raytracer

0.1.0

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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

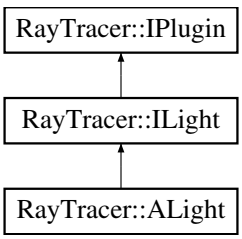
Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 3

Class Documentation

3.1 RayTracer::ALight Class Reference

Inheritance diagram for RayTracer::ALight:



Public Member Functions

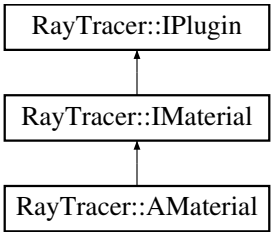
- void **setType** (const LightType &type) override
- LightType **getType** () const override
- Vector & **getPosition** () override
- Color & **getColor** () override

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

- App/include/RayTracer/Abstraction/ALight.hpp

3.2 RayTracer::AMaterial Class Reference

Inheritance diagram for RayTracer::AMaterial:



Public Member Functions

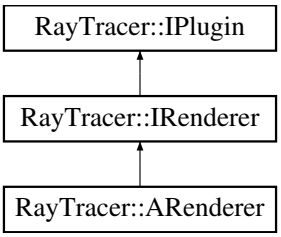
- void **setType** (const MaterialType &type) override
- void **setReflectivity** (const uint8_t &reflectivity) override
- void **setTransparency** (const uint8_t &transparency) override
- MaterialType **getType** () const override
- Color & **getColor** () override
- float **getReflectivity** () const override
- float **getTransparency** () const override

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

- App/include/RayTracer/Abstraction/AMaterial.hpp

3.3 RayTracer::ARenderer Class Reference

Inheritance diagram for RayTracer::ARenderer:



Public Member Functions

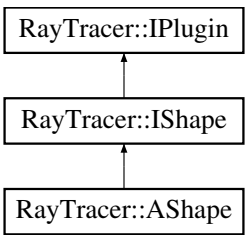
- void **setType** (const RendererType &rendererType) override
- void **setName** (const std::string &name) override
- RendererType **getType** () const override
- Resolution & **getResolution** () override
- std::string **getName** () const override

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

- App/include/RayTracer/Abstraction/ARenderer.hpp

3.4 RayTracer::AShape Class Reference

Inheritance diagram for RayTracer::AShape:



Public Member Functions

- void **setType** (const ShapeType &type) override
- void **setRadius** (int16_t radius) override
- void **setMaterial** (std::unique_ptr< AMaterial > material) override
- ShapeType **getType** () const override
- AMaterial * **getMaterial** () const override
- Vector & **getPosition** () override
- int16_t **getRadius** () const override

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

- App/include/RayTracer/Abstraction/AShape.hpp

3.5 RayTracer::Camera Class Reference

Public Member Functions

- **Camera** (uint16_t fov, Vector position, Vector direction, Vector up)
- void **setFov** (const uint16_t &fov)
- uint16_t **getFov** () const
- Vector & **getPosition** ()
- Vector & **getDirection** ()
- Vector & **getUp** ()

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

- App/include/RayTracer/Scene/Camera.hpp

3.6 RayTracer::Color Class Reference

Public Member Functions

- **Color** (const uint8_t &r, const uint8_t &g, const uint8_t &b)
- **Color** (const color_t &color)
- void **setColor** (const uint8_t &r, const uint8_t &g, const uint8_t &b)
- void **setColor** (const color_t &color)
- color_t **getValue** () const

