AAC

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Chapter 1

AAC

1.0.1 Ascii Art Conversion library

Little simpley library bringing joy to our dull lifes by creating cute images of ascii frogs and other heart warming things.

1.0.2 Docs

For documentation install Doxygen with Graphviz for website version and for pdf version install latex compiler. After building project run `make doc` to generate website documentation and `make man` for pdf documentation.

Installation of latex

```
sudo apt-get update
sudo apt-get install texlive-latex-extra
```

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

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

AAC_BrightnessConverter 10
  AAC_BC_Simple 9
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AAC_Image 15
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Chapter 3

Class Index

3.1 Class List

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

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: Simplest possible brightness converter . . . 9

AAC_BrightnessConverter
: Specifies group off classes converting AAC_Image to brightness matrix . . . 10

AAC_CC_Simple
: Simplest possible chunk converter . . . 11

AAC_Chunk
: Representation of groups of pixels which are going to be replaced by single char . . . 12

AAC_ChunkConverter
: Converts chunks matrix into final string . . . 12

AAC_Converter
: Creates main converter combining all other steps to create art . . . 13

AAC_error_category
: Class provideing error messages for AAC library . . . 14

AAC_Image
: Contains full image as pixels matrix . . . 15

AAC_Matrix< T >
: Multipurpose matrix class . . . 15

AAC_Pixel< E >
: Pixel class for storing AAC_Image pixels in more organised way . . . 16

AAC_Pixel< AAC_Pixel_Type::EMPTY > . . . 16

AAC_Pixel< AAC_Pixel_Type::G > . . . 17

AAC_Pixel< AAC_Pixel_Type::GA > . . . 17

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File Index

4.1 File List

Here is a list of all documented files with brief descriptions:

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AAC.h
Main library header file 22
build/CMakeFiles/3.16.3/CompilerIdCXX/**CMakeCXXCompilerId.cpp** . . . . . **??**
headers/**enums.h** . . . . . **??**
headers/**stb_image.h** . . . . . **??**
headers/**structs.h** . . . . . **??**
sources/**AAC_brightness_converter.cpp** . . . . . **??**
sources/**AAC_chunk.cpp** . . . . . **??**
sources/**AAC_chunk_converter.cpp** . . . . . **??**
sources/**AAC_chunk_generator.cpp** . . . . . **??**
sources/**AAC_error.cpp** . . . . . **??**
sources/**AAC_image.cpp** . . . . . **??**
sources/**AAC_pixel.cpp** . . . . . **??**
testdir/**main.cpp** . . . . . **??**

Chapter 5

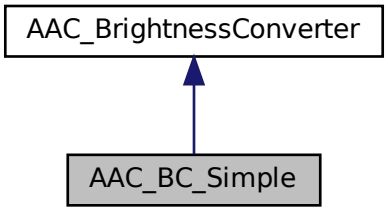
Class Documentation

5.1 AAC_BC_Simple Class Reference

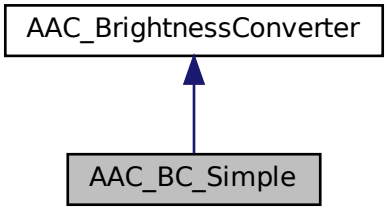
Simplest possible brightness converter.

`#include <AAC.h>`

Inheritance diagram for AAC_BC_Simple:



Collaboration diagram for AAC_BC_Simple:



Public Member Functions

- **AAC_BC_Simple** (float red_weight, float green_weight, float blue_weight)
- std::shared_ptr< AAC_Matrix< uint8_t > > **convert** (AAC_Image *img) override

5.1.1 Detailed Description

Simplest possible brightness converter.

Definition at line 361 of file AAC.h.

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

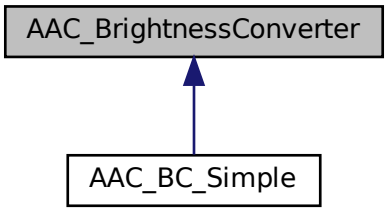
- AAC.h
- sources/AAC_brightness_converter.cpp

5.2 AAC_BrightnessConverter Class Reference

Specifies group off classes converting AAC_Image to brightness matrix.

`#include <AAC.h>`

Inheritance diagram for AAC_BrightnessConverter:



Public Member Functions

- virtual std::shared_ptr< AAC_Matrix< uint8_t > > **convert** (AAC_Image *img)=0

5.2.1 Detailed Description

Specifies group off classes converting AAC_Image to brightness matrix.

