Graphics

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Contents

Chapter 1

Data Structure Index

1.1 Data Structures

Here are the data structures with brief descriptions:

Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

Chapter 3

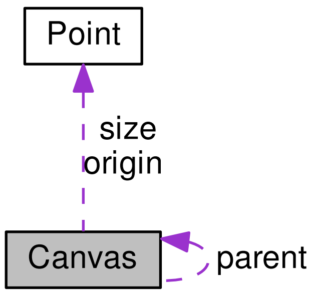
Data Structure Documentation

3.1 Canvas Struct Reference

A Canvas is part of a Window or of another Canvas, on which it's possible to draw.

```
#include <canvas.h>
```

Collaboration diagram for Canvas:



Data Fields

- SDL_Surface $*$ surface
- Point size
- Point origin
- struct Canvas $*$ parent

3.1.1 Detailed Description

A Canvas is part of a Window or of another Canvas, on which it's possible to draw.

3.1.2 Field Documentation

3.1.2.1 Point Canvas::origin

Point representing the origin of the Canvas, user can set and get it safely.

3.1.2.2 struct Canvas∗ Canvas::parent

Pointer to the Canvas representing the parent of the Canvas, i.e. the one one which it will be blitted, if the Canvas is the root Canvas representing the whole Window it points to NULL.

3.1.2.3 Point Canvas::size

Point representing the size of the Canvas, usefull to get the value quickly, but user souldn't change it.

3.1.2.4 SDL_Surface∗ Canvas::surface

Pointer to the SDL_Surface used to store the content of the Canvas, user shouldn't have to touch this.

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

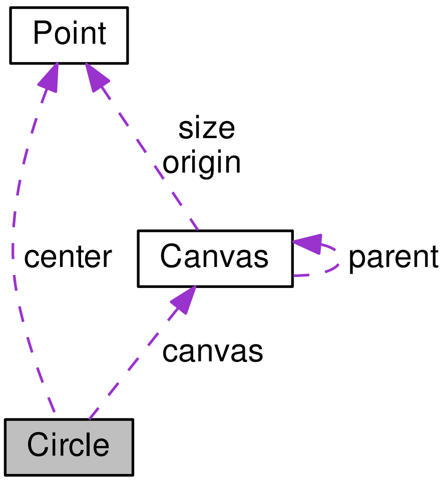
- canvas.h

3.2 Circle Struct Reference

A struct used to represent a circle.

```
#include <circle.h>
```

Collaboration diagram for Circle:



Data Fields

- Point center
- int radius
- Canvas ∗ canvas

3.2.1 Detailed Description

A struct used to represent a circle.

3.2.2 Field Documentation

3.2.2.1 Canvas∗ Circle::canvas

Pointer to the Canvas the Circle belongs to.

3.2.2.2 Point Circle::center

Point representing the center of the circle, must be relative to its Canvas.

3.2.2.3 int Circle::radius

int representing the radius of the circle.

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

- circle.h

3.3 Color Struct Reference

A struct used to represent a RGBA color.

```
#include <color.h>
```

Data Fields

- Uint32 rgb
- Uint8 alpha

3.3.1 Detailed Description

A struct used to represent a RGBA color.

3.3.2 Field Documentation

3.3.2.1 Uint8 Color::alpha

Uint32 representing the alpha component of the color.

3.3.2.2 Uint32 Color::rgb

Uint32 representing the RGB component of the color.

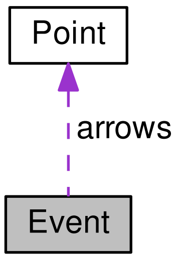
The documentation for this struct was generated from the following file:

- color.h

3.4 Event Struct Reference

```
#include <event.h>
```

Collaboration diagram for Event:



Data Fields

- bool quit
- bool space
- Point arrows

3.4.1 Field Documentation

3.4.1.1 Point Event::arrows

3.4.1.2 bool Event::quit

3.4.1.3 bool Event::space

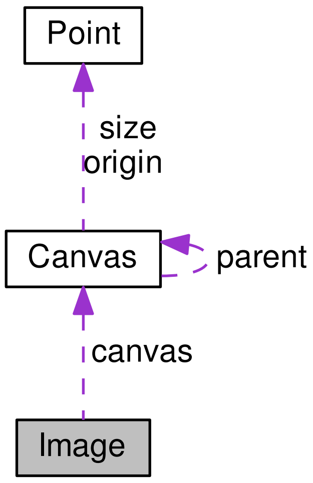
The documentation for this struct was generated from the following file:

- event.h

3.5 Image Struct Reference

```
#include <image.h>
```

Collaboration diagram for Image:



Data Fields

- SDL_Surface ∗ surface
- Canvas ∗ canvas

3.5.1 Field Documentation

3.5.1.1 Canvas∗ Image::canvas

3.5.1.2 SDL_Surface∗ Image::surface

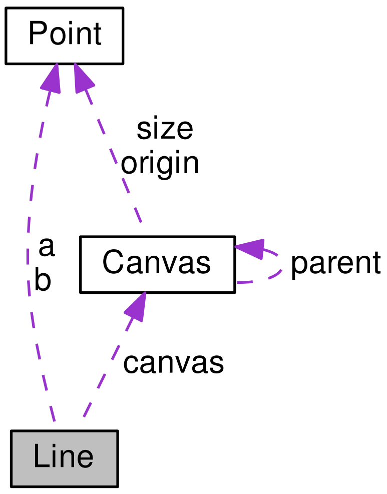
The documentation for this struct was generated from the following file:

- image.h

3.6 Line Struct Reference

```
#include <line.h>
```

Collaboration diagram for Line:



Data Fields

- Point a
- Point b
- Canvas ∗ canvas

3.6.1 Field Documentation

3.6.1.1 Point Line::a

3.6.1.2 Point Line::b

3.6.1.3 Canvas∗ Line::canvas

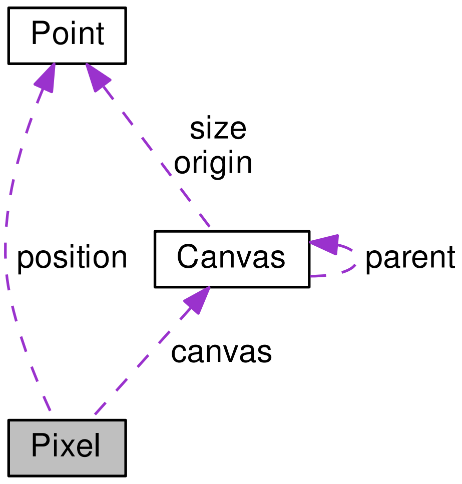
The documentation for this struct was generated from the following file:

- line.h

3.7 Pixel Struct Reference

```
#include <pixel.h>
```

Collaboration diagram for Pixel:



