet() [2/2]

```
int rtype::EntityTemplate::createBossAlienBullet (
            int x,
```

```
            int y,
            float velX,
            float velY )
```

Create a Boss Alien Bullet object.

Parameters

x	position
y	position
velX	velocity in X
velY	velocity in Y

Returns

int

3.24.3.7 createBossHive() [1/2]

```
int rtype::EntityTemplate::createBossHive (
            float x,
            float y,
            int enemyId )
```

Create a Boss Hive object.

Parameters

x	position
y	position

Returns

int

3.24.3.8 createBossHive() [2/2]

```
int rtype::EntityTemplate::createBossHive (
            float x,
            float y,
            int enemyId )
```

Create a Boss Hive object.

Parameters

x	position
y	position

Returns

int

3.24.3.9 createBossHiveBullet() [1/2]

```
int rtype::EntityTemplate::createBossHiveBullet (
            int x,
            int y,
            float velX,
            float velY )
```

Create a Boss Hive Bullet object.

Parameters

x	position
y	position

Returns

int

3.24.3.10 createBossHiveBullet() [2/2]

```
int rtype::EntityTemplate::createBossHiveBullet (
            int x,
            int y,
            float velX,
            float velY )
```

Create a Boss Hive Bullet object.

Parameters

x	position
y	position

Returns

int

3.24.3.11 createBottomBoundary() [1/2]

```
int rtype::EntityTemplate::createBottomBoundary (
            float x,
            float y )
```

Create a bottom boundary object.

Parameters

x	position
y	position

Returns

int

3.24.3.12 createBottomBoundary() [2/2]

```
int rtype::EntityTemplate::createBottomBoundary (
            float x,
            float y )
```

Create a bottom boundary object.

Parameters

x	position
y	position

Returns

int

3.24.3.13 createEnemyBeetle() [1/2]

```
int rtype::EntityTemplate::createEnemyBeetle (
            float x,
```

```
            float y,
            int enemyId )
```

Create a Enemy Beetle object.

Parameters

x	position
y	position

Returns

int

3.24.3.14 createEnemyBeetle() [2/2]

```
int rtype::EntityTemplate::createEnemyBeetle (
            float x,
            float y,
            int enemyId )
```

Create a Enemy Beetle object.

Parameters

x	position
y	position

Returns

int

3.24.3.15 createEnemyBullet() [1/2]

```
int rtype::EntityTemplate::createEnemyBullet (
            int x,
            int y )
```

Create a Enemy Bullet object.

Parameters

x	position
y	position

Returns

int

3.24.3.16 createEnemyBullet() [2/2]

```
int rtype::EntityTemplate::createEnemyBullet (
            int x,
            int y )
```

Create a Enemy Bullet object.

Parameters

x	position
y	position

Returns

int

3.24.3.17 createEnemyCrab() [1/2]

```
int rtype::EntityTemplate::createEnemyCrab (
            float x,
            float y,
            int enemyId )
```

Create a Enemy Crab object.

Parameters

x	position
y	position

Returns

int

3.24.3.18 createEnemyCrab() [2/2]

```
int rtype::EntityTemplate::createEnemyCrab (
            float x,
            float y,
            int enemyId )
```

Create a Enemy Crab object.

Parameters

x	position
y	position

Returns

int

3.24.3.19 createHealthBonus() [1/2]

```
int rtype::EntityTemplate::createHealthBonus (
            float x,
            float y,
            int id )
```

Create a Health Bonus object.

Parameters

x	
y	

Returns

int

3.24.3.20 createHealthBonus() [2/2]

```
int rtype::EntityTemplate::createHealthBonus (
            float x,
            float y,
            int id )
```

Create a Health Bonus object.

Parameters

x	
y	

Returns

int

3.24.3.21 createParallax() [1/2]

```
int rtype::EntityTemplate::createParallax (
            float x,
            float y,
            const std::string & textureName,
            float speed,
            int spriteLayer )
```

Create a Parallax object.

Parameters

x	position
y	position
textureName	for each assets
speed	the speed of each objects of the parallax
spriteLayer	the layer of the sprite

Returns

int

3.24.3.22 createParallax() [2/2]

```
int rtype::EntityTemplate::createParallax (
            float x,
            float y,
            const std::string & textureName,
            float speed,
            int spriteLayer )
```

Create a Parallax object.

Parameters

x	position
y	position
textureName	for each assets
speed	the speed of each objects of the parallax
spriteLayer	the layer of the sprite

Returns

int

3.24.3.23 createPlayer() [1/2]

```
int rtype::EntityTemplate::createPlayer (
            int playerId,
            bool isOwner,
            std::pair< float, float > pos )
```

Create a Player object.

Parameters

playerId	for multiplayer
isOwner	

Returns

int

3.24.3.24 createPlayer() [2/2]

```
int rtype::EntityTemplate::createPlayer (
            int playerId,
            bool isOwner,
            std::pair< float, float > pos )
```

Create a Player object.

Parameters

playerId	for multiplayer
isOwner	

Returns

int

3.24.3.25 createPlayerBullet() [1/2]

```
int rtype::EntityTemplate::createPlayerBullet (
            int x,
            int y )
```

Create a Player Bullet object.

Parameters

x	position
y	position

Returns

int

3.24.3.26 createPlayerBullet() [2/2]

```
int rtype::EntityTemplate::createPlayerBullet (
            int x,
            int y )
```

Create a Player Bullet object.

Parameters

x	position
y	position

Returns

int

3.24.3.27 createSpecialPlayerBullet() [1/2]

```
int rtype::EntityTemplate::createSpecialPlayerBullet (
            int x,
            int y )
```

Create a Special Player Bullet object when a bonus is triggered.

Parameters

x	position
y	position

Returns

int

3.24.3.28 createSpecialPlayerBullet() [2/2]

```
int rtype::EntityTemplate::createSpecialPlayerBullet (
            int x,
            int y )
```

Create a Special Player Bullet object when a bonus is triggered.

Parameters

x	position
y	position

Returns

int

3.24.3.29 createSpecialShootBonus() [1/2]

```
int rtype::EntityTemplate::createSpecialShootBonus (
            float x,
            float y,
            int id )
```

Create a Bonus object.

Parameters

x	position
y	position

Returns

int

3.24.3.30 createSpecialShootBonus() [2/2]

```
int rtype::EntityTemplate::createSpecialShootBonus (
            float x,
            float y,
            int id )
```

Create a Bonus object.

Parameters

x	position
y	position

Returns

int

3.24.3.31 createTopBoundary() [1/2]

```
int rtype::EntityTemplate::createTopBoundary (
            float x,
            float y )
```

Create a top boundary object.

Parameters

x	position
y	position

Returns

int

3.24.3.32 createTopBoundary() [2/2]

```
int rtype::EntityTemplate::createTopBoundary (
            float x,
            float y )
```

Create a top boundary object.

Parameters

x	position
y	position

Returns

int

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

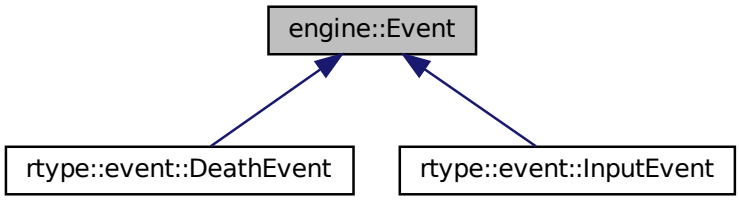
- rtype-client/include/EntityTemplate.hpp

3.25 engine::Event Class Reference

Event class which is the base class for all events.

`#include <Event.hpp>`

Inheritance diagram for engine::Event:



3.25.1 Detailed Description

Event class which is the base class for all events.

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

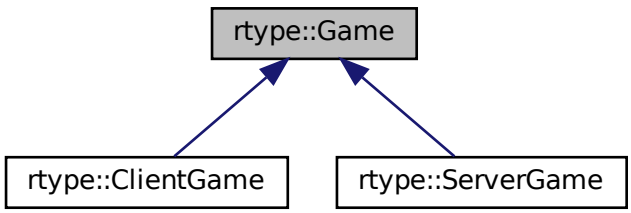
- engine/include/ecs/Event.hpp

3.26 rtype::Game Class Reference

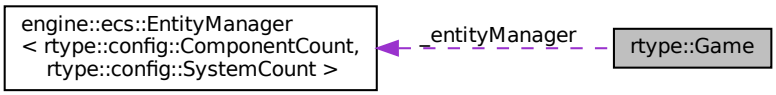
Game's base, has to be completed in a child class.