Definition at line 349 of file AAC.h.

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

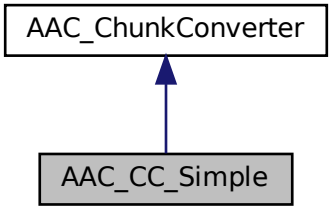
- AAC.h

5.3 AAC_CC_Simple Class Reference

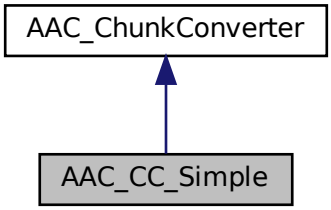
Simplest possible chunk converter.

`#include <AAC.h>`

Inheritance diagram for AAC_CC_Simple:



Collaboration diagram for AAC_CC_Simple:



Public Member Functions

- **AAC_CC_Simple** (std::string alphabet)
- std::string **convert** (AAC_Matrix< AAC_Chunk > *chunks) override

5.3.1 Detailed Description

Simplest possible chunk converter.

Definition at line 394 of file AAC.h.

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

- AAC.h
- sources/AAC_chunk_converter.cpp

5.4 AAC_Chunk Class Reference

Representation of groups of pixels which are going to be replaced by single char.

`#include <AAC.h>`

Public Member Functions

- **AAC_Chunk** (unsigned int X_start_index, unsigned int X_end_index, unsigned int Y_start_index, unsigned int Y_end_index, std::shared_ptr< AAC_Matrix< uint8_t >> data)
- void **SetChunk** (unsigned int X_start_index, unsigned int X_end_index, unsigned int Y_start_index, unsigned int Y_end_index, std::shared_ptr< AAC_Matrix< uint8_t >> data)
- std::shared_ptr< AAC_Matrix< uint8_t > > **GetData** ()
- unsigned int **GetXStart** ()
- unsigned int **GetXEnd** ()
- unsigned int **GetYStart** ()
- unsigned int **GetYEnd** ()

5.4.1 Detailed Description

Representation of groups of pixels which are going to be replaced by single char.

Definition at line 317 of file AAC.h.

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

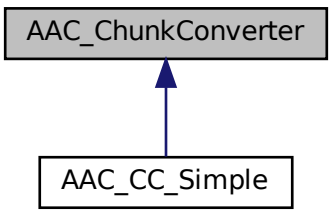
- AAC.h
- sources/AAC_chunk.cpp

5.5 AAC_ChunkConverter Class Reference

Converts chunks matrix into final string.

`#include <AAC.h>`

Inheritance diagram for AAC_ChunkConverter:



Public Member Functions

- virtual std::string **convert** (AAC_Matrix< AAC_Chunk > *chunks)=0

5.5.1 Detailed Description

Converts chunks matrix into final string.

Definition at line 382 of file AAC.h.

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

- AAC.h

5.6 AAC_Converter Class Reference

Creates main converter combining all other steps to create art.

```
#include <AAC.h>
```

Public Member Functions

- **AAC_Converter** (AAC_BrightnessConverter *brightness_conv, AAC_ChunkConverter *chunk_conv)
- std::string **CreateArt** (AAC_Image *img, size_t chunk_size)

5.6.1 Detailed Description

Creates main converter combining all other steps to create art.

Definition at line 415 of file AAC.h.

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

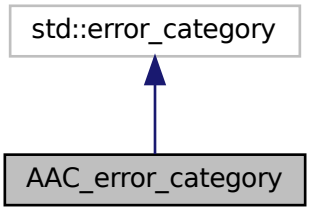
- AAC.h
- AAC.cpp
- sources/AAC_chunk_generator.cpp

5.7 AAC_error_category Class Reference

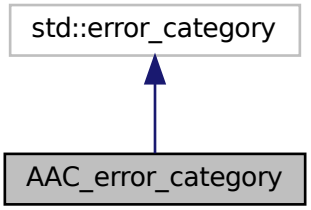
Class provideing error messages for AAC library.

`#include <AAC.h>`

Inheritance diagram for AAC_error_category:



Collaboration diagram for AAC_error_category:



Public Member Functions

- virtual const char * **name** () const noexcept override
- virtual std::string **message** (int ec) const override

5.7.1 Detailed Description

Class provideing error messages for AAC library.

Definition at line 40 of file AAC.h.

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

- AAC.h

5.8 AAC_Image Class Reference

Contains full image as pixels matrix.