Static Public Member Functions

- static color_t **customColor** (const uint8_t &r, const uint8_t &g, const uint8_t &b)
- static constexpr color_t **getRed** ()
- static constexpr color_t **getGreen** ()
- static constexpr color_t **getBlue** ()
- static constexpr color_t **getWhite** ()
- static constexpr color_t **getBlack** ()
- static constexpr color_t **getYellow** ()
- static constexpr color_t **getMagenta** ()
- static constexpr color_t **getCyan** ()
- static constexpr color_t **getGray** ()
- static constexpr color_t **getOrange** ()
- static constexpr color_t **getBrown** ()
- static constexpr color_t **getLightBlue** ()
- static constexpr color_t **getLightGreen** ()
- static constexpr color_t **getLightPink** ()
- static constexpr color_t **getLightYellow** ()
- static constexpr color_t **getLightGray** ()
- static constexpr color_t **getDarkGray** ()
- static constexpr color_t **getDarkRed** ()
- static constexpr color_t **getDarkGreen** ()
- static constexpr color_t **getDarkBlue** ()
- static constexpr color_t **getDarkYellow** ()

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

- App/include/RayTracer/Utils/Color.hpp

3.7 RayTracer::Core Class Reference

Classes

- class CoreException

Static Public Member Functions

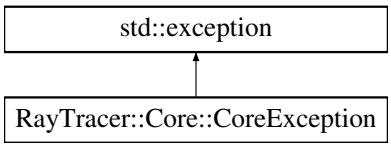
- static void **runRayTracer** (const Scene &scene)

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

- App/include/RayTracer/Core.hpp

3.8 RayTracer::Core::CoreException Class Reference

Inheritance diagram for RayTracer::Core::CoreException:



Public Member Functions

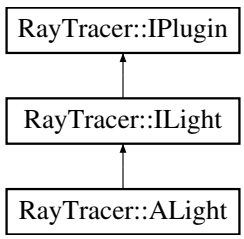
- **CoreException** (std::string msg)
- **CoreException** (const CoreException &)=delete
- CoreException & **operator=** (const CoreException &)=delete
- **CoreException** (const CoreException &&)=delete
- CoreException & **operator=** (const CoreException &&)=delete
- const char * **what** () const noexcept override

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

- App/include/RayTracer/Core.hpp

3.9 RayTracer::ILight Class Reference

Inheritance diagram for RayTracer::ILight:



Public Member Functions

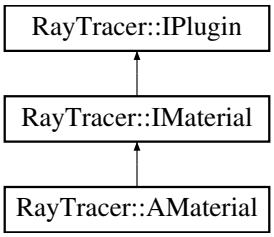
- virtual void **setType** (const LightType &type)=0
- virtual LightType **getType** () const =0
- virtual Vector & **getPosition** ()=0
- virtual Color & **getColor** ()=0

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

- App/include/RayTracer/Abstraction/ILight.hpp

3.10 RayTracer::IMaterial Class Reference

Inheritance diagram for RayTracer::IMaterial:



Public Member Functions

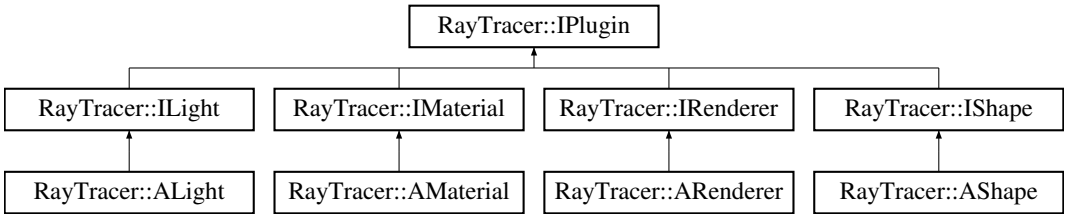
- virtual void **setType** (const MaterialType &type)=0
- virtual void **setReflectivity** (const uint8_t &reflectivity)=0
- virtual void **setTransparency** (const uint8_t &transparency)=0
- virtual MaterialType **getType** () const =0
- virtual Color & **getColor** ()=0
- virtual float **getReflectivity** () const =0
- virtual float **getTransparency** () const =0

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

- App/include/RayTracer/Abstraction/IMaterial.hpp

3.11 RayTracer::IPlugin Class Reference

Inheritance diagram for RayTracer::IPlugin:



Public Member Functions

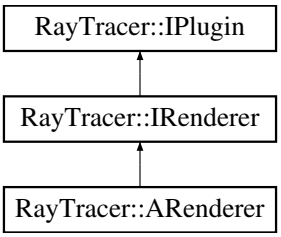
- virtual std::string **getPluginName** () const =0

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

- App/include/RayTracer/Abstraction/IPlugin.hpp

3.12 RayTracer::IRenderer Class Reference

Inheritance diagram for RayTracer::IRenderer:



Public Member Functions

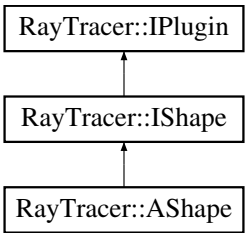
- virtual void **render** ()=0
- virtual void **setType** (const RendererType &rendererType)=0
- virtual void **setName** (const std::string &name)=0
- virtual RendererType **getType** () const =0
- virtual std::string **getName** () const =0
- virtual Resolution & **getResolution** ()=0

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

- App/include/RayTracer/Abstraction/IRenderer.hpp

3.13 RayTracer::IShape Class Reference

Inheritance diagram for RayTracer::IShape:



Public Member Functions

- virtual void **setType** (const ShapeType &type)=0
- virtual void **setRadius** (int16_t radius)=0
- virtual void **setMaterial** (std::unique_ptr< AMaterial > material)=0
- virtual ShapeType **getType** () const =0
- virtual AMaterial * **getMaterial** () const =0
- virtual Vector & **getPosition** ()=0
- virtual int16_t **getRadius** () const =0

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

- App/include/RayTracer/Abstraction/IShape.hpp

3.14 RayTracer::LightsFactory Class Reference

Static Public Member Functions

- static std::unique_ptr< ALight > **createLights** (const LightType &type, const Vector &position, const Color &color)

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

- App/include/RayTracer/Factory/LightsFactory.hpp

3.15 RayTracer::MaterialsFactory Class Reference

Static Public Member Functions

- static std::unique_ptr< AMaterial > **createMaterials** (const MaterialType &type, const Color &color)

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

- App/include/RayTracer/Factory/MaterialsFactory.hpp

3.16 RayTracer::Parser Class Reference

Classes

- class ParserException

Static Public Member Functions

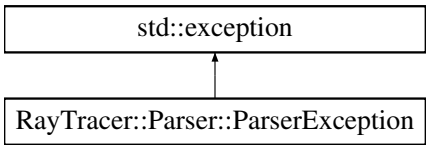
- static int **parseArgs** (const std::string &filePath)
- static std::unique_ptr< RayTracer::Scene > **parseFile** (const std::string &filePath)
- static void **parseRenderer** (const libconfig::Setting &renderer, Scene &scene)
- static void **parseCamera** (const libconfig::Setting &camera, Scene &scene)
- static void **parseShapes** (const libconfig::Setting &shapesSetting, Scene &scene)
- static void **parseLights** (const libconfig::Setting &lightsSetting, Scene &scene)
- static Vector **getVector** (const libconfig::Setting &setting)
- template<typename T >
  static T **convertInt** (const libconfig::Setting &setting)

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

- App/include/RayTracer/Parser.hpp

3.17 RayTracer::Parser::ParserException Class Reference

Inheritance diagram for RayTracer::Parser::ParserException:



Public Member Functions

- **ParserException** (std::string msg)
- **ParserException** (const ParserException &)=delete
- ParserException & **operator=** (const ParserException &)=delete
- **ParserException** (const ParserException &&)=delete
- ParserException & **operator=** (const ParserException &&)=delete
- const char * **what** () const noexcept override

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

- App/include/RayTracer/Parser.hpp

3.18 RayTracer::PluginLoader Class Reference

Public Types

- using **PluginCreator** = std::unique_ptr< IPlugin >(*)()