Data Fields

- Point position
- Canvas ∗ canvas

3.7.1 Field Documentation

3.7.1.1 Canvas∗ Pixel::canvas

3.7.1.2 Point Pixel::position

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

- pixel.h

3.8 Point Struct Reference

```
#include <point.h>
```

Data Fields

- int x
- int y

3.8.1 Field Documentation

3.8.1.1 int Point::x

3.8.1.2 int Point::y

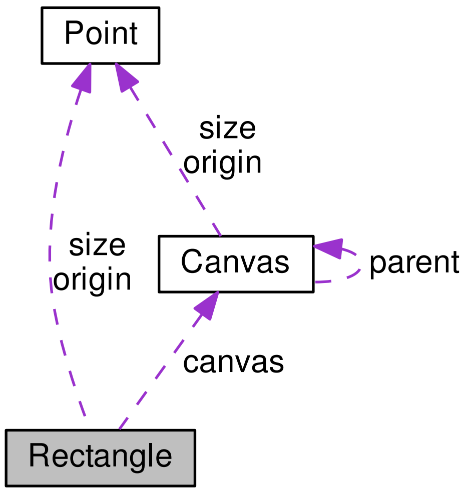
The documentation for this struct was generated from the following file:

- point.h

3.9 Rectangle Struct Reference

```
#include <rectangle.h>
```

Collaboration diagram for Rectangle:



Data Fields

- Point origin
- Point size
- Canvas ∗ canvas

3.9.1 Field Documentation

3.9.1.1 Canvas∗ Rectangle::canvas

3.9.1.2 Point Rectangle::origin

3.9.1.3 Point Rectangle::size

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

- rectangle.h

3.10 Sound Struct Reference

```
#include <sound.h>
```

Data Fields

- Mix_Music ∗ content

3.10.1 Field Documentation

3.10.1.1 Mix_Music∗ Sound::content

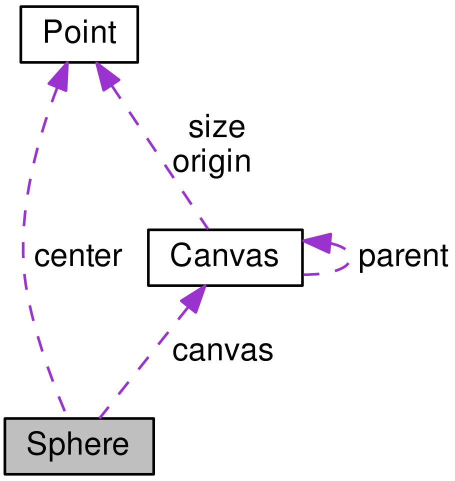
The documentation for this struct was generated from the following file:

- sound.h

3.11 Sphere Struct Reference

```
#include <sphere.h>
```

Collaboration diagram for Sphere:



Data Fields

- Point center
- int radius
- Canvas ∗ canvas

3.11.1 Field Documentation

3.11.1.1 Canvas∗ Sphere::canvas

3.11.1.2 Point Sphere::center

3.11.1.3 int Sphere::radius

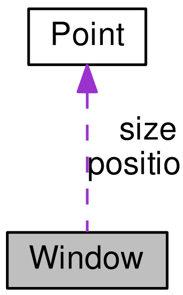
The documentation for this struct was generated from the following file:

- sphere.h

3.12 Window Struct Reference

```
#include <window.h>
```

Collaboration diagram for Window:



Data Fields

- SDL_Window ∗ window
- char ∗ title
- Point position
- Point size

3.12.1 Field Documentation

3.12.1.1 Point Window::position

3.12.1.2 Point Window::size

3.12.1.3 char* Window::title

3.12.1.4 SDL_Window* Window::window

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

- window.h

Chapter 4

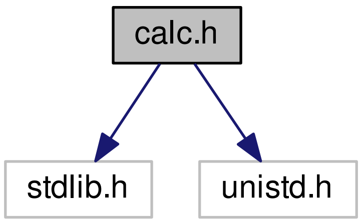
File Documentation

4.1 calc.h File Reference

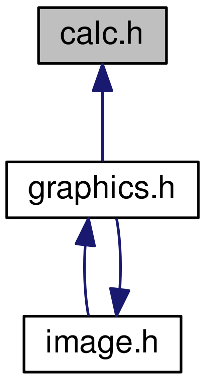
Some maths functions.

```
#include <stdlib.h>
#include <unistd.h>
```

Include dependency graph for calc.h:



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



Functions

- float calc_alea_float (void)

    Function to get a random float x in [0 ; 1[.
- int calc_alea_int (const int min, const int max)

    Function to get a random int.

4.1.1 Detailed Description

Some maths functions.

4.1.2 Function Documentation

4.1.2.1 float calc_alea_float (void)

Function to get a random float x in [0 ; 1[.

Returns

The random float.

4.1.2.2 int calc_alea_int (const int *min,* const int *max*)

Function to get a random int.

Parameters

min	The minimun value for the random int.
max	The maximum value for the random int.

Returns

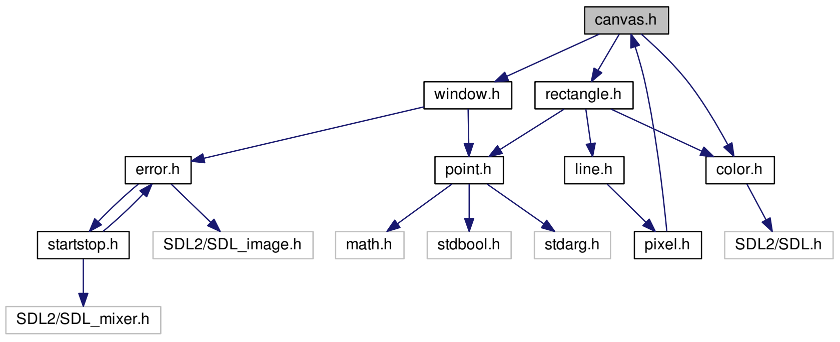
The random int.

4.2 canvas.h File Reference

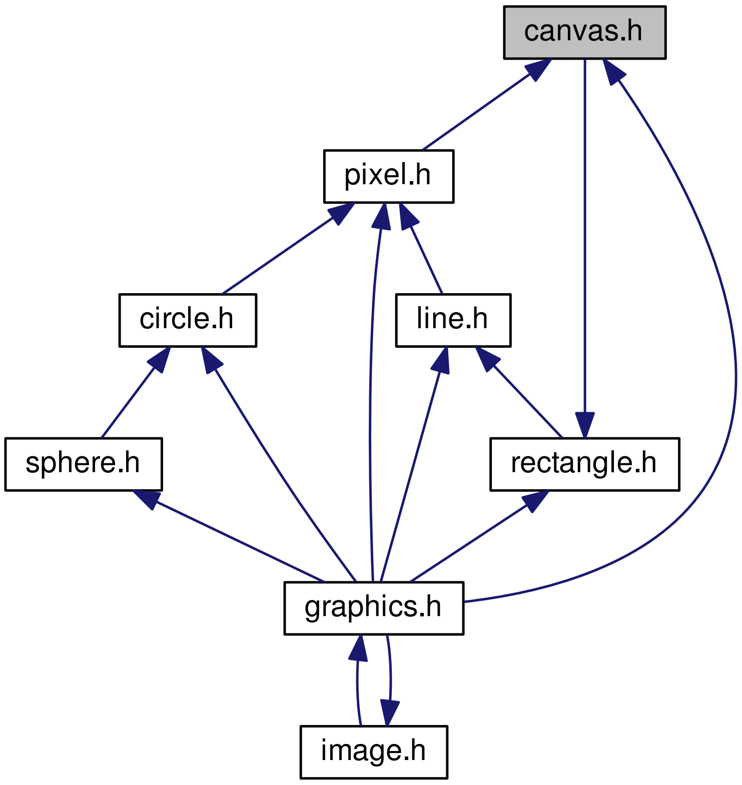
Everything related to Canvas.

```
#include "window.h"
#include "color.h"
#include "rectangle.h"
```

Include dependency graph for canvas.h:



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



Data Structures

- struct Canvas

  A Canvas is part of a Window or of another Canvas, on which it's possible to draw.