`#include <Game.hpp>`

Inheritance diagram for rtype::Game:



Collaboration diagram for rtype::Game:



Public Member Functions

- Game ()

  Create base of the game.
- virtual void handleEvent (rtype::NetworkEvent content)=0

  Handle how to handle the received events.
- engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > & getEntityManager ()

  Gets the entity manager of the game.
- virtual void gameLoop ()=0

  Game loop to repeat at every frame.
- virtual bool isOver ()=0

  Tells if the game is over.
- virtual float getFps () const =0

  Gets the fps of the game.

Protected Member Functions

- virtual void gameUpdate ()=0

  Update the game.
- virtual void gameEvent ()

  Handle game events from the game (keyboard, mouse, ...)

Protected Attributes

- std::chrono::time_point< std::chrono::steady_clock > **_clockStarting**
- double **_dt**
- engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > **_entityManager**
- std::unordered_map< int, engine::ecs::Entity > **_players**

3.26.1 Detailed Description

Game's base, has to be completed in a child class.

3.26.2 Constructor & Destructor Documentation

3.26.2.1 Game()

```
rtype::Game::Game ( )
```

Create base of the game.

Parameters

queue	Queue to fill if need to send package by network

3.26.3 Member Function Documentation

3.26.3.1 getEntityManager()

```
engine::ecs::EntityManager<rtype::config::ComponentCount, rtype::config::SystemCount>& rtype↩
::Game::getEntityManager ( )
```

Gets the entity manager of the game.

Returns

The entity manager

3.26.3.2 getFps()

```
virtual float rtype::Game::getFps ( ) const  [pure virtual]
```

Gets the fps of the game.

Returns

Float containing the fps

Implemented in rtype::ServerGame, and rtype::ClientGame.

3.26.3.3 handleEvent()

```
virtual void rtype::Game::handleEvent (
            rtype::NetworkEvent content )  [pure virtual]
```

Handle how to handle the received events.

Parameters

content	Package to handle

Implemented in rtype::ServerGame, and rtype::ClientGame.

3.26.3.4 isOver()

```
virtual bool rtype::Game::isOver ( )  [pure virtual]
```

Tells if the game is over.

Returns

Boolean saying if the game is over

Implemented in rtype::ServerGame, and rtype::ClientGame.

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

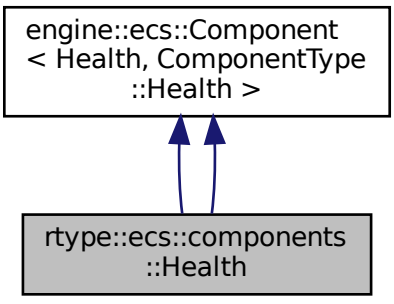
- game/include/Game.hpp

3.27 rtype::ecs::components::Health Struct Reference

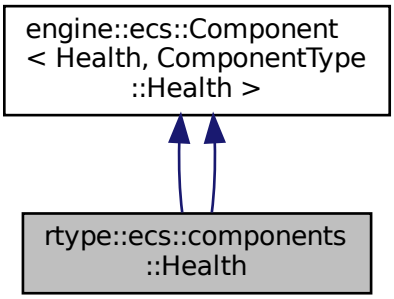
Health struct which contains the health of the entity.

```
#include <Components.hpp>
```

Inheritance diagram for rtype::ecs::components::Health:



Collaboration diagram for rtype::ecs::components::Health:



Public Member Functions

- **Health** (int Hp, const std::string &Tag)
- **Health** (int Hp, const std::string &Tag)

Public Attributes

- int **hp**
- std::string **tag**

Additional Inherited Members

3.27.1 Detailed Description

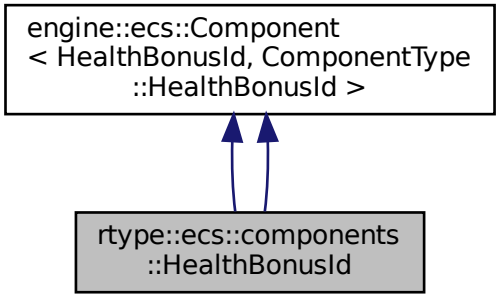
Health struct which contains the health of the entity.

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

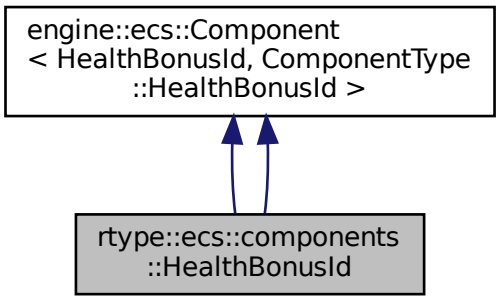
- rtype-client/include/Components.hpp

3.28 rtype::ecs::components::HealthBonusId Struct Reference

Inheritance diagram for rtype::ecs::components::HealthBonusId:



Collaboration diagram for rtype::ecs::components::HealthBonusId:



Public Member Functions

- **HealthBonusId** (int healthBonusId)
- **HealthBonusId** (int healthBonusId)

Public Attributes

- int **id**

Additional Inherited Members

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

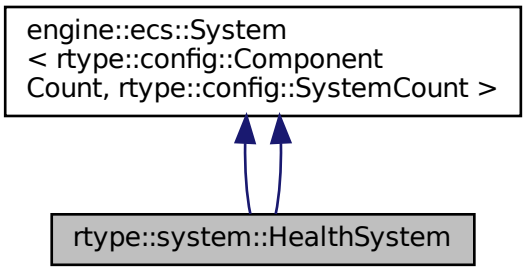
- rtype-client/include/Components.hpp

3.29 rtype::system::HealthSystem Class Reference

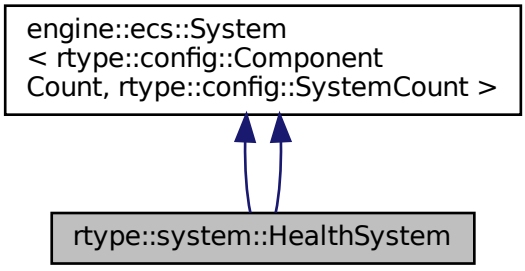
Health system class to check if an entity is dead or not.

`#include <HealthSystem.hpp>`

Inheritance diagram for rtype::system::HealthSystem:



Collaboration diagram for rtype::system::HealthSystem:



Public Member Functions

- HealthSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Health System object.
- void update (const float dt)

  Update the Health System object.
- HealthSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Health System object.
- void update (const float dt)

  Update the Health System object.

Additional Inherited Members

3.29.1 Detailed Description

Health system class to check if an entity is dead or not.

3.29.2 Constructor & Destructor Documentation

3.29.2.1 HealthSystem() [1/2]

```
rtype::system::HealthSystem::HealthSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Health System object.

Parameters

entityManager	

3.29.2.2 HealthSystem() [2/2]

```
rtype::system::HealthSystem::HealthSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Health System object.

Parameters

entityManager	

3.29.3 Member Function Documentation

3.29.3.1 update() [1/2]

```
void rtype::system::HealthSystem::update (
            const float dt )  [inline], [virtual]
```

Update the Health System object.

Parameters

dt	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

3.29.3.2 update() [2/2]

```
void rtype::system::HealthSystem::update (
            const float dt )  [inline], [virtual]
```

Update the Health System object.

Parameters

dt	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

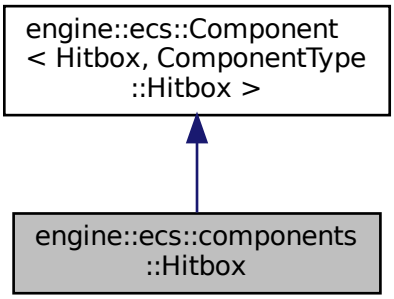
- rtype-client/include/systems/HealthSystem.hpp

3.30 engine::ecs::components::Hitbox Struct Reference

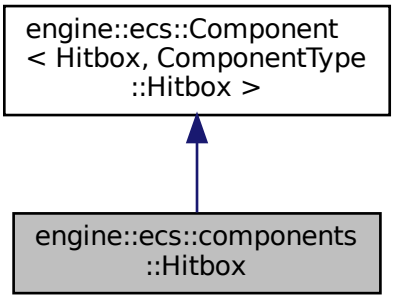
Hitbox component.

```
#include <Components.hpp>
```

Inheritance diagram for engine::ecs::components::Hitbox:



Collaboration diagram for engine::ecs::components::Hitbox:



Public Member Functions

- **Hitbox** (float Width, float Height, bool IsTrigger=false)
- **Hitbox** (float Width, float Height, const std::string &Tag, const std::string &TriggerTags, bool IsTrigger=false)

Public Attributes

- float **width**
- float **height**
- bool **collided**
- bool **isTrigger**
- std::string **tag**
- std::string **triggerTags**

Additional Inherited Members

3.30.1 Detailed Description

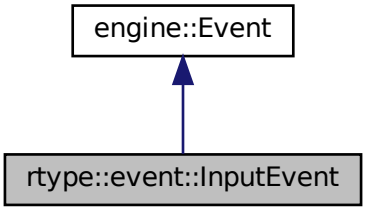
Hitbox component.