`#include <AAC.h>`

Public Member Functions

- **AAC_Image** (std::string path, unsigned int size_x, unsigned int size_y, unsigned int n, unsigned char *data)
- void * **GetMatrix** ()

Public Attributes

- const AAC_Pixel_Type **pixel_type**
- const unsigned int **size_x**
- const unsigned int **size_y**

5.8.1 Detailed Description

Contains full image as pixels matrix.

Definition at line 277 of file AAC.h.

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

- AAC.h
- sources/AAC_image.cpp

5.9 AAC_Matrix< T > Class Template Reference

Multipurpose matrix class.

`#include <AAC.h>`

Public Member Functions

- **AAC_Matrix** (unsigned int size_x, unsigned int size_y)
- const T **GetElement** (unsigned int x, unsigned int y)
- T & **GetElementReference** (unsigned int x, unsigned int y)
- unsigned int **GetXSize** ()
- unsigned int **GetYSize** ()

5.9.1 Detailed Description

template<typename T>
class AAC_Matrix< T >

Multipurpose matrix class.

Definition at line 86 of file AAC.h.

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

- AAC.h

5.10 AAC_Pixel< E > Class Template Reference

Pixel class for storing AAC_Image pixels in more organised way.

`#include <AAC.h>`

5.10.1 Detailed Description

template<AAC_Pixel_Type E>
class AAC_Pixel< E >

Pixel class for storing AAC_Image pixels in more organised way.

Definition at line 177 of file AAC.h.

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

- AAC.h

5.11 AAC_Pixel< AAC_Pixel_Type::EMPTY > Class Reference

5.11.1 Detailed Description

Definition at line 258 of file AAC.h.

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

- AAC.h
- sources/AAC_pixel.cpp

5.12 AAC_Pixel< AAC_Pixel_Type::G > Class Reference

Public Member Functions

- **AAC_Pixel** (uint8_t grey)
- struct AAC_Pixel_G **GetPixelValues** ()
- void **SetPixelValues** (uint8_t grey)

5.12.1 Detailed Description

Definition at line 186 of file AAC.h.

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

- AAC.h
- sources/AAC_pixel.cpp

5.13 AAC_Pixel< AAC_Pixel_Type::GA > Class Reference

Public Member Functions

- **AAC_Pixel** (uint8_t grey, uint8_t alpha)
- struct AAC_Pixel_GA **GetPixelValues** ()
- void **SetPixelValues** (uint8_t grey, uint8_t alpha)

5.13.1 Detailed Description

Definition at line 204 of file AAC.h.

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

- AAC.h
- sources/AAC_pixel.cpp

5.14 AAC_Pixel< AAC_Pixel_Type::RGB > Class Reference

Public Member Functions

- **AAC_Pixel** (uint8_t red, uint8_t green, uint8_t blue)
- struct AAC_Pixel_RGB **GetPixelValues** ()
- void **SetPixelValues** (uint8_t red, uint8_t green, uint8_t blue)

5.14.1 Detailed Description

Definition at line 222 of file AAC.h.

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

- AAC.h
- sources/AAC_pixel.cpp

5.15 AAC_Pixel< AAC_Pixel_Type::RGBA > Class Reference

Public Member Functions

- **AAC_Pixel** (uint8_t red, uint8_t green, uint8_t blue, uint8_t alpha)
- struct AAC_Pixel_RGBA **GetPixelValues** ()
- void **SetPixelValues** (uint8_t red, uint8_t green, uint8_t blue, uint8_t alpha)

5.15.1 Detailed Description

Definition at line 240 of file AAC.h.

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

- AAC.h
- sources/AAC_pixel.cpp

5.16 AAC_Pixel_EMPTY Struct Reference

5.16.1 Detailed Description

Definition at line 30 of file structs.h.

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

- headers/structs.h

5.17 AAC_Pixel_G Struct Reference

Public Attributes

- uint8_t **grey**

5.17.1 Detailed Description

Definition at line 4 of file structs.h.

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

- headers/structs.h

5.18 AAC_Pixel_GA Struct Reference

Public Attributes

- uint8_t **grey**
- uint8_t **alpha**

5.18.1 Detailed Description

Definition at line 9 of file structs.h.

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

- headers/structs.h

5.19 AAC_Pixel_RGB Struct Reference

Public Attributes

- uint8_t **red**
- uint8_t **green**
- uint8_t **blue**

5.19.1 Detailed Description

Definition at line 15 of file structs.h.