Typedefs

- typedef struct Canvas Canvas

Functions

- bool canvas_collision_canvas (const Canvas ∗canvas1, const Canvas ∗canvas2) __attribute__((pure))

  Function to detect collision between two Canvas.
- bool canvas_is_out_of_parent_bottom (const Canvas ∗canvas) __attribute__((pure))

  Function to know if a Canvas is under its parent.
- bool canvas_is_out_of_parent_left (const Canvas ∗canvas) __attribute__((pure))

  Function to know if a Canvas is out of its parent's left side.
- bool canvas_is_out_of_parent_right (const Canvas ∗canvas) __attribute__((pure))

Function to know if a Canvas is out of its parent's right side.
- bool canvas_is_out_of_parent_top (const Canvas ∗canvas) __attribute__((pure))

  Function to know if a Canvas is upper its parent's.
- bool canvas_is_out_of_parent_x (const Canvas ∗canvas) __attribute__((pure))

  Function to know if a Canvas is outside of its parent's on the X axis.
- bool canvas_is_out_of_parent_y (const Canvas ∗canvas) __attribute__((pure))

  Function to know if a Canvas is outside of its parent's on the Y axis.
- bool canvas_will_be_out_of_parent_bottom (const Canvas ∗canvas, const Point ∗move) __attribute__((pure))

  Function to know if a Canvas will be under its parent after moving its origin.
- bool canvas_will_be_out_of_parent_left (const Canvas ∗canvas, const Point ∗move) __attribute__((pure))

  Function to know if a Canvas will be out of its parent's left side after moving its origin.
- bool canvas_will_be_out_of_parent_right (const Canvas ∗canvas, const Point ∗move) __attribute__((pure))

  Function to know if a Canvas will be out of its parent's right side after moving its origin.
- bool canvas_will_be_out_of_parent_top (const Canvas ∗canvas, const Point ∗move) __attribute__((pure))

  Function to know if a Canvas will be upper its parent after moving its origin.
- bool canvas_will_be_out_of_parent_x (const Canvas ∗canvas, const Point ∗move) __attribute__((pure))

  Function to know if a Canvas will be outside of its parent on the X axis after moving its origin.
- bool canvas_will_be_out_of_parent_y (const Canvas ∗canvas, const Point ∗move) __attribute__((pure))

  Function to know if a Canvas will be outside of its parent on the Y axis after moving its origin.
- void canvas_blit (Canvas ∗canvas)

  Function to blit a Canvas on its parent.
- void canvas_create (Canvas ∗canvas, const Point ∗size, const Point ∗origin, Canvas ∗parent)

  Function to create a Canvas.
- void canvas_clear (Canvas ∗canvas)

  Function to clear a Canvas, i.e. filling it with black.
- void canvas_create_from_window (Canvas ∗canvas, const Window ∗window)

  Function to create a Canvas from a Window, it will fill the whole window.
- void canvas_draw_borders_in (Canvas ∗canvas, const Color ∗color)

  Function to draw a 1 pixel border inside of a Canvas.
- void canvas_draw_borders_out (Canvas ∗canvas, const Color ∗color)

  Function to draw a 1 pixel border outside of a Canvas.
- void canvas_fill (Canvas ∗canvas, const Color ∗color)

  Function to fill a Canvas with a Color.
- void canvas_get_absolute_origin (const Canvas ∗canvas, Point ∗absoluteOrigin)

  Function to get the origin of a Canvas on the Window, instead of on its parent.

4.2.1 Detailed Description

Everything related to Canvas.

4.2.2 Typedef Documentation

4.2.2.1 typedef struct Canvas Canvas

4.2.3 Function Documentation

4.2.3.1 void canvas_blit (Canvas ∗ *canvas*)

Function to blit a Canvas on its parent.

Parameters

canvas	A pointer to the Canvas to blit.

4.2.3.2 void canvas_clear (Canvas ∗ *canvas*)

Function to clear a Canvas, i.e. filling it with black.

Parameters

canvas	A pointer to the Canvas to clear.

4.2.3.3 bool canvas_collision_canvas (const Canvas ∗ *canvas1*, const Canvas ∗ *canvas2*)

Function to detect collision between two Canvas.

Parameters

canvas1	A pointer to the first Canvas.
canvas2	A pointer to the second Canvas.

Returns

If the two Canvas collide returns true, else, returns false.

4.2.3.4 void canvas_create (Canvas ∗ *canvas*, const Point ∗ *size*, const Point ∗ *origin*, Canvas ∗ *parent*)

Function to create a Canvas.

Parameters

canvas	A pointer to the Canvas to create.
size	A pointer to a Point representing the wanted size for the Canvas.
origin	A pointer to a Point representig the wanter origin for the Canvas.
parent	A pointer to the Canvas wanted as the parent of the Canvas to create.

4.2.3.5 void canvas_create_from_window (Canvas ∗ *canvas*, const Window ∗ *window*)

Function to create a Canvas from a Window, it will fill the whole window.

Parameters

canvas	A pointer to the Canvas to create.
window	A pointer to the Window from which the Canvas should be created.

4.2.3.6 void canvas_draw_borders_in (**Canvas** ∗ *canvas,* const **Color** ∗ *color*)

Function to draw a 1 pixel border inside of a Canvas.

Parameters

canvas	A pointer to the Canvas.
color	A pointer to the Color wanted for the border.

4.2.3.7 void canvas_draw_borders_out (**Canvas** ∗ *canvas,* const **Color** ∗ *color*)

Function to draw a 1 pixel border outside of a Canvas.

Parameters

canvas	A pointer to the Canvas.
color	A pointer to the Color wanted for the border.

4.2.3.8 void canvas_fill (**Canvas** ∗ *canvas,* const **Color** ∗ *color*)

Function to fill a Canvas with a Color.

Parameters

canvas	A pointer to the Canvas to fill.
color	A pointer to the Color wanted to fill the Canvas.