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

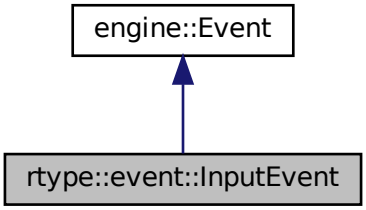
- engine/include/ecs/Components.hpp

3.31 rtype::event::InputEvent Class Reference

Inheritance diagram for rtype::event::InputEvent:



Collaboration diagram for rtype::event::InputEvent:



Public Attributes

- int **key**
- int **playerId**

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

- game/include/events/InputEvent.hpp

3.32 rtype::LevelManager Class Reference

Level manager class to manage the creation of levels.

`#include <LevelManager.hpp>`

Public Member Functions

- LevelManager (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Level Manager object.
- void createLevel (int level)

  Create a Level object.
- void createBossLevel (int level)

  Create a Boss Level object.
- int getLevel () const

  Get the Level object.
- void **setLevel** (int level)
- LevelManager (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Level Manager object.
- void createLevel (int level)

  Create a Level object.
- void createBossLevel (int level)

  Create a Boss Level object.
- int getLevel () const

  Get the Level object.
- void **setLevel** (int level)

3.32.1 Detailed Description

Level manager class to manage the creation of levels.

3.32.2 Constructor & Destructor Documentation

3.32.2.1 LevelManager() [1/2]

```
rtype::LevelManager::LevelManager (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )
```

Construct a new Level Manager object.

Parameters

entityManager	

3.32.2.2 LevelManager() [2/2]

```
rtype::LevelManager::LevelManager (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )
```

Construct a new Level Manager object.

Parameters

entityManager	

3.32.3 Member Function Documentation

3.32.3.1 createBossLevel() [1/2]

```
void rtype::LevelManager::createBossLevel (
            int level )
```

Create a Boss Level object.

Parameters

level	

3.32.3.2 createBossLevel() [2/2]

```
void rtype::LevelManager::createBossLevel (
            int level )
```

Create a Boss Level object.

Parameters

level	

3.32.3.3 createLevel() [1/2]

```
void rtype::LevelManager::createLevel (
            int level )
```

Create a Level object.

Parameters

level	

3.32.3.4 createLevel() [2/2]

```
void rtype::LevelManager::createLevel (
            int level )
```

Create a Level object.

Parameters

level	

3.32.3.5 getLevel() [1/2]

```
int rtype::LevelManager::getLevel ( ) const
```

Get the Level object.

Returns

int

3.32.3.6 getLevel() [2/2]

```
int rtype::LevelManager::getLevel ( ) const
```

Get the Level object.

Returns

int

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

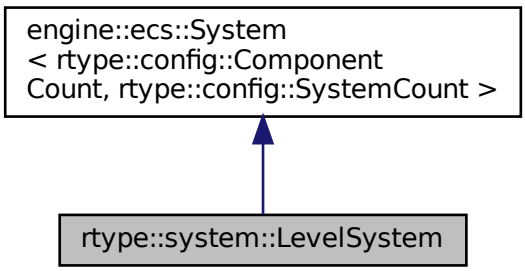
- rtype-client/include/LevelManager.hpp

3.33 rtype::system::LevelSystem Class Reference

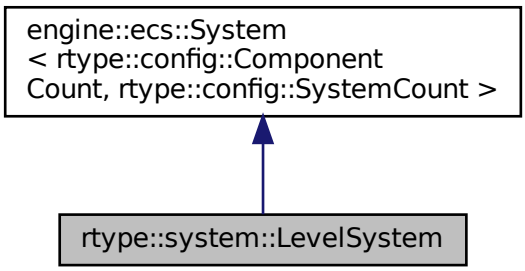
LevelSystem class which is used to have the operation of stages.

`#include <LevelSystem.hpp>`

Inheritance diagram for rtype::system::LevelSystem:



Collaboration diagram for rtype::system::LevelSystem:



Public Member Functions

- LevelSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager, rtype::LevelManager levelManager)

  Construct a new Level System object.
- void update (const float dt)

  Update function to get levels.

Additional Inherited Members

3.33.1 Detailed Description

LevelSystem class which is used to have the operation of stages.

3.33.2 Constructor & Destructor Documentation

3.33.2.1 LevelSystem()

```
rtype::system::LevelSystem::LevelSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager,
            rtype::LevelManager levelManager )  [inline]
```

Construct a new Level System object.

Parameters

entityManager	
levelManager	

3.33.3 Member Function Documentation

3.33.3.1 update()

```
void rtype::system::LevelSystem::update (
            const float dt )  [inline], [virtual]
```

Update function to get levels.

Parameters

dt	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

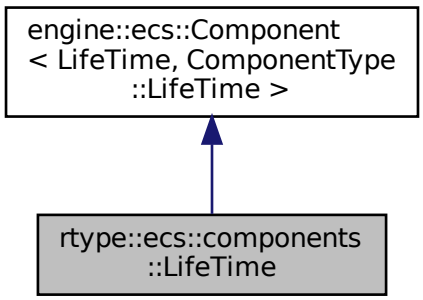
- game/include/systems/LevelSystem.hpp

3.34 rtype::ecs::components::LifeTime Struct Reference

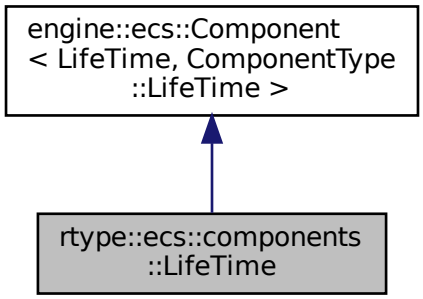
LifeTime struct which contains the life time info of the entity.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::LifeTime:



Collaboration diagram for rtype::ecs::components::LifeTime:



Public Member Functions

- **LifeTime** (float lifeTime)

Public Attributes

- float **lifeTime**

Additional Inherited Members

3.34.1 Detailed Description

LifeTime struct which contains the life time info of the entity.

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

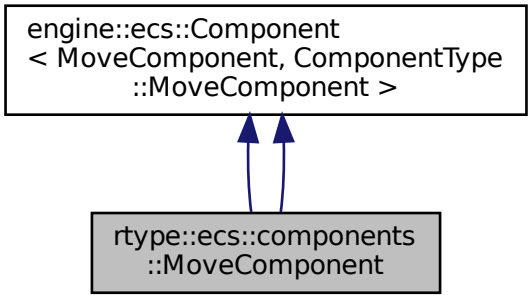
- rtype-client/include/Components.hpp

3.35 rtype::ecs::components::MoveComponent Struct Reference

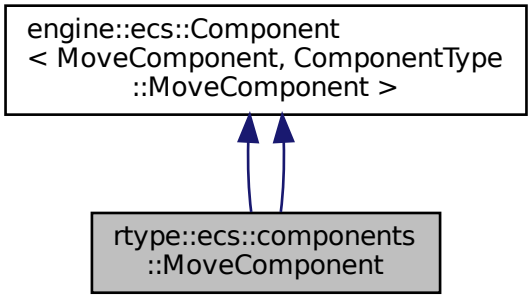
MoveComponent struct which contains the movement of the entity.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::MoveComponent:



Collaboration diagram for rtype::ecs::components::MoveComponent:



Additional Inherited Members

3.35.1 Detailed Description

MoveComponent struct which contains the movement of the entity.

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

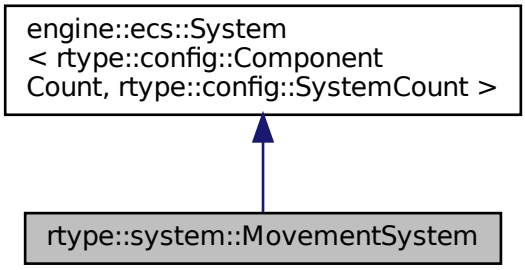
- rtype-client/include/Components.hpp

3.36 rtype::system::MovementSystem Class Reference

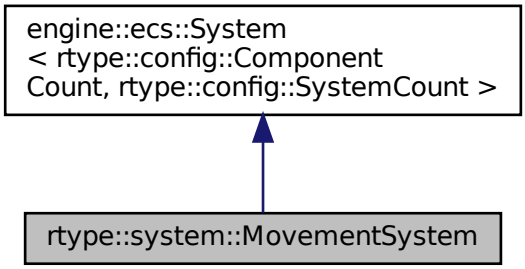
Movement system class used to move the entities.

