Reference Manual

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- std::ostream & operator<< (std::ostream &out, EasyImage const &image)

  Writes an img::EasyImage to an output stream in the BMP file format.
- std::istream & operator>> (std::istream &in, EasyImage &image)

  Reads an img::EasyImage from an input stream.

4.1.1 Detailed Description

The namespace of the EasyImage class.

4.1.2 Function Documentation

4.1.2.1 std::ostream & img::operator<< (std::ostream & *out,* EasyImage const & *image*)

Writes an img::EasyImage to an output stream in the BMP file format.

Parameters

out	the std::ostream to write the BMP file to.
image	the img::EasyImage to be written to the output stream

Returns

a reference to the output stream the image was written to

Definition at line 260 of file EasyImage.cc.

4.1.2.2 std::istream & img::operator>> (std::istream & *in*, EasyImage & *image*)

Reads an img::EasyImage from an input stream.

Please note: at this point only a limited subset of BMP-file format is supported. In order to correctly read a BMP file it must:

- Be an uncompressed bitmap

Only contain one plane

- Use 24bits/pixel If the BMP file-format is not supported an UnsupportedFileTypeException is thrown

Parameters

in	the input stream to read the bitmap from
image	the EasyImage object in which the bitmap must be stored

Returns

a reference to the input stream from which the bitmap was read

Definition at line 325 of file EasyImage.cc.

Chapter 5

Class Documentation

5.1 img::Color Class Reference

This class represents the color of a pixel in an img::EasyImage object.

`#include <EasyImage.h>`

Public Member Functions

- Color ()

  Default Constructor.
- Color (uint8_t r, uint8_t g, uint8_t b)

  Constructs a Color with the given intensities.
- ~Color ()

Public Attributes

- uint8_t blue

  The intensity of the blue color component.
- uint8_t green

  The intensity of the green color component.
- uint8_t red

  The intensity of the red color component.

5.1.1 Detailed Description

This class represents the color of a pixel in an img::EasyImage object.

Definition at line 31 of file EasyImage.h.

5.1.2 Constructor & Destructor Documentation

5.1.2.1 img::Color::Color (uint8_t *r*, uint8_t *g*, uint8_t *b*)

Constructs a Color with the given intensities.

Parameters

r	The red color component
g	The green color component
b	The blue color component

Definition at line 116 of file EasyImage.cc.

5.1.2.2 img::Color::~Color ( )

Destructor

Definition at line 120 of file EasyImage.cc.

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

- /Users/bartsas/Courses/Graphics/SVN/code/cxx/easyimage/EasyImage.h
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/easyimage/EasyImage.cc

5.2 img::EasyImage Class Reference

This class implements a 'minor' image-library that supports basic operations such as setting and retrieving a pixel, and drawing a line.

```
#include <EasyImage.h>
```

Public Member Functions

- EasyImage ()

  Default Constructor. Creates a zero-pixel image.
- EasyImage (unsigned int width, unsigned int height, Color color=Color())

  Constructor: creates a new EasyImage of the specified width and height.
- EasyImage (EasyImage const &img)

  Copy Constructor.
- virtual ~EasyImage ()

  Destructor.
- EasyImage & operator= (EasyImage const &img)

  Assignment operator. Allows an easyImage to be assigned to another easyImage.
- unsigned int get_width () const

  Returns the width of the image.
- unsigned int get_height () const

  Returns the height of the image.
- Color & operator() (unsigned int x, unsigned int y)

  Function operator. This operator returns a reference to a particular pixel of the image.
- Color const & operator() (unsigned int x, unsigned int y) const

  Function operator. This operator returns a const reference to a particular pixel of the image.
- void clear (Color color=Color())

  Fills the image with a background of a specified color. Defaults to black.
- void draw_line (unsigned int x0, unsigned int y0, unsigned int x1, unsigned int y1, Color color)

  Draws a line from pixel (x0,y0) to pixel (x1,y1) in the specified color.

Friends

- std::istream & operator>> (std::istream &in, EasyImage &image)

  Reads an img::EasyImage from an input stream.

5.2.1 Detailed Description

This class implements a 'minor' image-library that supports basic operations such as setting and retrieving a pixel, and drawing a line.

Definition at line 126 of file EasyImage.h.

5.2.2 Constructor & Destructor Documentation

5.2.2.1 img::EasyImage::EasyImage (unsigned int *width*, unsigned int *height*, Color *color* = Color())

Constructor: creates a new EasyImage of the specified width and height.

Parameters

width	the width of the image
height	the height of the image
color	(optional) the background color of the image

Definition at line 151 of file EasyImage.cc.

5.2.2.2 img::EasyImage::EasyImage (EasyImage const & *img*)

Copy Constructor.

Parameters

img	the image to be copied

Definition at line 156 of file EasyImage.cc.

5.2.3 Member Function Documentation

5.2.3.1 void img::EasyImage::clear (Color *color* = Color())

Fills the image with a background of a specified color. Defaults to black.

Parameters

color	The color to be assigned to each pixel

Definition at line 184 of file EasyImage.cc.