4.2.3.9 void canvas_get_absolute_origin (const **Canvas** ∗ *canvas,* **Point** ∗ *absoluteOrigin*)

Function to get the origin of a Canvas on the Window, instead of on its parent.

Parameters

canvas	A pointer to the Canvas.
absoluteOrigin	A pointer to the Point in which the origin will be stored.

4.2.3.10 bool canvas_is_out_of_parent_bottom (const **Canvas** ∗ *canvas*)

Function to know if a Canvas is under its parent.

Parameters

canvas	A pointer to the Canvas.

Returns

If the Canvas is under its parent, returns true, else, returns false.

4.2.3.11 bool canvas_is_out_of_parent_left (const **Canvas** $*$ *canvas*)

Function to know if a Canvas is out of its parent's left side.

Parameters

canvas	A pointer to the Canvas.

Returns

If the Canvas is out of its parent's left side, returns true, else, returns false.

4.2.3.12 bool canvas_is_out_of_parent_right (const **Canvas** $*$ *canvas*)

Function to know if a Canvas is out of its parent's right side.

Parameters

canvas	A pointer to the Canvas.

Returns

If the Canvas is out of its parent's right side, returns true, else, returns false.

4.2.3.13 bool canvas_is_out_of_parent_top (const **Canvas** $*$ *canvas*)

Function to know if a Canvas is upper its parent's.

Parameters

canvas	A pointer to the Canvas.

Returns

If the canvas is upper, returns true, else, returns false.

4.2.3.14 bool canvas_is_out_of_parent_x (const **Canvas** $*$ *canvas*)

Function to know if a Canvas is outside of its parent's on the X axis.

Parameters

canvas	A pointer to the Canvas.

Returns

If the Canvas is outside, returns true, else, returns false.

4.2.3.15 bool canvas_is_out_of_parent_y (const **Canvas** ∗ *canvas*)

Function to know if a Canvas is outside of its parent's on the Y axis.

Parameters

canvas	A pointer to the Canvas.

Returns

If the Canvas is outside, returns true, else, returns false.

4.2.3.16 bool canvas_will_be_out_of_parent_bottom (const **Canvas** ∗ *canvas,* const **Point** ∗ *move*)

Function to know if a Canvas will be under its parent after moving its origin.

Parameters

canvas	A pointer to the Canvas.
move	A pointer to the Point representing the origin's move.

Returns

If the Canvas will be under its parent, returns true, else, returns false.

4.2.3.17 bool canvas_will_be_out_of_parent_left (const **Canvas** ∗ *canvas,* const **Point** ∗ *move*)

Function to know if a Canvas will be out of its parent's left side after moving its origin.

Parameters

canvas	A pointer to the Canvas.
move	A pointer to the Point representing the origin's move.

Returns

If the Canvas will be will be out of its parent's left side, returns true, else, returns false.

4.2.3.18 bool canvas_will_be_out_of_parent_right (const Canvas * *canvas*, const Point * *move*)

Function to know if a Canvas will be out of its parent's right side after moving its origin.

Parameters

canvas	A pointer to the Canvas.
move	A pointer to the Point representing the origin's move.

Returns

If the Canvas will be will be out of its parent's right side, returns true, else, returns false.

4.2.3.19 bool canvas_will_be_out_of_parent_top (const Canvas * *canvas*, const Point * *move*)

Function to know if a Canvas will be upper its parent after moving its origin.

Parameters

canvas	A pointer to the Canvas.
move	A pointer to the point representing the origin's move.

Returns

If the Canvas will be upper its parent, returns true, else, returns false.

4.2.3.20 bool canvas_will_be_out_of_parent_x (const Canvas * *canvas*, const Point * *move*)

Function to know if a Canvas will be outside of its parent on the X axis after moving its origin.

Parameters

canvas	A pointer to the Canvas.
move	A pointer to the point representing the origin's move.

Returns

If the Canvas will be outside of its parent on the X axis, returns true, else, returns false.

4.2.3.21 bool canvas_will_be_out_of_parent_y (const Canvas * *canvas*, const Point * *move*)

Function to know if a Canvas will be outside of its parent on the Y axis after moving its origin.

Parameters

canvas	A pointer to the Canvas.
move	A pointer to the point representing the origin's move.

Returns

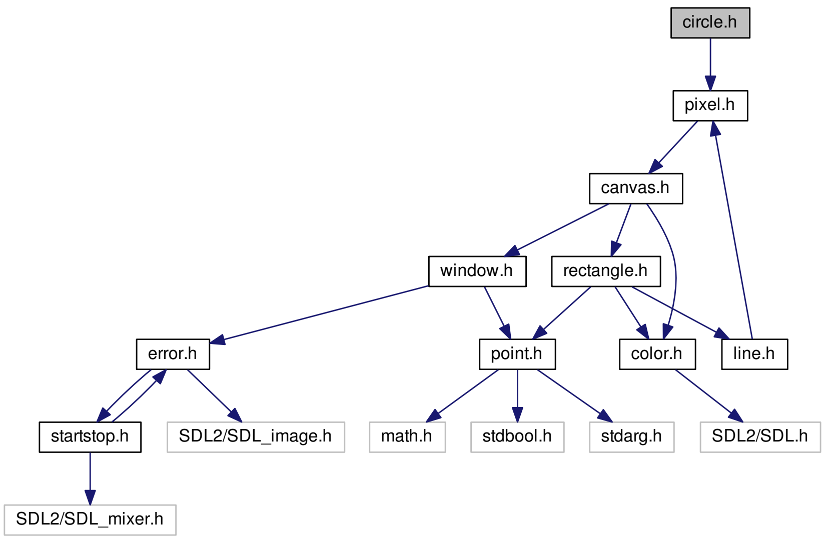
If the Canvas will be outside of its parent on the Y axis, returns true, else, returns false.

4.3 circle.h File Reference

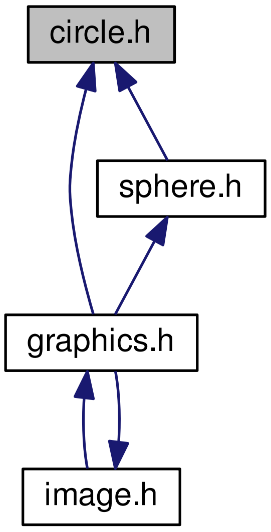
Everything related to Circle.

```
#include "pixel.h"
```

Include dependency graph for circle.h:



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



Data Structures

- struct Circle

  A struct used to represent a circle.

Functions

- void circle_draw (const Circle ∗circle, const Color ∗color)

  Function to draw a Circle.
- void circle_draw_fill (const Circle ∗circle, const Color ∗color)

  Function to draw a filled Circle.

4.3.1 Detailed Description

Everything related to Circle.

4.3.2 Function Documentation

4.3.2.1 void circle_draw (const Circle ∗ *circle,* const Color ∗ *color*)

Function to draw a Circle.

Parameters

circle	A pointer to the Circle to draw.
color	A pointer to the Color to use to draw the Circle.