`#include <MovementSystem.hpp>`

Inheritance diagram for rtype::system::MovementSystem:



Collaboration diagram for rtype::system::MovementSystem:



Public Member Functions

- MovementSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::System↩ Count > &entityManager)

  Construct a new Movement System object.
- void handleEvent (const engine::Event &event)

  Handle the events of the Movement System object.

Additional Inherited Members

3.36.1 Detailed Description

Movement system class used to move the entities.

3.36.2 Constructor & Destructor Documentation

3.36.2.1 MovementSystem()

```
rtype::system::MovementSystem::MovementSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Movement System object.

Parameters

entityManager	

3.36.3 Member Function Documentation

3.36.3.1 handleEvent()

```
void rtype::system::MovementSystem::handleEvent (
            const engine::Event & event )  [inline], [virtual]
```

Handle the events of the Movement System object.

Parameters

event	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

- game/include/systems/MovementSystem.hpp

3.37 rtype::NetworkEvent Struct Reference

Package structure.

`#include <QueueManager.hpp>`

Public Attributes

- NetworkEventType type
- int id
- int key
- std::pair< float, float > pos
- ObjectType objectType

3.37.1 Detailed Description

Package structure.

3.37.2 Member Data Documentation

3.37.2.1 id

`int rtype::NetworkEvent::id`

Specifies the ID of the entity concerned

3.37.2.2 key

`int rtype::NetworkEvent::key`

Specifies if a key (of the keyboard) has been touched

3.37.2.3 objectType

`ObjectType rtype::NetworkEvent::objectType`

Type of the object concerned (if one)

3.37.2.4 pos

```
std::pair<float, float> rtype::NetworkEvent::pos
```

Position of the object (if one)

3.37.2.5 type

```
NetworkEventType rtype::NetworkEvent::type
```

Specifies how the package is to be treated

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

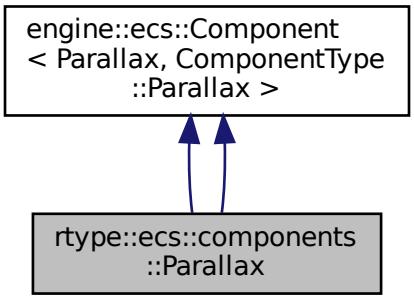
- game/include/QueueManager.hpp

3.38 rtype::ecs::components::Parallax Struct Reference

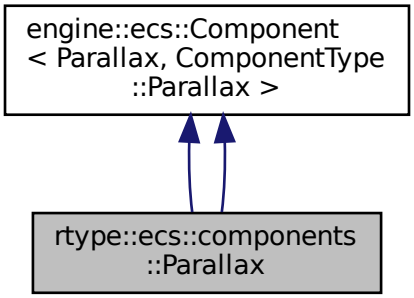
Parallax struct which contains the parallax of the entity.

```
#include <Components.hpp>
```

Inheritance diagram for rtype::ecs::components::Parallax:



Collaboration diagram for rtype::ecs::components::Parallax:



Additional Inherited Members

3.38.1 Detailed Description

Parallax struct which contains the parallax of the entity.

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

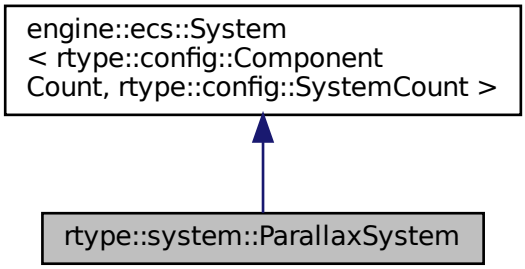
- rtype-client/include/Components.hpp

3.39 rtype::system::ParallaxSystem Class Reference

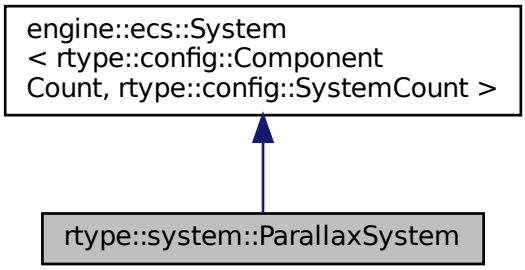
ParallaxSystem used to spin the parallax.

`#include <ParallaxSystem.hpp>`

Inheritance diagram for rtype::system::ParallaxSystem:



Collaboration diagram for rtype::system::ParallaxSystem:



Public Member Functions

- ParallaxSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Parallax System object.
- void update (const float dt)

  Update the parallax system so that it spins infinitely.

Additional Inherited Members

3.39.1 Detailed Description

ParallaxSystem used to spin the parallax.

3.39.2 Constructor & Destructor Documentation

3.39.2.1 ParallaxSystem()

```
rtype::system::ParallaxSystem::ParallaxSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Parallax System object.

Parameters

entityManager	

3.39.3 Member Function Documentation

3.39.3.1 update()

```
void rtype::system::ParallaxSystem::update (
            const float dt )  [inline], [virtual]
```

Update the parallax system so that it spins infinitely.

Parameters

dt	

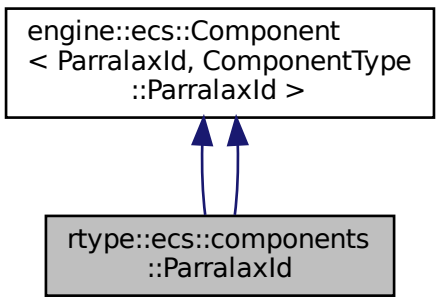
Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

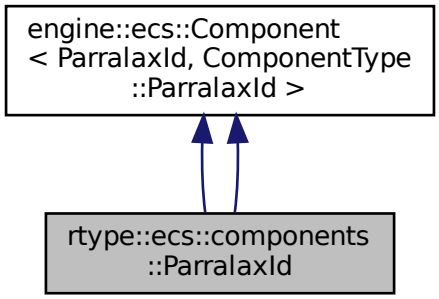
- game/include/systems/ParallaxSystem.hpp

3.40 rtype::ecs::components::ParralaxId Struct Reference

Inheritance diagram for rtype::ecs::components::ParralaxId:



Collaboration diagram for rtype::ecs::components::ParralaxId:



Public Member Functions

- **ParralaxId** (int parralaxId)
- **ParralaxId** (int parralaxId)

Public Attributes

- int **id**

Additional Inherited Members

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

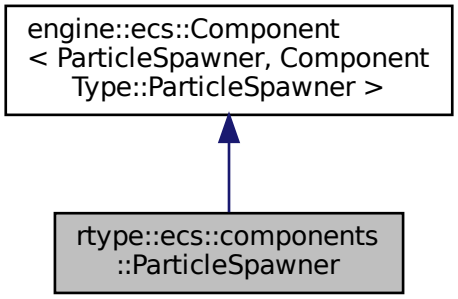
- rtype-client/include/Components.hpp

3.41 rtype::ecs::components::ParticleSpawner Struct Reference

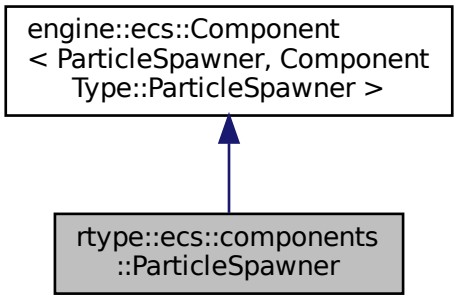
ParticleSpawner struct which contains the particle spawner info of the entity.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::ParticleSpawner:



Collaboration diagram for rtype::ecs::components::ParticleSpawner:



Public Member Functions

- **ParticleSpawner** (const std::string &configFilePath)

Public Attributes

- int **nbParticles**
- int **nbParticlesSpawned**
- float **timer**
- float **timeBetweenSpawn**
- float **particleLifeTime**
- sf::Vector2f **rangeVelocityX**
- sf::Vector2f **rangeVelocityY**
- sf::Vector2f **rangeSpawnX**
- sf::Vector2f **rangeSpawnY**
- bool **isLooping**
- float **fadeScale**
- sf::Sprite **sprite**
- int **spriteLayout**

Additional Inherited Members

3.41.1 Detailed Description

ParticleSpawner struct which contains the particle spawner info of the entity.

