raytracer

0.1.0

Generated by Doxygen 1.9.1

1 Hierarchical Index 1

1.1 Class Hierarchy . . . 1

2 Class Index 3

2.1 Class List . . . 3

3 Class Documentation 5

3.1 RayTracer::ALight Class Reference . . . 5
3.2 RayTracer::AMaterial Class Reference . . . 5
3.3 RayTracer::ARenderer Class Reference . . . 6
3.4 RayTracer::AShape Class Reference . . . 6
3.5 RayTracer::Camera Class Reference . . . 7
3.6 RayTracer::Core Class Reference . . . 7
3.7 RayTracer::Core::CoreException Class Reference . . . 8
3.8 RayTracer::ILight Class Reference . . . 8
3.9 RayTracer::IMaterial Class Reference . . . 9
3.10 RayTracer::IRenderer Class Reference . . . 9
3.11 RayTracer::IShape Class Reference . . . 10
3.12 RayTracer::MaterialsFactory Class Reference . . . 10
3.13 RayTracer::Parser Class Reference . . . 10
3.14 RayTracer::Parser::ParserException Class Reference . . . 11
3.15 RayTracer::PluginLoader Class Reference . . . 11
3.16 RayTracer::Position Class Reference . . . 11
3.17 RayTracer::RendererFactory Class Reference . . . 12
3.18 RayTracer::Resolution Class Reference . . . 12
3.19 RayTracer::RGBColor Class Reference . . . 12
3.20 RayTracer::RunTimeException Class Reference . . . 13
3.21 RayTracer::Scene Class Reference . . . 14
3.22 RayTracer::ShapesFactory Class Reference . . . 14

Index 15

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

RayTracer::Camera . . . 7
RayTracer::Core . . . 7
std::exception
  RayTracer::Core::CoreException . . . 8
  RayTracer::Parser::ParserException . . . 11
  RayTracer::RunTimeException . . . 13
RayTracer::ILight . . . 8
  RayTracer::ALight . . . 5
RayTracer::IMaterial . . . 9
  RayTracer::AMaterial . . . 5
RayTracer::IRenderer . . . 9
  RayTracer::ARenderer . . . 6
RayTracer::IShape . . . 10
  RayTracer::AShape . . . 6
RayTracer::MaterialsFactory . . . 10
RayTracer::Parser . . . 10
RayTracer::PluginLoader . . . 11
RayTracer::Position . . . 11
RayTracer::RendererFactory . . . 12
RayTracer::Resolution . . . 12
RayTracer::RGBColor . . . 12
RayTracer::Scene . . . 14
RayTracer::ShapesFactory . . . 14

Chapter 2

Class Index

2.1 Class List

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

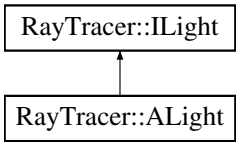
RayTracer::ALight 5
RayTracer::AMaterial 5
RayTracer::ARenderer 6
RayTracer::AShape 6
RayTracer::Camera 7
RayTracer::Core 7
RayTracer::Core::CoreException 8
RayTracer::ILight 8
RayTracer::IMaterial 9
RayTracer::IRenderer 9
RayTracer::IShape 10
RayTracer::MaterialsFactory 10
RayTracer::Parser 10
RayTracer::Parser::ParserException 11
RayTracer::PluginLoader 11
RayTracer::Position 11
RayTracer::RendererFactory 12
RayTracer::Resolution 12
RayTracer::RGBColor 12
RayTracer::RunTimeException 13
RayTracer::Scene 14
RayTracer::ShapesFactory 14

Chapter 3

Class Documentation

3.1 RayTracer::ALight Class Reference

Inheritance diagram for RayTracer::ALight:



Public Member Functions

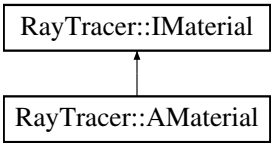
- void **setType** (const LightType &type) override
- LightType **getType** () const override
- Position **getPosition** () const override
- RGBColor **getColor** () const override