4.3.2.2 void circle_draw_fill (const Circle ∗ *circle,* const Color ∗ *color*)

Function to draw a filled Circle.

Parameters

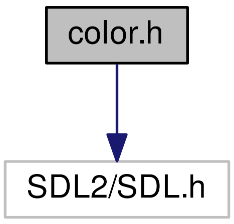
circle	A pointer to the Circle to draw.
color	A pointer to the Color to use to draw the Circle.

4.4 color.h File Reference

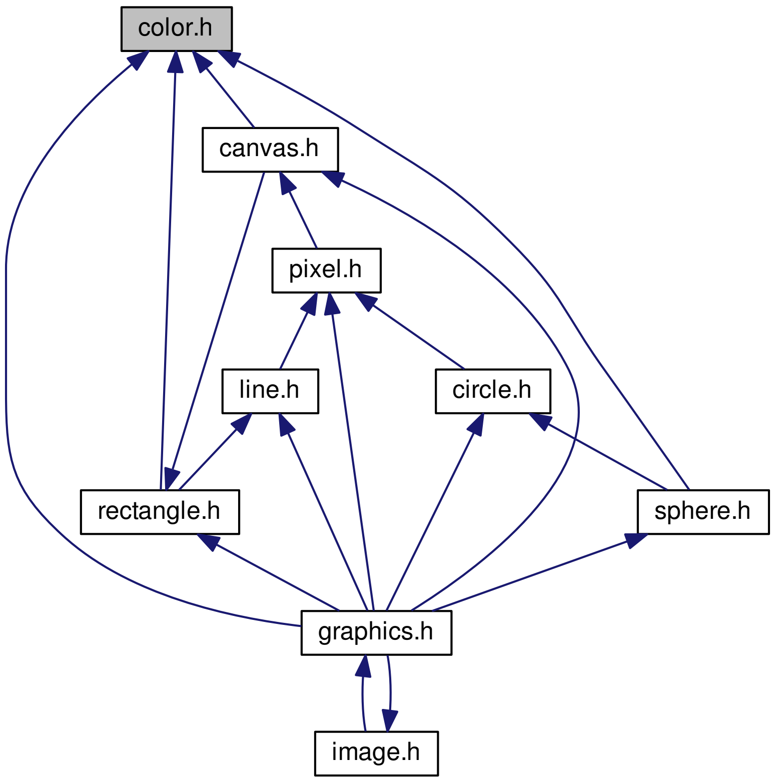
Everything related to Color.

```
#include <SDL2/SDL.h>
```

Include dependency graph for color.h:



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



Data Structures

- struct Color

  A struct used to represent a RGBA color.

Functions

- void color_translate (const Color ∗color, SDL_Color ∗sdlColor)
- Uint8 color_get_red (const Color ∗color) __attribute__((const))

  Function to get the red component of a Color.
- Uint8 color_get_green (const Color ∗color) __attribute__((const))

  Function to get the green component of a Color.
- Uint8 color_get_blue (const Color ∗color) __attribute__((pure))

  Function to get the blue component of a Color.

4.4.1 Detailed Description

Everything related to Color.

4.4.2 Function Documentation

4.4.2.1 Uint8 color_get_blue (const Color $*$ *color*)

Function to get the blue component of a Color.

Parameters

canvas1	A pointer to the Color.

Returns

The blue component in a Uint8.

4.4.2.2 Uint8 color_get_green (const Color $*$ *color*) const

Function to get the green component of a Color.

Parameters

canvas1	A pointer to the Color.

Returns

The green component in a Uint8.

4.4.2.3 Uint8 color_get_red (const Color $*$ *color*) const

Function to get the red component of a Color.

Parameters

canvas1	A pointer to the Color.

Returns

The red component in a Uint8.

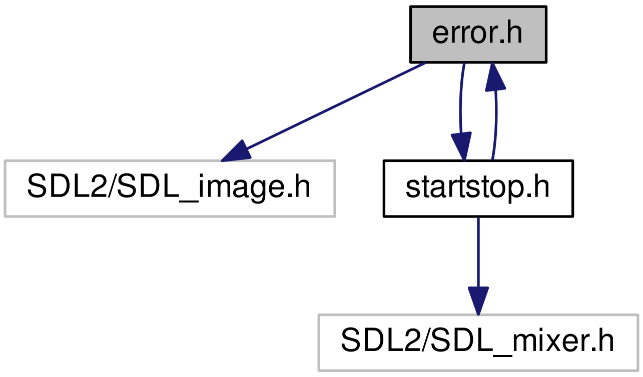
4.4.2.4 void color_translate (const Color $*$ *color,* SDL_Color $*$ *sdlColor*)

4.5 error.h File Reference

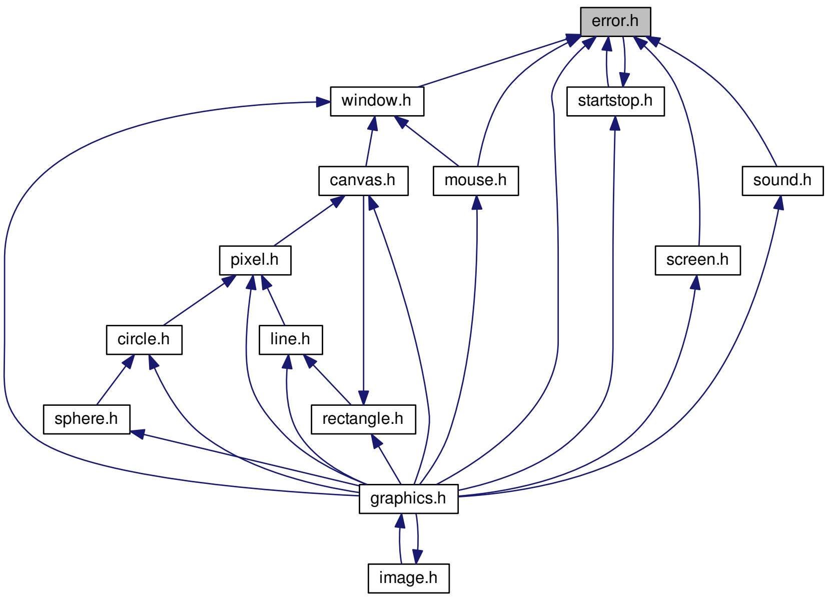
Everything related to errors and warnings handling.

```
#include <SDL2/SDL_image.h>
#include "startstop.h"
```

Include dependency graph for error.h:



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



Functions

- void error_quit (void) __attribute__((noreturn))

  Function to quit after an error, will stop graphics and SDL components and stop the program.

4.5.1 Detailed Description

Everything related to errors and warnings handling.