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

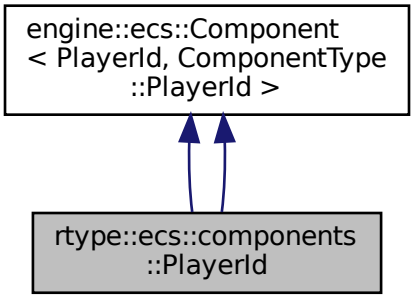
- rtype-client/include/Components.hpp

3.42 rtype::ecs::components::PlayerId Struct Reference

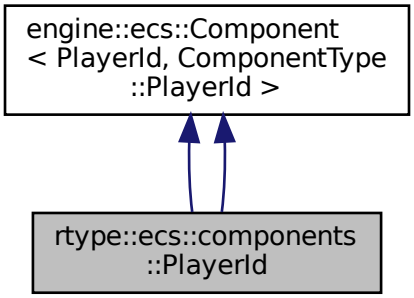
PlayerId struct which contains the player id.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::PlayerId:



Collaboration diagram for rtype::ecs::components::PlayerId:



Public Member Functions

- **PlayerId** (int playerId, bool owner)
- **PlayerId** (int playerId, bool owner)

Public Attributes

- int **id**
- bool **isOwner**

Additional Inherited Members

3.42.1 Detailed Description

PlayerId struct which contains the player id.

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

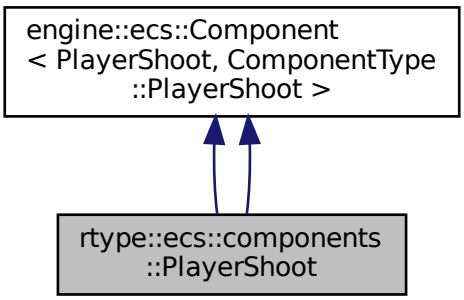
- rtype-client/include/Components.hpp

3.43 rtype::ecs::components::PlayerShoot Struct Reference

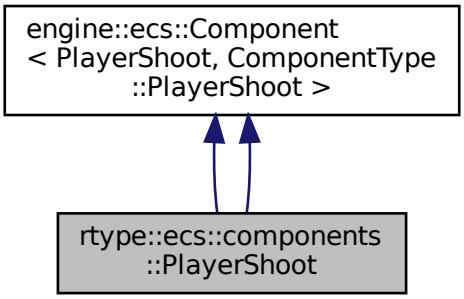
PlayerShoot struct which contains the player shoot.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::PlayerShoot:



Collaboration diagram for rtype::ecs::components::PlayerShoot:



Public Attributes

- bool **isSpecialBulletBonusActivated**

Additional Inherited Members

3.43.1 Detailed Description

PlayerShoot struct which contains the player shoot.

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

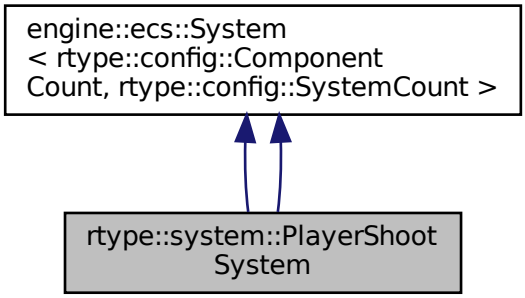
- rtype-client/include/Components.hpp

3.44 rtype::system::PlayerShootSystem Class Reference

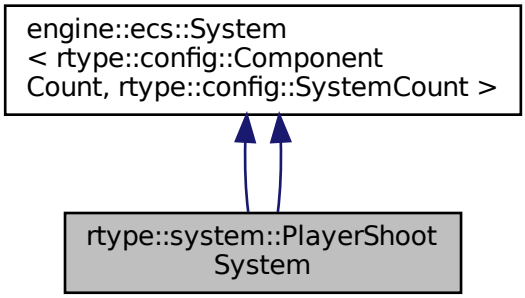
PlayerShoot system class used to let the player shoot.

`#include <PlayerShootSystem.hpp>`

Inheritance diagram for rtype::system::PlayerShootSystem:



Collaboration diagram for rtype::system::PlayerShootSystem:



Public Member Functions

- PlayerShootSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::System↩ Count > &entityManager)

  Construct a new Player Shoot System object.
- void handleEvent (const engine::Event &event)

  Handle the events of the Player Shoot System object.
- PlayerShootSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::System↩ Count > &entityManager)

  Construct a new Player Shoot System object.
- void handleEvent (const engine::Event &event)

  Handle the events of the Player Shoot System object.

Additional Inherited Members

3.44.1 Detailed Description

PlayerShoot system class used to let the player shoot.

3.44.2 Constructor & Destructor Documentation

3.44.2.1 PlayerShootSystem() [1/2]

```
rtype::system::PlayerShootSystem::PlayerShootSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Player Shoot System object.

Parameters

entityManager	

3.44.2.2 PlayerShootSystem() [2/2]

```
rtype::system::PlayerShootSystem::PlayerShootSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Player Shoot System object.

Parameters

entityManager	

3.44.3 Member Function Documentation

3.44.3.1 handleEvent() [1/2]

```
void rtype::system::PlayerShootSystem::handleEvent (
            const engine::Event & event )  [inline], [virtual]
```

Handle the events of the Player Shoot System object.

Parameters

event	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

3.44.3.2 handleEvent() [2/2]

```
void rtype::system::PlayerShootSystem::handleEvent (
            const engine::Event & event )  [inline], [virtual]
```

Handle the events of the Player Shoot System object.

Parameters

event	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

- rtype-client/include/systems/PlayerShootSystem.hpp

3.45 rtype::QueueManager Class Reference

Public Member Functions

- void **pushInQueue** (NetworkEvent event)
- NetworkEvent **popEvent** ()
- bool **isEmpty** ()

Static Public Member Functions

- static QueueManager & **getInstance** ()

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

- game/include/QueueManager.hpp

3.46 rtype::ScoreManager Class Reference

Score manager class to manage the score.

`#include <ScoreManager.hpp>`

Public Member Functions

- ScoreManager (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Score Manager object.
- void displayScore (sf::RenderWindow &window)

  Display the score.
- void updateScore (int score)

  Update the score.
- int getScore () const

  Get the Score object.
- ScoreManager (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Score Manager object.
- void displayScore (sf::RenderWindow &window)

  Display the score.
- void updateScore (int score)

  Update the score.
- int getScore () const

  Get the Score object.

3.46.1 Detailed Description

Score manager class to manage the score.

3.46.2 Constructor & Destructor Documentation

3.46.2.1 ScoreManager() [1/2]

```
rtype::ScoreManager::ScoreManager (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )
```

Construct a new Score Manager object.

Parameters

entityManager	

3.46.2.2 ScoreManager() [2/2]

```
rtype::ScoreManager::ScoreManager (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )
```

Construct a new Score Manager object.

Parameters

entityManager	

3.46.3 Member Function Documentation

3.46.3.1 displayScore() [1/2]

```
void rtype::ScoreManager::displayScore (
            sf::RenderWindow & window )
```

Display the score.

Parameters

window	

3.46.3.2 displayScore() [2/2]

```
void rtype::ScoreManager::displayScore (
            sf::RenderWindow & window )
```

Display the score.

Parameters

window	

3.46.3.3 getScore() [1/2]

```
int rtype::ScoreManager::getScore ( ) const
```

Get the Score object.

Returns

int

3.46.3.4 getScore() [2/2]

```
int rtype::ScoreManager::getScore ( ) const
```

Get the Score object.

Returns

int

3.46.3.5 updateScore() [1/2]

```
void rtype::ScoreManager::updateScore (
            int score )
```

Update the score.

Parameters

score	

3.46.3.6 updateScore() [2/2]

```
void rtype::ScoreManager::updateScore (
            int score )
```

Update the score.

Parameters

score	

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

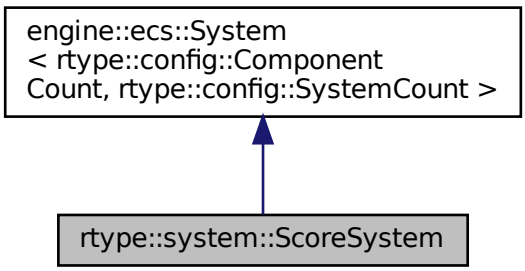
- rtype-client/include/ScoreManager.hpp

3.47 rtype::system::ScoreSystem Class Reference

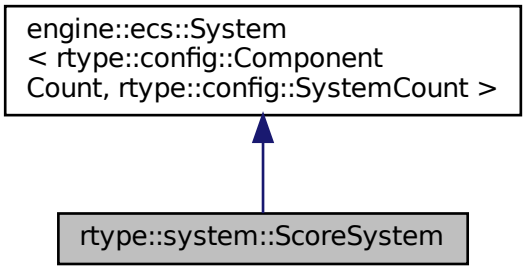
ScoreSystem class to have the score the players.

```
#include <ScoreSystem.hpp>
```

Inheritance diagram for rtype::system::ScoreSystem:



Collaboration diagram for rtype::system::ScoreSystem:



Public Member Functions

- ScoreSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager, rtype::ScoreManager scoreManager)

  Construct a new Score System object.
- void update (const float dt)

  Update the scoreSystem class have the score.
- void draw (engine::graphical::GraphicalWindow &window)

  Draw the score.