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

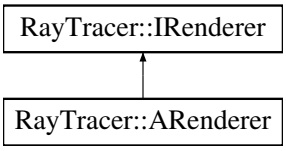
- void **setType** (const MaterialType &type) override
- void **setReflectivity** (const uint8_t &reflectivity) override
- void **setTransparency** (const uint8_t &transparency) override
- MaterialType **getType** () const override
- RGBColor **getColor** () const override
- float **getReflectivity**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

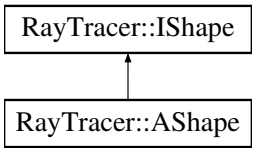
- void **setType** (const RendererType &rendererType) override
- void **setName** (const std::string &name) override
- RendererType **getType** () const override
- Resolution **getResolution** () const override
- std::string **getName** () const override

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** (float radius) override
- void **setMaterial** (AMaterial ∗material) override
- ShapeType **getType** () const override
- AMaterial **getMaterial** () const override
- Position **getPosition** () const override
- float **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

- void **setFov** (const uint16_t &fov)
- uint16_t **getFov** () const
- Position **getPosition** () const

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

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

3.6 RayTracer::Core Class Reference

Classes

- class CoreException

Static Public Member Functions

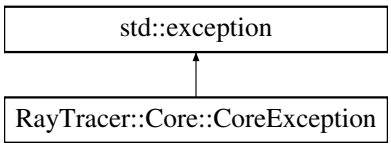
- static void **runRayTracer** (const Scene &scene)

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

- App/include/RayTracer/Core.hpp

3.7 RayTracer::Core::CoreException Class Reference

Inheritance diagram for RayTracer::Core::CoreException:



Public Member Functions

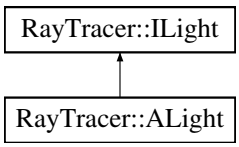
- **CoreException** (std::string msg)
- **CoreException** (const CoreException &)=delete
- CoreException & **operator=** (const CoreException &)=delete
- **CoreException** (const CoreException &&)=delete
- CoreException & **operator=** (const CoreException &&)=delete
- const char * **what** () const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

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

- App/include/RayTracer/Core.hpp

3.8 RayTracer::ILight Class Reference

Inheritance diagram for RayTracer::ILight:



Public Member Functions

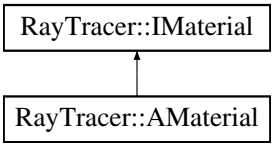
- virtual void **setType** (const LightType &type)=0
- virtual LightType **getType** () const =0
- virtual Position **getPosition** () const =0
- virtual RGBColor **getColor** () const =0

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

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

3.9 RayTracer::IMaterial Class Reference

Inheritance diagram for RayTracer::IMaterial:



Public Member Functions

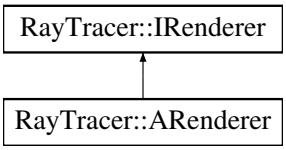
- virtual void **setType** (const MaterialType &type)=0
- virtual void **setReflectivity** (const uint8_t &reflectivity)=0
- virtual void **setTransparency** (const uint8_t &transparency)=0
- virtual MaterialType **getType** () const =0
- virtual RGBColor **getColor** () const =0
- virtual float **getReflectivity**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

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

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

3.10 RayTracer::IRenderer Class Reference

Inheritance diagram for RayTracer::IRenderer:



Public Member Functions

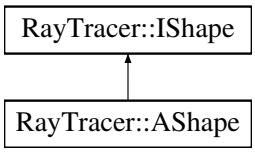
- virtual void **render** ()=0
- virtual void **setType** (const RendererType &rendererType)=0
- virtual void **setName** (const std::string &name)=0
- virtual RendererType **getType** () const =0
- virtual Resolution **getResolution** () const =0
- virtual std::string **getName** () const =0

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

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

3.11 RayTracer::IShape Class Reference

Inheritance diagram for RayTracer::IShape:



Public Member Functions

- virtual void **setType** (const ShapeType &type)=0
- virtual void **setRadius** (float radius)=0
- virtual void **setMaterial** (AMaterial ∗material)=0
- virtual ShapeType **getType** () const =0
- virtual AMaterial **getMaterial** () const =0
- virtual Position **getPosition** () const =0
- virtual float **getRadius** () const =0