4.5.2 Function Documentation

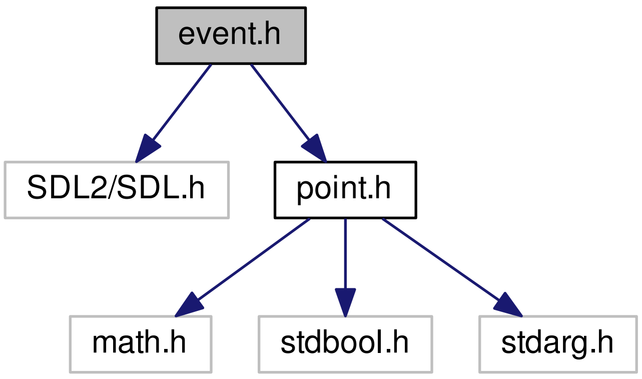
4.5.2.1 void error_quit (void)

Function to quit after an error, will stop graphics and SDL components and stop the program.

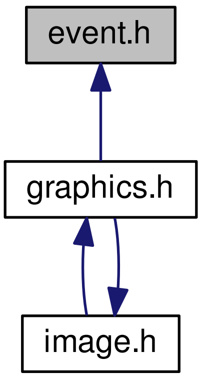
4.6 event.h File Reference

```
#include <SDL2/SDL.h>
#include "point.h"
```

Include dependency graph for event.h:



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



Data Structures

- struct Event

Functions

- void event_create (Event ∗newEvent)
- void event_update (Event ∗event)

4.6.1 Function Documentation

4.6.1.1 void event_create (Event ∗ *newEvent*)

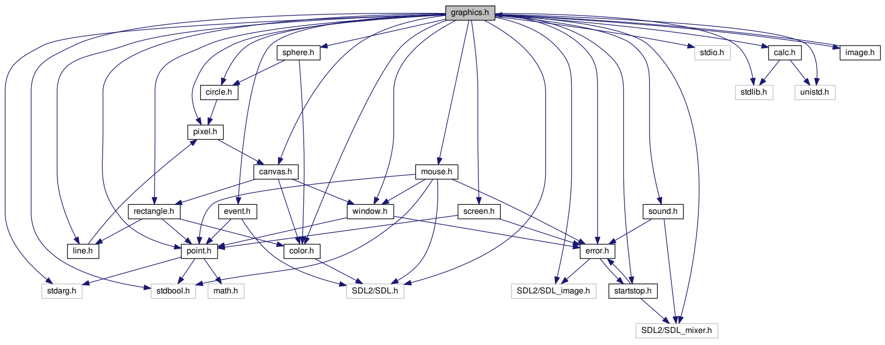
4.6.1.2 void event_update (Event ∗ *event*)

4.7 graphics.h File Reference

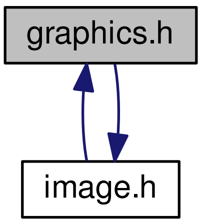
```
#include <stdarg.h>
```

```
#include <stdbool.h>
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <SDL2/SDL.h>
#include <SDL2/SDL_image.h>
#include <SDL2/SDL_mixer.h>
#include "point.h"
#include "pixel.h"
#include "canvas.h"
#include "line.h"
#include "window.h"
#include "screen.h"
#include "color.h"
#include "circle.h"
#include "sound.h"
#include "calc.h"
#include "rectangle.h"
#include "event.h"
#include "sphere.h"
#include "image.h"
#include "error.h"
#include "startstop.h"
#include "mouse.h"
```

Include dependency graph for graphics.h:



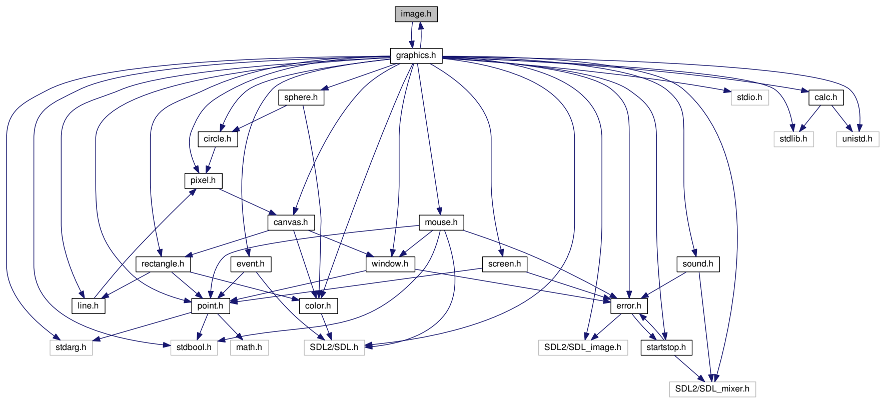
This graph shows which files directly or indirectly include this file:



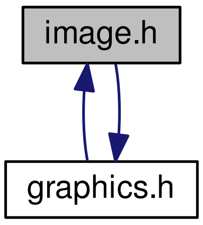
4.8 image.h File Reference

```
#include "graphics.h"
```

Include dependency graph for image.h:



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



Data Structures

- struct Image

Functions

- void image_blit_naive (const Image ∗image)
- void image_blit_scaled (const Image ∗image)
- void image_load (Image ∗image, const char ∗pathToImg)
- void image_unload (Image ∗image)

4.8.1 Function Documentation

4.8.1.1 void image_blit_naive (const Image ∗ *image*)

4.8.1.2 void image_blit_scaled (const Image ∗ *image*)

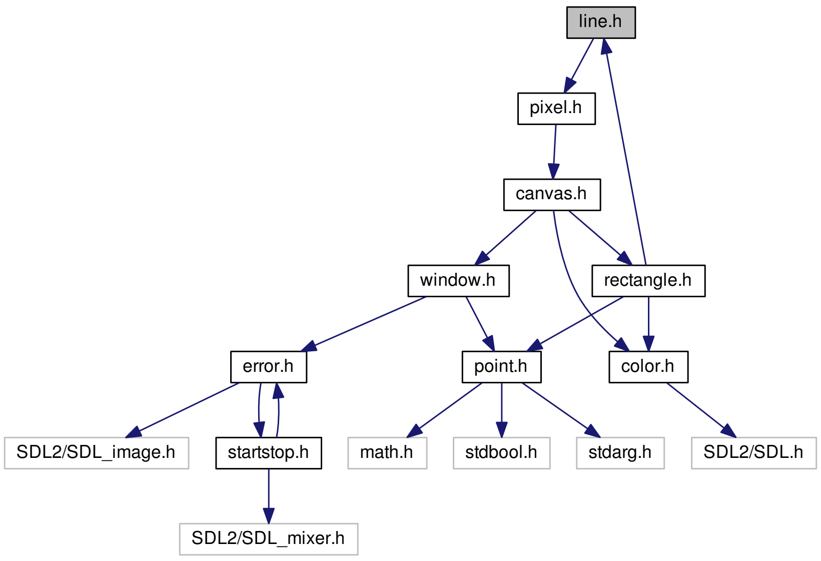
4.8.1.3 void image_load (Image ∗ *image,* const char ∗ *pathToImg*)

4.8.1.4 void image_unload (Image ∗ *image*)