Additional Inherited Members

3.47.1 Detailed Description

ScoreSystem class to have the score the players.

3.47.2 Constructor & Destructor Documentation

3.47.2.1 ScoreSystem()

```
rtype::system::ScoreSystem::ScoreSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager,
            rtype::ScoreManager scoreManager )  [inline]
```

Construct a new Score System object.

Parameters

entityManager	
scoreManager	

3.47.3 Member Function Documentation

3.47.3.1 draw()

```
void rtype::system::ScoreSystem::draw (
            engine::graphical::GraphicalWindow & window )  [inline], [virtual]
```

Draw the score.

Parameters

window	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

3.47.3.2 update()

```
void rtype::system::ScoreSystem::update (
            const float dt )  [inline], [virtual]
```

Update the scoreSystem class have the score.

Parameters

dt	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

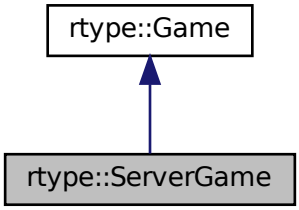
- game/include/systems/ScoreSystem.hpp

3.48 rtype::ServerGame Class Reference

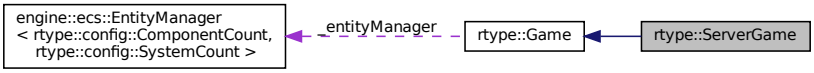
Instance of the server version of the game (without graphics but having all powers)

`#include <ServerGame.hpp>`

Inheritance diagram for rtype::ServerGame:



Collaboration diagram for rtype::ServerGame:



Public Member Functions

- ServerGame ()

  Constructs a game environment without any player.
- void gameLoop () override

  Game loop of the game to repeat while the game isn't over.
- bool isOver () override

  Says if the game is over or not.
- float getFps () const override

  Gets you the Fps.
- void handleEvent (rtype::NetworkEvent content) override

  Handle the events coming from the clients.
- void gameUpdate () override

  Update the game.

Additional Inherited Members

3.48.1 Detailed Description

Instance of the server version of the game (without graphics but having all powers)

3.48.2 Constructor & Destructor Documentation

3.48.2.1 ServerGame()

```
rtype::ServerGame::ServerGame ( )
```

Constructs a game environment without any player.

Parameters

queue	Queue of the server to fill if there are information to send to the clients

3.48.3 Member Function Documentation

3.48.3.1 getFps()

```
float rtype::ServerGame::getFps ( ) const  [override], [virtual]
```

Gets you the Fps.

Returns

Float representation the actual fps (always -1 for the server)

Implements rtype::Game.

3.48.3.2 handleEvent()

```
void rtype::ServerGame::handleEvent (
            rtype::NetworkEvent content )  [override], [virtual]
```

Handle the events coming from the clients.

Parameters

content	Package containing the information from the client

Implements rtype::Game.

3.48.3.3 isOver()

```
bool rtype::ServerGame::isOver ( )  [override], [virtual]
```

Says if the game is over or not.

Returns

Boolean that represent the game state

Implements rtype::Game.

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

- rtype-server/include/ServerGame.hpp

3.49 server::serverInstance Class Reference

Instance of server handling a game.

```
#include <serverInstance.hpp>
```

Public Member Functions

- serverInstance ()
  Create a server on port 2001.
- void lifeCycle ()
  Handle the life cycle of the server.

3.49.1 Detailed Description

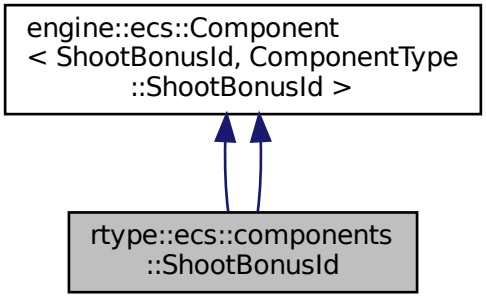
Instance of server handling a game.

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

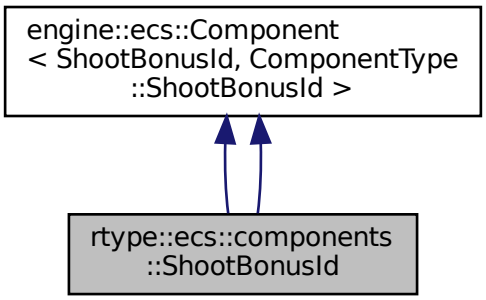
- rtype-server/include/serverInstance.hpp

3.50 rtype::ecs::components::ShootBonusId Struct Reference

Inheritance diagram for rtype::ecs::components::ShootBonusId:



Collaboration diagram for rtype::ecs::components::ShootBonusId:



Public Member Functions

- **ShootBonusId** (int shootBonusId)
- **ShootBonusId** (int shootBonusId)

Public Attributes

- int **id**

Additional Inherited Members

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

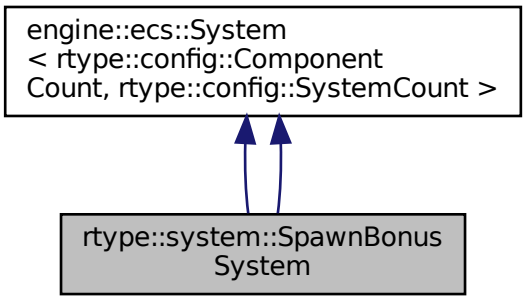
- rtype-client/include/Components.hpp

3.51 rtype::system::SpawnBonusSystem Class Reference

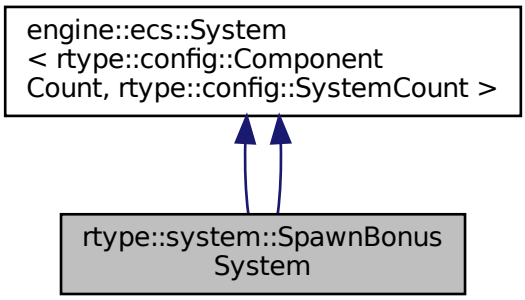
Clean entity system class to remove entities.

`#include <SpawnBonusSystem.hpp>`

Inheritance diagram for rtype::system::SpawnBonusSystem:



Collaboration diagram for rtype::system::SpawnBonusSystem:



Public Member Functions

- SpawnBonusSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::System↩ Count > &entityManager)

  Construct a new Clean Entity System object.
- void update (const float dt)

  Update the Spawn Bonus System object.
- SpawnBonusSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::System↩ Count > &entityManager)

  Construct a new Clean Entity System object.
- void update (const float dt)

  Update the Spawn Bonus System object.

Additional Inherited Members

3.51.1 Detailed Description

Clean entity system class to remove entities.

3.51.2 Constructor & Destructor Documentation

3.51.2.1 SpawnBonusSystem() [1/2]

```
rtype::system::SpawnBonusSystem::SpawnBonusSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Clean Entity System object.

Parameters

entityManager	

3.51.2.2 SpawnBonusSystem() [2/2]

```
rtype::system::SpawnBonusSystem::SpawnBonusSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Clean Entity System object.

Parameters

entityManager	

3.51.3 Member Function Documentation

3.51.3.1 update() [1/2]

```
void rtype::system::SpawnBonusSystem::update (
            const float dt )  [inline], [virtual]
```

Update the Spawn Bonus System object.

Parameters

dt	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

3.51.3.2 update() [2/2]

```
void rtype::system::SpawnBonusSystem::update (
            const float dt )  [inline], [virtual]
```

Update the Spawn Bonus System object.