Public Member Functions

- template<typename T >
  std::unique_ptr< T > **getPlugin** (const std::string &pluginName)

Static Public Member Functions

- static PluginLoader & **getInstance** ()

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

- App/include/RayTracer/Loader/PluginLoader.hpp

3.19 RayTracer::RenderersFactory Class Reference

Static Public Member Functions

- static std::unique_ptr< ARenderer > **createRenderer** (const RendererType &type, const std::string &name, const Resolution &resolution)

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

- App/include/RayTracer/Factory/RenderersFactory.hpp

3.20 RayTracer::Resolution Class Reference

Public Member Functions

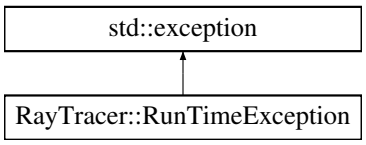
- **Resolution** (const uint16_t &width, const uint16_t &height)
- **Resolution** (const resolution_t &resolution)
- void **setWidth** (const uint16_t &width)
- void **setHeight** (const uint16_t &height)
- void **setResolution** (const uint16_t &width, const uint16_t &height)
- void **setResolution** (const resolution_t &resolution)
- uint16_t **getWidth** () const
- uint16_t **getHeight** () const
- resolution_t **getValue** () const

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

- App/include/RayTracer/Utils/Resolution.hpp

3.21 RayTracer::RunTimeException Class Reference

Inheritance diagram for RayTracer::RunTimeException:



Public Member Functions

- **RunTimeException** (std::string msg)
- **RunTimeException** (const RunTimeException &)=delete
- RunTimeException & **operator=** (const RunTimeException &)=delete
- **RunTimeException** (const RunTimeException &&)=delete
- RunTimeException & **operator=** (const RunTimeException &&)=delete
- const char * **what** () const noexcept override

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

- App/include/RayTracer/Exceptions/RuntimeException.hpp

3.22 RayTracer::Scene Class Reference

Public Member Functions

- void **setCamera** (const Camera &camera)
- void **setRenderer** (std::unique_ptr< ARenderer > renderer)
- void **addShape** (std::unique_ptr< AShape > shape)
- void **addLight** (std::unique_ptr< ALight > light)
- void **addMaterial** (std::unique_ptr< AMaterial > material)
- Camera **getCamera** () const
- const std::unique_ptr< ARenderer > & **getRenderer** () const
- const std::vector< std::unique_ptr< AShape > > & **getShapes** () const
- const std::vector< std::unique_ptr< ALight > > & **getLights** () const
- const std::vector< std::unique_ptr< AMaterial > > & **getMaterials** () const

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

- App/include/RayTracer/Scene/Scene.hpp

3.23 RayTracer::ShapesFactory Class Reference

Static Public Member Functions

- static std::unique_ptr< AShape > **createShape** (const ShapeType &type, const Vector &position)
- static std::unique_ptr< AShape > **createShape** (const ShapeType &type, const Vector &position, int16_t &radius)

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

- App/include/RayTracer/Factory/ShapesFactory.hpp

3.24 RayTracer::Vector Class Reference

Public Member Functions

- **Vector** (const int16_t &x, const int16_t &y, const int16_t &z)
- **Vector** (const vector_t &position)
- void **setX** (const int16_t &x)
- void **setY** (const int16_t &y)
- void **setZ** (const int16_t &z)
- void **setPosition** (const int16_t &x, const int16_t &y, const int16_t &z)
- void **setPosition** (const vector_t &position)
- int16_t **getX** () const
- int16_t **getY** () const
- int16_t **getZ** () const
- vector_t **getValue** () const
- Vector **operator+** (const Vector &other) const
- Vector **operator-** (const Vector &other) const
- double **length** () const
- int **dot** (const Vector &other) const
- Vector **cross** (const Vector &other) const
- Vector **normalize** () const

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

- App/include/RayTracer/Utils/Vector.hpp

Index