5.2.3.2 void img::EasyImage::draw_line (unsigned int *x0*, unsigned int *y0*, unsigned int *x1*, unsigned int *y1*, Color *color*)

Draws a line from pixel (x0,y0) to pixel (x1,y1) in the specified color.

Parameters

x0	the x coordinate of the first pixel
y0	the y coordinate of the first pixel
x1	the x coordinate of the second pixel
y1	the y coordinate of the second pixel
color	the color of the line

These assertions apply: assert(x0 $<$ getWidth()) assert(y0 $<$ getHeight()) assert(x1 $<$ getWidth()) assert(y1 $<$ getHeight())

Definition at line 208 of file EasyImage.cc.

5.2.3.3 unsigned int img::EasyImage::get_height ( ) const

Returns the height of the image.

Returns

the height of the image

Definition at line 179 of file EasyImage.cc.

5.2.3.4 unsigned int img::EasyImage::get_width ( ) const

Returns the width of the image.

Returns

the width of the image

Definition at line 174 of file EasyImage.cc.

5.2.3.5 img::Color & img::EasyImage::operator() (unsigned int *x*, unsigned int *y*)

Function operator. This operator returns a reference to a particular pixel of the image.

Parameters

x	the x coordinate of the pixel
y	the y coordinate of the pixel

These assertions apply: assert(x$>$=0 && x $<$ getWidth()) assert(y$>$=0 && y $<$ getHeight())

Definition at line 192 of file EasyImage.cc.

5.2.3.6 img::Color const & img::EasyImage::operator() (unsigned int *x*, unsigned int *y*) const

Function operator. This operator returns a const reference to a particular pixel of the image.

Parameters

x	the x coordinate of the pixel
y	the y coordinate of the pixel

These assertions apply: assert(x$>$=0 && x $<$ getWidth()) assert(y$>$=0 && y $<$ getHeight())

Definition at line 201 of file EasyImage.cc.

5.2.3.7 img::EasyImage & img::EasyImage::operator= (img::EasyImage const & *img*)

Assignment operator. Allows an easyImage to be assigned to another easyImage.

Parameters

img	The image to be assigned to this image

Definition at line 166 of file EasyImage.cc.

5.2.4 Friends And Related Function Documentation

5.2.4.1 std::istream& operator>> (std::istream & *in*, EasyImage & *image*) [friend]

Reads an img::EasyImage from an input stream.

Please note: at this point only a limited subset of BMP-file format is supported. In order to correctly read a BMP file it must:

- Be an uncompressed bitmap

Only contain one plane

- Use 24bits/pixel If the BMP file-format is not supported an UnsupportedFileTypeException is thrown

Parameters

in	the input stream to read the bitmap from
image	the EasyImage object in which the bitmap must be stored

Returns

a reference to the input stream from which the bitmap was read

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

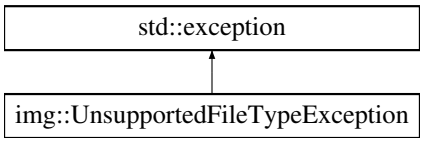
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/easyimage/EasyImage.h
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/easyimage/EasyImage.cc

5.3 img::UnsupportedFileTypeException Class Reference

The exception that is thrown when an error occurs while trying to read an img::EasyImage from an input stream.

`#include <EasyImage.h>`

Inheritance diagram for img::UnsupportedFileTypeException:



Public Member Functions

- UnsupportedFileTypeException (std::string const &msg)

Construct an exception with the given message.

- UnsupportedFileTypeException (const UnsupportedFileTypeException &original)

  Copy Constructor.
- virtual ~UnsupportedFileTypeException () throw ()

  Destructor.
- UnsupportedFileTypeException & operator= (const UnsupportedFileTypeException &original)

  Assignment operator.
- virtual const char * what () const throw ()

  Returns a description of the error hat occurred.

5.3.1 Detailed Description

The exception that is thrown when an error occurs while trying to read an img::EasyImage from an input stream.

Definition at line 77 of file EasyImage.h.

5.3.2 Constructor & Destructor Documentation

5.3.2.1 img::UnsupportedFileTypeException::UnsupportedFileTypeException (std::string const & *msg*)

Construct an exception with the given message.

Parameters

msg	The message explaining what went wrong

Definition at line 124 of file EasyImage.cc.

5.3.2.2 img::UnsupportedFileTypeException::UnsupportedFileTypeException (const UnsupportedFileTypeException & *original*)

Copy Constructor.

Parameters

original	The exception to be copied into this object

Definition at line 128 of file EasyImage.cc.

5.3.3 Member Function Documentation

5.3.3.1 img::UnsupportedFileTypeException & img::UnsupportedFileTypeException::operator= (const UnsupportedFileTypeException & *original*)

Assignment operator.

Parameters

original	The original exception to be assigned to this one

Definition at line 136 of file EasyImage.cc.

5.3.3.2 const char * img::UnsupportedFileTypeException::what ( ) const throw () [virtual]

Returns a description of the error hat occurred.

Returns

A description of the error hat occurred.

Definition at line 141 of file EasyImage.cc.

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

- /Users/bartsas/Courses/Graphics/SVN/code/cxx/easyimage/EasyImage.h
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/easyimage/EasyImage.cc

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