Parameters

dt	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

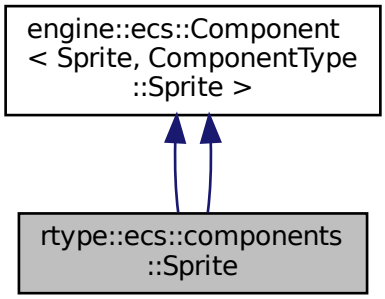
- rtype-client/include/systems/SpawnBonusSystem.hpp

3.52 rtype::ecs::components::Sprite Struct Reference

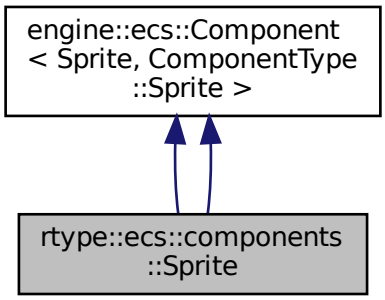
Sprite component.

```
#include <Components.hpp>
```

Inheritance diagram for rtype::ecs::components::Sprite:



Collaboration diagram for rtype::ecs::components::Sprite:



Public Member Functions

- **Sprite** (const sf::Texture &texture, int spriteLayer=0, sf::Vector2< float > scale=sf::Vector2< float >(1.0f, 1.0f))
- **Sprite** (const sf::Texture &texture, const sf::IntRect &rect, int spriteLayer=0, sf::Vector2< float > scale=sf↩ ::Vector2< float >(1.0f, 1.0f))
- **Sprite** (const sf::Sprite &sprite, int spriteLayer=0)
- **Sprite** (const sf::Texture &texture, int spriteLayer=0, sf::Vector2< float > scale=sf::Vector2< float >(1.0f, 1.0f))
- **Sprite** (const sf::Texture &texture, const sf::IntRect &rect, int spriteLayer=0, sf::Vector2< float > scale=sf↩ ::Vector2< float >(1.0f, 1.0f))
- **Sprite** (const sf::Sprite &sprite, int spriteLayer=0)

Public Attributes

- sf::Sprite **sprite**
- int **layer**

Additional Inherited Members

3.52.1 Detailed Description

Sprite component.

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

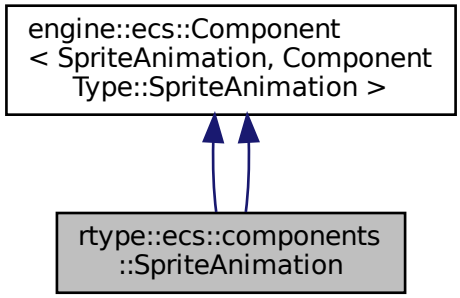
- rtype-client/include/Components.hpp

3.53 rtype::ecs::components::SpriteAnimation Struct Reference

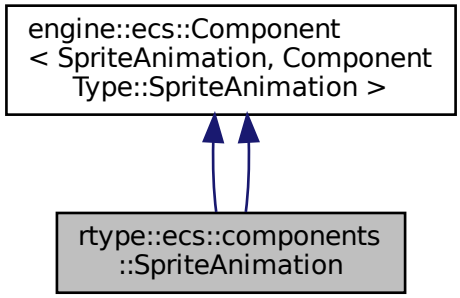
SpriteAnimation component.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::SpriteAnimation:



Collaboration diagram for rtype::ecs::components::SpriteAnimation:



Public Member Functions

- **SpriteAnimation** (sf::Sprite &sprite, float timePerFrame, std::vector< sf::IntRect > frames)
- **SpriteAnimation** (sf::Sprite &sprite, float timePerFrame, std::vector< sf::IntRect > frames)

Public Attributes

- std::vector< sf::IntRect > **frames**
- std::shared_ptr< sf::Sprite > **sprite**
- int **currentFrame** = 0
- float **timePerFrame**
- float **accumulatedTime** = 0

Additional Inherited Members

3.53.1 Detailed Description

SpriteAnimation component.

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

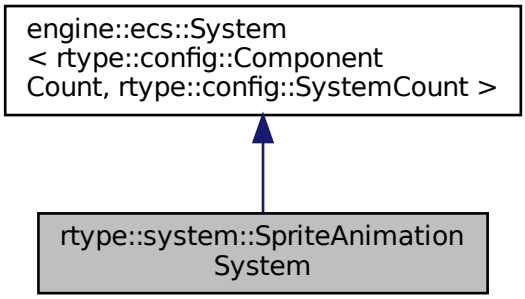
- rtype-client/include/Components.hpp

3.54 rtype::system::SpriteAnimationSystem Class Reference

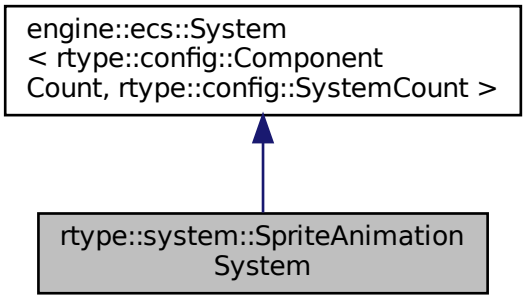
SpriteAnimation system class used to animate sprites.

`#include <SpriteAnimationSystem.hpp>`

Inheritance diagram for rtype::system::SpriteAnimationSystem:



Collaboration diagram for rtype::system::SpriteAnimationSystem:



Public Member Functions

- SpriteAnimationSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩ SystemCount > &entityManager)

  Construct a new Sprite Animation System object.
- void update (const float dt)

  Update the SpriteAnimation system.

Additional Inherited Members

3.54.1 Detailed Description

SpriteAnimation system class used to animate sprites.

3.54.2 Constructor & Destructor Documentation

3.54.2.1 SpriteAnimationSystem()

```
rtype::system::SpriteAnimationSystem::SpriteAnimationSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Sprite Animation System object.

Parameters

entityManager	

3.54.3 Member Function Documentation

3.54.3.1 update()

```
void rtype::system::SpriteAnimationSystem::update (
            const float dt )  [inline], [virtual]
```

Update the SpriteAnimation system.

Parameters

dt	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

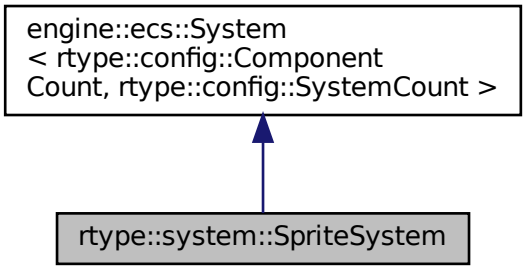
- rtype-client/include/systems/SpriteAnimationSystem.hpp

3.55 rtype::system::SpriteSystem Class Reference

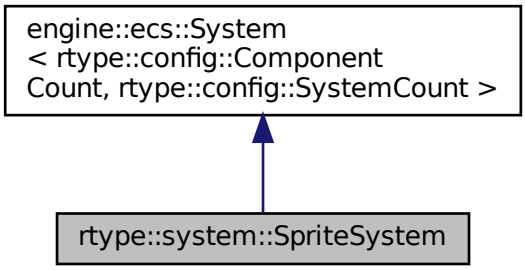
SpriteSystem class used to draw the sprites of the game.

```
#include <SpriteSystem.hpp>
```

Inheritance diagram for rtype::system::SpriteSystem:



Collaboration diagram for rtype::system::SpriteSystem:



Public Member Functions

- SpriteSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::SystemCount > &entityManager)

  Construct a new Sprite System object.
- void draw (engine::graphical::GraphicalWindow &window)

  Draw the sprites.

Additional Inherited Members

3.55.1 Detailed Description

SpriteSystem class used to draw the sprites of the game.

3.55.2 Constructor & Destructor Documentation

3.55.2.1 SpriteSystem()

```
rtype::system::SpriteSystem::SpriteSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Sprite System object.

Parameters

entityManager	

3.55.3 Member Function Documentation

3.55.3.1 draw()

```
void rtype::system::SpriteSystem::draw (
            engine::graphical::GraphicalWindow & window )  [inline], [virtual]
```

Draw the sprites.

Parameters

window	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

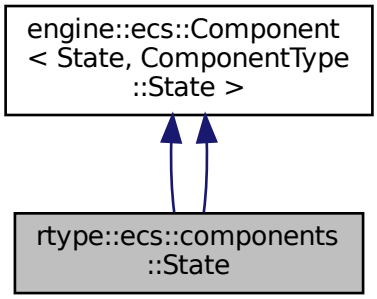
- rtype-client/include/systems/SpriteSystem.hpp

3.56 rtype::ecs::components::State Struct Reference

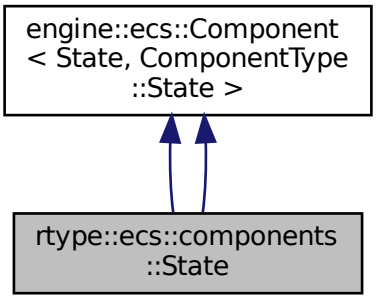
State struct which contains the state of the entity.

`#include <Components.hpp>`

Inheritance diagram for rtype::ecs::components::State:



Collaboration diagram for rtype::ecs::components::State:



Public Attributes

- bool **toRemove**

Additional Inherited Members

3.56.1 Detailed Description

State struct which contains the state of the entity.

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

- rtype-client/include/Components.hpp

3.57 engine::ecs::System< ComponentCount, SystemCount > Class Template Reference

BaseSystem Interface used to store systems.