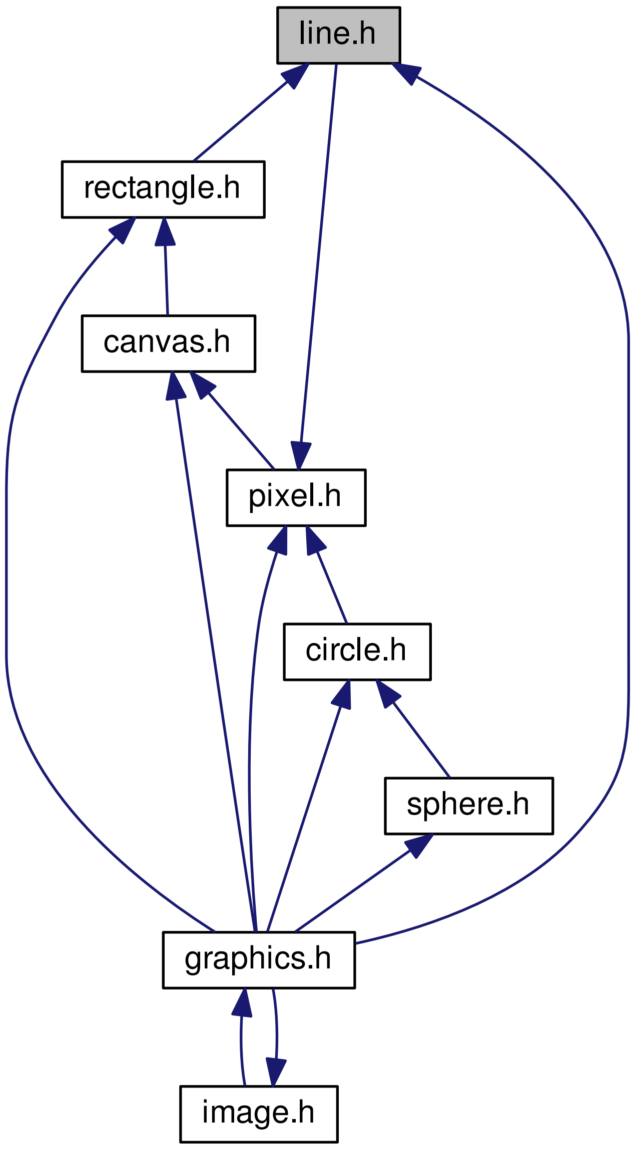
4.9 line.h File Reference

```
#include "pixel.h"
```

Include dependency graph for line.h:



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



Data Structures

- struct Line

Functions

- void line_draw (const Line ∗line, const Color ∗color)
- void line_draw_bis (const Line ∗line, const Color ∗color)
- void line_draw_ter (const Line ∗line, const Color ∗color)

4.9.1 Function Documentation

4.9.1.1 void line_draw (const Line ∗ *line,* const Color ∗ *color*)

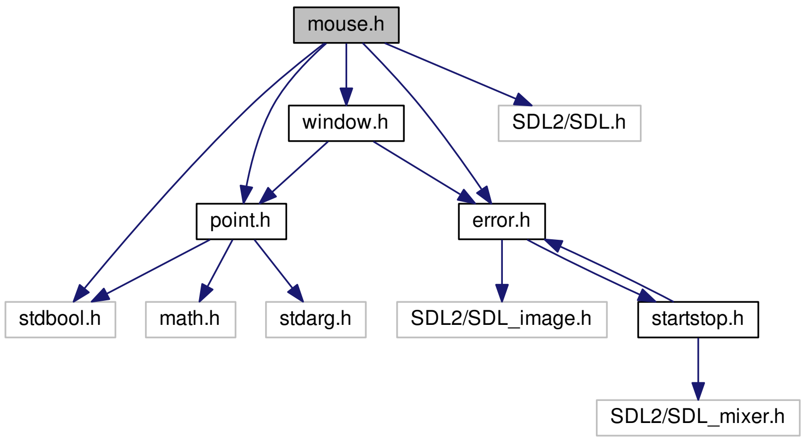
4.9.1.2 void line_draw_bis (const Line ∗ *line,* const Color ∗ *color*)

4.9.1.3 void line_draw_ter (const Line ∗ *line,* const Color ∗ *color*)

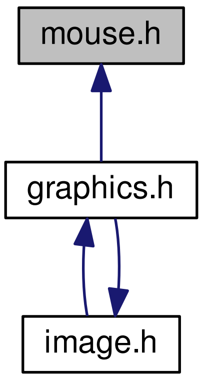
4.10 mouse.h File Reference

```
#include <stdbool.h>
#include <SDL2/SDL.h>
#include "error.h"
#include "point.h"
#include "window.h"
```

Include dependency graph for mouse.h:



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



Functions

- void mouse_hide (void)
- void mouse_show (void)
- void mouse_wait_click (const Window ∗window, Point ∗click)
- bool mouse_is_hidden (void)
- bool mouse_is_shown (void)

4.10.1 Function Documentation

4.10.1.1 void mouse_hide (void)

4.10.1.2 bool mouse_is_hidden (void)

4.10.1.3 bool mouse_is_shown (void)

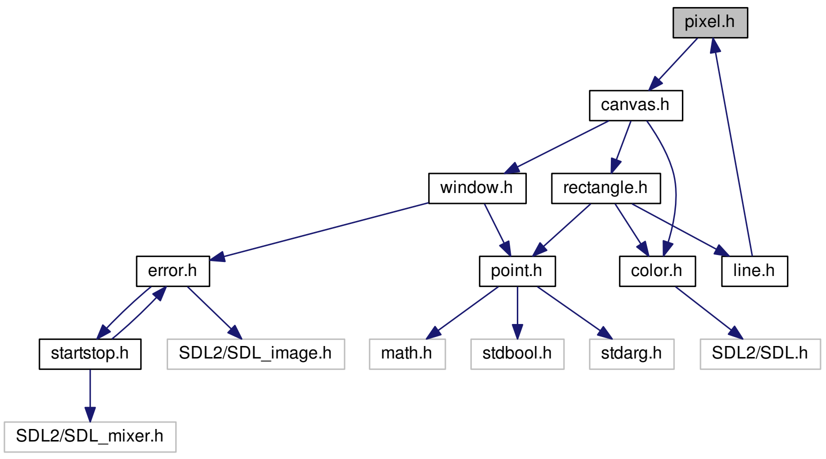
4.10.1.4 void mouse_show (void)

4.10.1.5 void mouse_wait_click (const Window ∗ *window*, Point ∗ *click*)