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

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

3.12 RayTracer::MaterialsFactory Class Reference

Static Public Member Functions

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

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

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

3.13 RayTracer::Parser Class Reference

Classes

- class ParserException

Static Public Member Functions

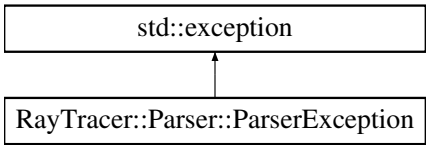
- static int **parseArgs** (const std::string &filePath)
- static std::unique_ptr< RayTracer::Scene > **parseFile** (const std::string &filePath)
- static void **parseRenderer** (const libconfig::Setting &renderer, Scene &scene)

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

- App/include/RayTracer/Parser.hpp

3.14 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

3.15 RayTracer::PluginLoader Class Reference

Static Public Member Functions

- template<typename T >
  static std::unique_ptr< T > **loadPlugin** (const std::string &libraryPath)

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

- App/include/RayTracer/PluginLoader.hpp

3.16 RayTracer::Position Class Reference

Public Member Functions

- **Position** (const int16_t &x, const int16_t &y, const int16_t &z)
- **Position** (const Position_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 Position_t &position)
- int16_t **getX** () const
- int16_t **getY** () const
- int16_t **getZ** () const
- Position_t **getPosition** () const

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

- App/include/RayTracer/Position.hpp

3.17 RayTracer::RendererFactory Class Reference

Static Public Member Functions

- static std::unique_ptr< ALight > **createLights** (const LightType &type, const Position_t &position)
- static std::unique_ptr< ARenderer > **createRenderer** (const RendererType &type)

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

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

3.18 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 **getResolution** () const

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

- App/include/RayTracer/Resolution.hpp

3.19 RayTracer::RGBColor Class Reference

Public Member Functions

- **RGBColor** (const uint8_t &r, const uint8_t &g, const uint8_t &b)
- **RGBColor** (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 **getColor** () const

Static Public Member Functions

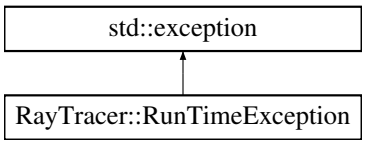
- static Color_t **customColor** (const uint8_t &r, const uint8_t &g, const uint8_t &b)
- static Color_t **getRed** ()
- static Color_t **getGreen** ()
- static Color_t **getBlue** ()
- static Color_t **getWhite** ()
- static Color_t **getBlack** ()
- static Color_t **getYellow** ()
- static Color_t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

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

- App/include/RayTracer/RGBColor.hpp

3.20 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

3.21 RayTracer::Scene Class Reference

Public Member Functions

- void **setCamera** (const Camera &camera)
- void **setRenderer** (const RendererType &rendererType)
- 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

3.22 RayTracer::ShapesFactory Class Reference

Static Public Member Functions

- static std::unique_ptr< AShape > **createShape** (const ShapeType &type, const Position_t &position, const Color_t &color)
- static std::unique_ptr< AShape > **createShape** (const ShapeType &type, const Position_t &position, const Color_t &color, float radius)

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

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

Index

RayTracer::ALight, 5
RayTracer::AMaterial, 5
RayTracer::ARenderer, 6
RayTracer::AShape, 6
RayTracer::Camera, 7
RayTracer::Core, 7
RayTracer::Core::CoreException, 8
RayTracer::ILight, 8
RayTracer::IMaterial, 9
RayTracer::IRenderer, 9
RayTracer::IShape, 10
RayTracer::MaterialsFactory, 10
RayTracer::Parser, 10
RayTracer::Parser::ParserException, 11
RayTracer::PluginLoader, 11
RayTracer::Position, 11
RayTracer::RendererFactory, 12
RayTracer::Resolution, 12
RayTracer::RGBColor, 12
RayTracer::RunTimeException, 13
RayTracer::Scene, 14
RayTracer::ShapesFactory, 14