

raytracer

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

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Chapter 2

Class Index

2.1 Class List

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

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Chapter 3

Class Documentation

3.1 RayTracer::Camera_t Struct Reference

Public Attributes

- `std::tuple< u_int16_t, u_int16_t, u_int16_t > position {0, 0, 0}`
- `u_int16_t fov {0}`

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

- `App/include/RayTracer/Parser.hpp`

3.2 Arcade::Clock Class Reference

Public Types

- using `TimePoint` = `std::chrono::time_point< std::chrono::high_resolution_clock >`
TimePoint is a type alias for a time point which is a very long and complicated type in the standard library.

Public Member Functions

- `Clock ()`
Construct a new `Clock` object.
- `void restart ()`
Restart the clock.
- `void pause ()`
Pause the clock.
- `void resume ()`
Resume the clock.
- `Time getElapsedTime () const`
Get the elapsed time since the last restart.

3.2.1 Member Function Documentation

3.2.1.1 getElapsedTime()

```
Time Arcade::Clock::getElapsedTime ( ) const
```

Get the elapsed time since the last restart.

Returns

[Time](#) The elapsed time

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

- App/include/RayTracer/Clock/Clock.hpp

3.3 RayTracer::Cone_t Struct Reference

Public Attributes

- std::string **material**
- std::tuple< u_int16_t, u_int16_t, u_int16_t > **position** {0, 0, 0}
- u_int8_t **radius** {0}
- u_int16_t **height**

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

- App/include/RayTracer/Parser.hpp

3.4 RayTracer::Core Class Reference

Classes

- class [CoreException](#)

Public Member Functions

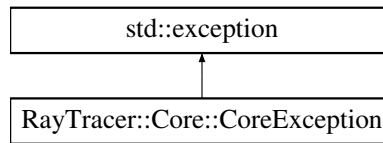
- void **runRayTracer** (const [Scene](#) &scene)

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

- App/include/RayTracer/Core.hpp

3.5 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

3.6 RayTracer::Cylinder_t Struct Reference

Public Attributes

- std::string **material**
- std::tuple< u_int16_t, u_int16_t, u_int16_t > **position** {0, 0, 0}
- u_int8_t **radius** {0}
- u_int16_t **height**

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

- App/include/RayTracer/Parser.hpp

3.7 RayTracer::ILights Class Reference

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

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

3.8 RayTracer::IPrimitives Class Reference

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

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

3.9 RayTracer::IRenderer Class Reference

Public Member Functions

- virtual void **render** (const [Scene](#) &scene)=0

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

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

3.10 RayTracer::IShapes Class Reference

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

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

3.11 RayTracer::Light_t Struct Reference

Public Attributes

- std::tuple< u_int16_t, u_int16_t, u_int16_t > **position** {0, 0, 0}
- u_int8_t **intensity** {0}

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

- App/include/RayTracer/Parser.hpp

3.12 RayTracer::Material_t Struct Reference

Public Attributes

- std::string **name**
- std::tuple< u_int8_t, u_int8_t, u_int8_t > **color** {0, 0, 0}

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

- App/include/RayTracer/Parser.hpp

3.13 RayTracer::Parser Class Reference

Classes

- class [ParserException](#)

Static Public Member Functions

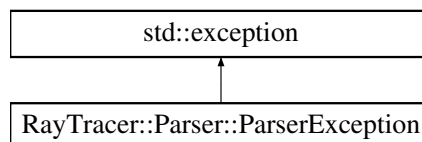
- static int **parseArgs** (const std::string &filePath)
- static [Scene](#) **parseFile** (const std::string &filePath)

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::Plane_t Struct Reference

Public Attributes

- std::string **material**
- std::tuple< u_int16_t, u_int16_t, u_int16_t > **position** {0, 0, 0}

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

- App/include/RayTracer/Parser.hpp

3.16 RayTracer::PluginLoader Class Reference

Public Member Functions

- `template<typename T >`
`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`

3.17 RayTracer::Primitive_t Struct Reference

Public Attributes

- `Material_t material`
- `PrimitiveType type {PrimitiveType::NONE}`
- `union {`
`Sphere_t sphere`
`Plane_t plane`
`Cylinder_t cylinder`
`Cone_t cone`
`};`

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

- `App/include/RayTracer/Parser.hpp`

3.18 RayTracer::RendererFactory Class Reference

Static Public Member Functions

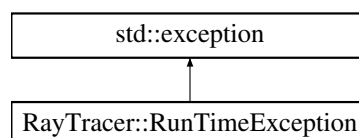
- `static std::unique_ptr< IRenderer > createRenderer (const std::string &libraryPath)`

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

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

3.19 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/RuntimeException.hpp

3.20 RayTracer::Scene Struct Reference

Public Attributes

- std::string **fileName**
- std::pair< u_int16_t, u_int16_t > **resolution** {1920, 1080}
- [Camera_t](#) **camera**
- std::vector< [Material_t](#) > **materials**
- std::vector< [Primitive_t](#) > **primitives**
- std::vector< [Light_t](#) > **lights**

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

- App/include/RayTracer/Parser.hpp

3.21 RayTracer::Sphere_t Struct Reference

Public Attributes

- std::string **material**
- std::tuple< u_int16_t, u_int16_t, u_int16_t > **position** {0, 0, 0}
- u_int16_t **radius** {0}

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

- App/include/RayTracer/Parser.hpp

3.22 Arcade::Time Class Reference

Public Member Functions

- [Time](#) (double seconds)
Construct a new [Time](#) object.
- int [asSeconds](#) () const
Transform the time to seconds.
- int [asMilliseconds](#) () const
Transform the time to milliseconds.
- int [asMicroseconds](#) () const
Transform the time to microseconds.

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

- App/include/RayTracer/Clock/Time.hpp

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