`#include <System.hpp>`

Protected Member Functions

- template<typename... Ts>
  void setRequirements ()

  Set the Requirements object.
- const std::vector< Entity > & getManagedEntities () const

  Get the Managed Entities object.
- virtual void onManagedEntityAdded ([[maybe_unused]] Entity entity)

  Add an entity to the system.
- virtual void onManagedEntityRemoved ([[maybe_unused]] Entity entity)

  Remove an entity from the system.
- virtual void update (const float dt)

  Update the system.
- virtual void draw (engine::graphical::GraphicalWindow &window)

  Draw the system.
- virtual void handleEvent (const Event &event)

  Handle an event.

3.57.1 Detailed Description

template<std::size_t ComponentCount, std::size_t SystemCount>
class engine::ecs::System< ComponentCount, SystemCount >

BaseSystem Interface used to store systems.

Template Parameters

ComponentCount	
SystemCount	

3.57.2 Member Function Documentation

3.57.2.1 draw()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
virtual void engine::ecs::System< ComponentCount, SystemCount >::draw (
            engine::graphical::GraphicalWindow & window )  [inline], [protected], [virtual]
```

Draw the system.

Parameters

window	

Reimplemented in rtype::system::SpriteSystem, and rtype::system::ScoreSystem.

3.57.2.2 getManagedEntities()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
const std::vector<Entity>& engine::ecs::System< ComponentCount, SystemCount >::getManaged↩
Entities ( ) const  [inline], [protected]
```

Get the Managed Entities object.

Returns

const std::vector<Entity>&

3.57.2.3 handleEvent()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
virtual void engine::ecs::System< ComponentCount, SystemCount >::handleEvent (
            const Event & event )  [inline], [protected], [virtual]
```

Handle an event.

Parameters

event	

Reimplemented in rtype::system::PlayerShootSystem, rtype::system::PlayerShootSystem, and rtype::system::MovementSystem.

3.57.2.4 onManagedEntityAdded()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
virtual void engine::ecs::System< ComponentCount, SystemCount >::onManagedEntityAdded (
            [[maybe_unused] ] Entity entity )  [inline], [protected], [virtual]
```

Add an entity to the system.

Parameters

entity	

3.57.2.5 onManagedEntityRemoved()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
```

```
virtual void engine::ecs::System< ComponentCount, SystemCount >::onManagedEntityRemoved (
            [[maybe_unused] ] Entity entity )  [inline], [protected], [virtual]
```

Remove an entity from the system.

Parameters

entity	

3.57.2.6 setRequirements()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
template<typename...  Ts>
void engine::ecs::System< ComponentCount, SystemCount >::setRequirements ( )  [inline], [protected]
```

Set the Requirements object.

Template Parameters

Ts	

3.57.2.7 update()

```
template<std::size_t ComponentCount, std::size_t SystemCount>
virtual void engine::ecs::System< ComponentCount, SystemCount >::update (
            const float dt )  [inline], [protected], [virtual]
```

Update the system.

Parameters

dt	

Reimplemented in rtype::system::SpawnBonusSystem, rtype::system::HealthSystem, rtype::system::EnemyShootSystem, rtype::system::BossHiveShootSystem, rtype::system::BossAlienShootSystem, rtype::system::SpriteAnimationSystem, rtype::system::SpawnBonusSystem, rtype::system::HealthSystem, rtype::system::EnemyShootSystem, rtype::system::BossHiveShoc rtype::system::BossAlienShootSystem, rtype::system::TransformSystem, rtype::system::ScoreSystem, rtype::system::ParallaxSystem rtype::system::LevelSystem, rtype::system::CollisionSystem, and rtype::system::CleanEntitySystem.

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

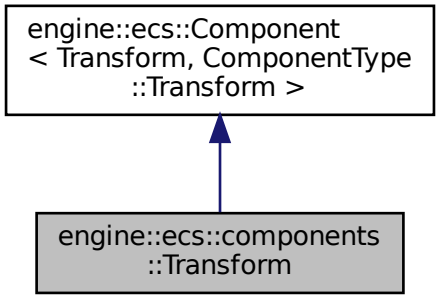
- engine/include/ecs/System.hpp

3.58 engine::ecs::components::Transform Struct Reference

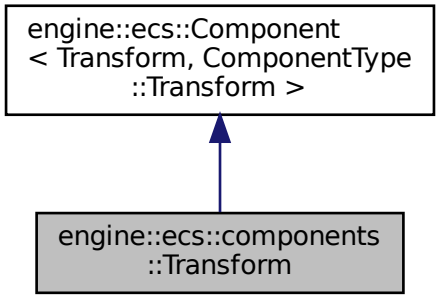
Transform component.

`#include <Components.hpp>`

Inheritance diagram for engine::ecs::components::Transform:



Collaboration diagram for engine::ecs::components::Transform:



Public Member Functions

- **Transform** (float X=0.0, float Y=0.0)

Public Attributes

- float **x**
- float **y**
- float **prevX**
- float **prevY**

Additional Inherited Members

3.58.1 Detailed Description

Transform component.

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

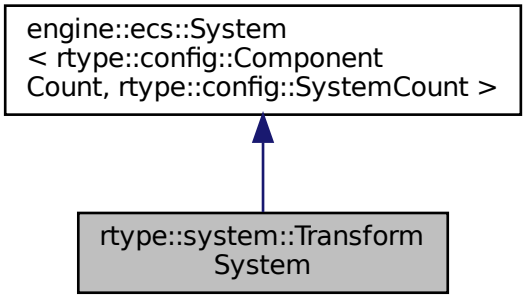
- engine/include/ecs/Components.hpp

3.59 rtype::system::TransformSystem Class Reference

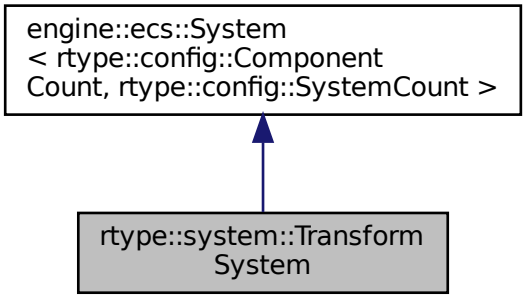
TransformSystem class used to update the position of the entities.

`#include <TransformSystem.hpp>`

Inheritance diagram for rtype::system::TransformSystem:



Collaboration diagram for rtype::system::TransformSystem:



Public Member Functions

- TransformSystem (engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::System↩ Count > &entityManager)

  Construct a new Transform System object.
- void update (const float dt)

  Update the Transform System object.

Additional Inherited Members

3.59.1 Detailed Description

TransformSystem class used to update the position of the entities.

3.59.2 Constructor & Destructor Documentation

3.59.2.1 TransformSystem()

```
rtype::system::TransformSystem::TransformSystem (
            engine::ecs::EntityManager< rtype::config::ComponentCount, rtype::config::↩
SystemCount > & entityManager )  [inline]
```

Construct a new Transform System object.

Parameters

entityManager	

3.59.3 Member Function Documentation

3.59.3.1 update()

```
void rtype::system::TransformSystem::update (
            const float dt )  [inline], [virtual]
```

Update the Transform System object.

Parameters

dt	

Reimplemented from engine::ecs::System< rtype::config::ComponentCount, rtype::config::SystemCount >.

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

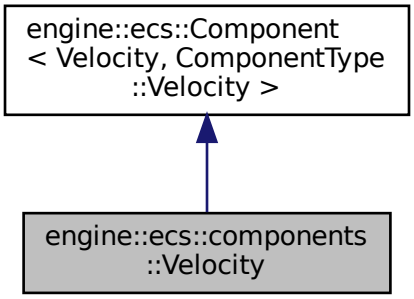
- game/include/systems/TransformSystem.hpp

3.60 engine::ecs::components::Velocity Struct Reference

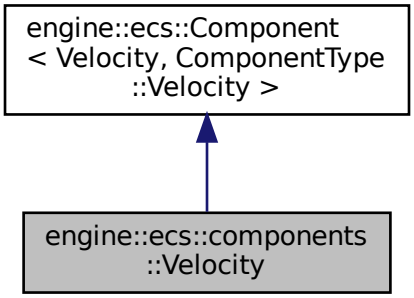
Velocity component.

`#include <Components.hpp>`

Inheritance diagram for engine::ecs::components::Velocity:



Collaboration diagram for engine::ecs::components::Velocity:



Public Member Functions

- **Velocity** (float X=0.0, float Y=0.0)

Public Attributes

- float **x**
- float **y**

Additional Inherited Members

3.60.1 Detailed Description

Velocity component.

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

- engine/include/ecs/Components.hpp

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