

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::Camera_t Struct Reference	5
3.2 Arcade::Clock Class Reference	5
3.2.1 Member Function Documentation	6
3.2.1.1 getElapsedTime()	6
3.3 RayTracer::Cone_t Struct Reference	6
3.4 RayTracer::Core Class Reference	6
3.5 RayTracer::Core::CoreException Class Reference	7
3.6 RayTracer::Cylinder_t Struct Reference	7
3.7 RayTracer::ILights Class Reference	7
3.8 RayTracer::IPrimitives Class Reference	8
3.9 RayTracer::IRenderer Class Reference	8
3.10 RayTracer::IShapes Class Reference	8
3.11 RayTracer::Light_t Struct Reference	8
3.12 RayTracer::Material_t Struct Reference	8
3.13 RayTracer::Parser Class Reference	9
3.14 RayTracer::Parser::ParserException Class Reference	9
3.15 RayTracer::Plane_t Struct Reference	9
3.16 RayTracer::Primitive_t Struct Reference	10
3.17 RayTracer::RunTimeException Class Reference	10
3.18 RayTracer::Scene Struct Reference	11
3.19 RayTracer::SfmlRenderer Class Reference	11
3.20 RayTracer::Sphere_t Struct Reference	11
3.21 Arcade::Time Class Reference	12
Index	13

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

RayTracer::Camera_t	5
Arcade::Clock	5
RayTracer::Cone_t	6
RayTracer::Core	6
RayTracer::Cylinder_t	7
std::exception	
RayTracer::Core::CoreException	7
RayTracer::Parser::ParserException	9
RayTracer::RunTimeException	10
RayTracer::ILights	7
RayTracer::IPrimitives	8
RayTracer::IRenderer	8
RayTracer::SfmlRenderer	11
RayTracer::IShapes	8
RayTracer::Light_t	8
RayTracer::Material_t	8
RayTracer::Parser	9
RayTracer::Plane_t	9
RayTracer::Primitive_t	10
RayTracer::Scene	11
RayTracer::Sphere_t	11
Arcade::Time	12

Chapter 2

Class Index

2.1 Class List

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

RayTracer::Camera_t	5
Arcade::Clock	5
RayTracer::Cone_t	6
RayTracer::Core	6
RayTracer::Core::CoreException	7
RayTracer::Cylinder_t	7
RayTracer::ILights	7
RayTracer::IPrimitives	8
RayTracer::IRenderer	8
RayTracer::IShapes	8
RayTracer::Light_t	8
RayTracer::Material_t	8
RayTracer::Parser	9
RayTracer::Parser::ParserException	9
RayTracer::Plane_t	9
RayTracer::Primitive_t	10
RayTracer::RunTimeException	10
RayTracer::Scene	11
RayTracer::SfmlRenderer	11
RayTracer::Sphere_t	11
Arcade::Time	12

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](#)

Static Public Member Functions

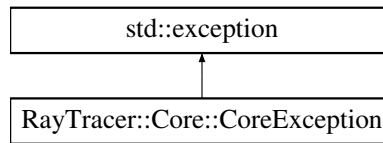
- static int **runRayTracer** (const [Scene](#) &scene)

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

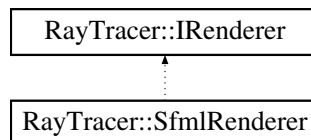
3.8 RayTracer::IPrimitives Class Reference

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

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

3.9 RayTracer::IRenderer Class Reference

Inheritance diagram for RayTracer::IRenderer:



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

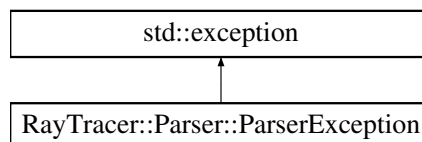
- static int **parseArgs** (const std::string &filePath)
- static [Scene](#) **parseFile** (const std::string &filePath)

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::Primitive_t Struct Reference

Public Attributes

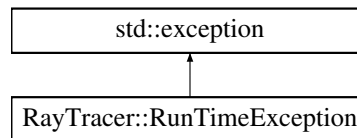
- [Material_t](#) **material**
- PrimitiveType **type** {PrimitiveType::NONE}
- ```
union {
 Sphere_t sphere
 Plane_t plane
 Cylinder_t cylinder
 Cone_t cone
};
```

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

- App/include/RayTracer/Parser.hpp

### 3.17 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

## 3.18 RayTracer::Scene Struct Reference

### Public Attributes

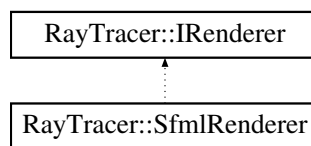
- `std::string` **fileName**
- `std::pair< u_int16_t, u_int16_t >` **resolution** {1920, 1080}
- `Camera_t` **camera**
- `std::vector< Material_t >` **materials**
- `std::vector< Primitive_t >` **primitives**
- `std::vector< Light_t >` **lights**

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

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

## 3.19 RayTracer::SfmlRenderer Class Reference

Inheritance diagram for RayTracer::SfmlRenderer:



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

- `App/plugins/Renderer/include/RayTracer/SfmlRenderer.hpp`

## 3.20 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`

## 3.21 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



# Index

Arcade::Clock, [5](#)  
    getElapsedTime, [6](#)  
Arcade::Time, [12](#)

getElapsedTime  
    Arcade::Clock, [6](#)

RayTracer::Camera\_t, [5](#)  
RayTracer::Cone\_t, [6](#)  
RayTracer::Core, [6](#)  
RayTracer::Core::CoreException, [7](#)  
RayTracer::Cylinder\_t, [7](#)  
RayTracer::ILights, [7](#)  
RayTracer::IPrimitives, [8](#)  
RayTracer::IRenderer, [8](#)  
RayTracer::IShapes, [8](#)  
RayTracer::Light\_t, [8](#)  
RayTracer::Material\_t, [8](#)  
RayTracer::Parser, [9](#)  
RayTracer::Parser::ParserException, [9](#)  
RayTracer::Plane\_t, [9](#)  
RayTracer::Primitive\_t, [10](#)  
RayTracer::RunTimeException, [10](#)  
RayTracer::Scene, [11](#)  
RayTracer::SfmlRenderer, [11](#)  
RayTracer::Sphere\_t, [11](#)