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

- headers/structs.h

5.20 AAC_Pixel_RGBA Struct Reference

Public Attributes

- uint8_t **red**
- uint8_t **green**
- uint8_t **blue**
- uint8_t **alpha**

5.20.1 Detailed Description

Definition at line 22 of file structs.h.

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

- headers/structs.h

5.21 stbi_io_callbacks Struct Reference

Public Attributes

- int(∗ **read**)(void ∗user, char ∗data, int size)
- void(∗ **skip**)(void ∗user, int n)
- int(∗ **eof**)(void ∗user)

5.21.1 Detailed Description

Definition at line 409 of file stb_image.h.

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

- headers/stb_image.h

Chapter 6

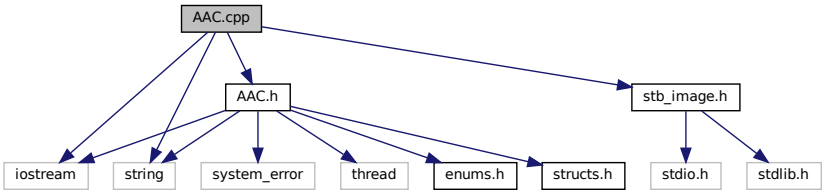
File Documentation

6.1 AAC.cpp File Reference

This file contains shiet.

```
#include "AAC.h"
#include <iostream>
#include <string>
#include "stb_image.h"
```

Include dependency graph for AAC.cpp:



Functions

- AAC_Image * AAC_OpenImage (std::string path)

  Global image opener.

6.1.1 Detailed Description

This file contains shiet.

6.1.2 Function Documentation

6.1.2.1 AAC_OpenImage()

```
AAC_Image* AAC_OpenImage (
            std::string path )
```

Global image opener.

AAC_OpenImage

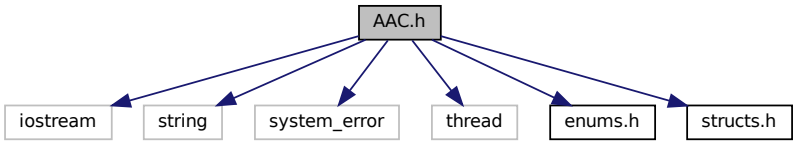
Definition at line 25 of file AAC.cpp.

6.2 AAC.h File Reference

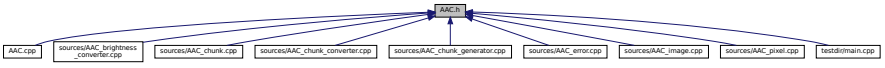
Main library header file.

```
#include <iostream>
#include <string>
#include <system_error>
#include <thread>
#include "enums.h"
#include "structs.h"
```

Include dependency graph for AAC.h:



This graph shows which files directly or indirectly include this file:



Classes

- class AAC_error_category

  Class provideing error messages for AAC library.
- class AAC_Matrix< T >

  Multipurpose matrix class.
- class AAC_Pixel< E >

  Pixel class for storing AAC_Image pixels in more organised way.
- class AAC_Pixel< AAC_Pixel_Type::G >
- class AAC_Pixel< AAC_Pixel_Type::GA >
- class AAC_Pixel< AAC_Pixel_Type::RGB >

- class AAC_Pixel< AAC_Pixel_Type::RGBA >
- class AAC_Pixel< AAC_Pixel_Type::EMPTY >
- class AAC_Image

  Contains full image as pixels matrix.
- class AAC_Chunk

  Representation of groups of pixels which are going to be replaced by single char.
- class AAC_BrightnessConverter

  Specifies group off classes converting AAC_Image to brightness matrix.
- class AAC_BC_Simple

  Simplest possible brightness converter.
- class AAC_ChunkConverter

  Converts chunks matrix into final string.
- class AAC_CC_Simple

  Simplest possible chunk converter.
- class AAC_Converter

  Creates main converter combining all other steps to create art.

Macros

- #define **MAX_SIZE** 4000

Functions

- void **set_AAC_error_code** (std::error_code ec)
- std::error_code **get_AAC_error_code** ()
- void **clear_AAC_error_code** ()
- std::error_code **make_error_code** (AAC_error_codes ec)
- AAC_Image * AAC_OpenImage (std::string path)

  Global image opener.

Variables

- const AAC_error_category **AAC_category** {}

6.2.1 Detailed Description

Main library header file.

6.2.2 Function Documentation

6.2.2.1 AAC_OpenImage()

```
AAC_Image* AAC_OpenImage (
            std::string path )
```

Global image opener.

AAC_OpenImage

Definition at line 25 of file AAC.cpp.

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