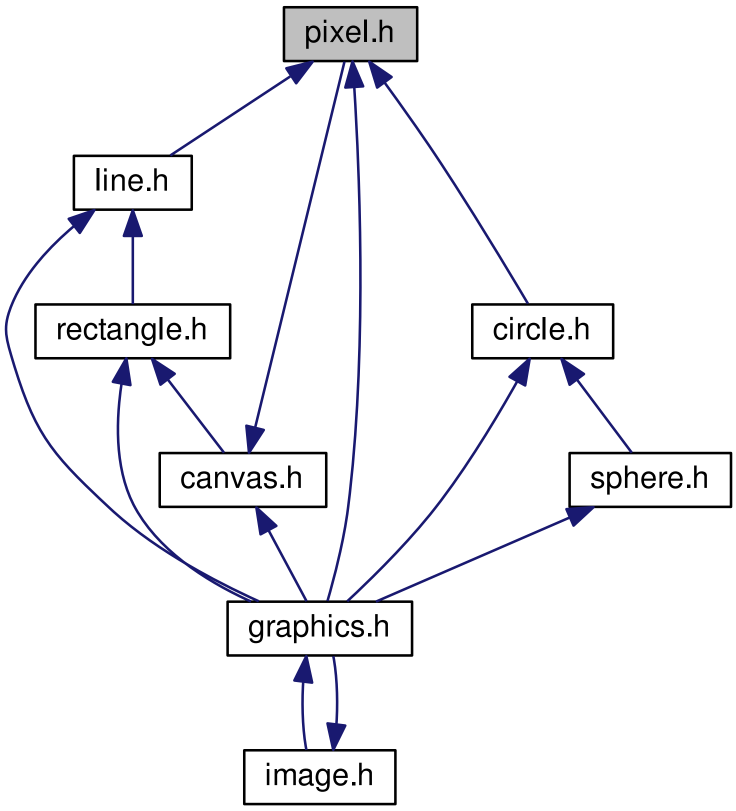
4.11 pixel.h File Reference

```
#include "canvas.h"
```

Include dependency graph for pixel.h:



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



Data Structures

- struct Pixel

Functions

- void pixel_draw (const Pixel ∗pixel, const Color ∗color)

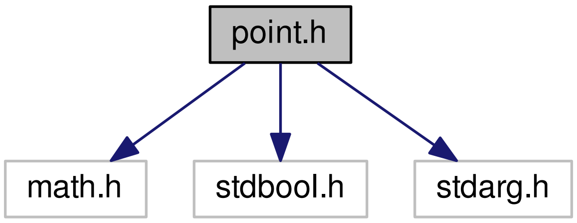
4.11.1 Function Documentation

4.11.1.1 void pixel_draw (const Pixel ∗ *pixel*, const Color ∗ *color*)

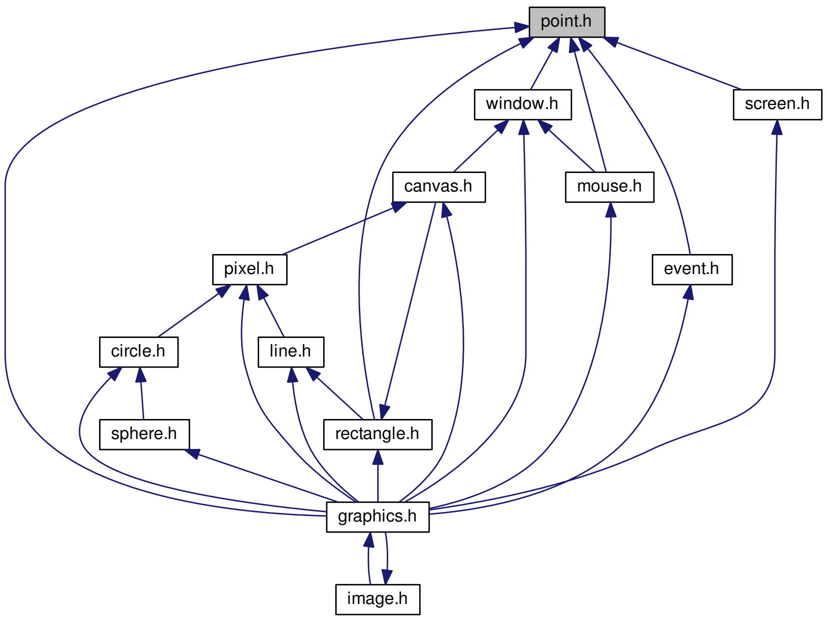
4.12 point.h File Reference

```
#include <math.h>
#include <stdbool.h>
#include <stdarg.h>
```

Include dependency graph for point.h:



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



Data Structures

- struct Point

Functions

- bool point_are_equals (const Point p1, const Point p2) __attribute__((const))
- int point_distance (const Point a, const Point b)
- Point point_max_x (const Point a, const Point b)
- Point point_max_y (const Point a, const Point b)
- Point point_min_x (const Point a, const Point b)
- Point point_min_y (const Point a, const Point b)

4.12.1 Function Documentation

4.12.1.1 bool point_are_equals (const Point *p1*, const Point *p2*) const

4.12.1.2 int point_distance (const Point *a*, const Point *b*)

4.12.1.3 Point point_max_x (const Point *a*, const Point *b*)

4.12.1.4 Point point_max_y (const Point *a*, const Point *b*)

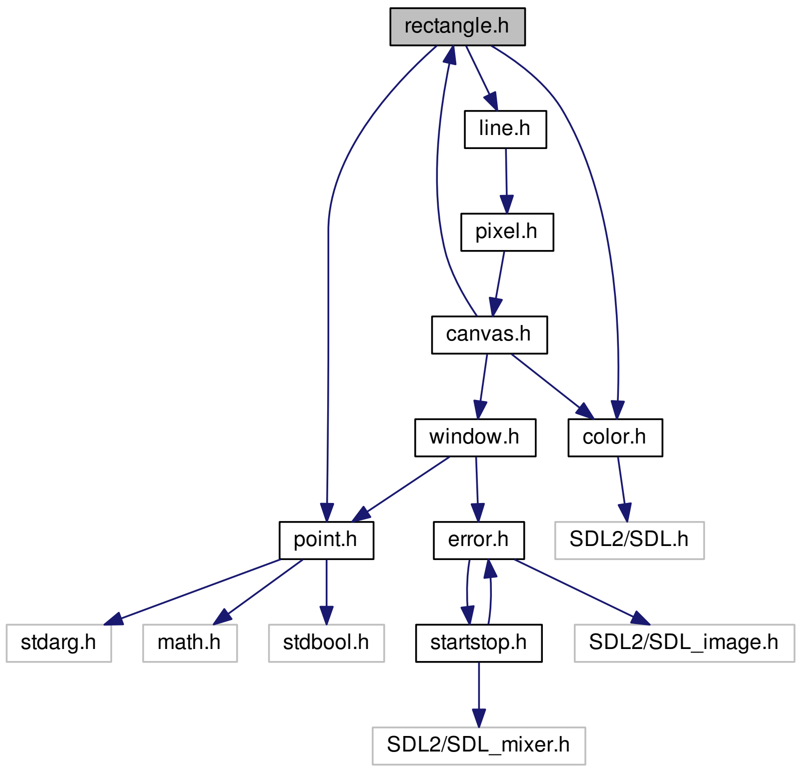
4.12.1.5 Point point_min_x (const Point *a*, const Point *b*)

4.12.1.6 Point point_min_y (const Point *a*, const Point *b*)

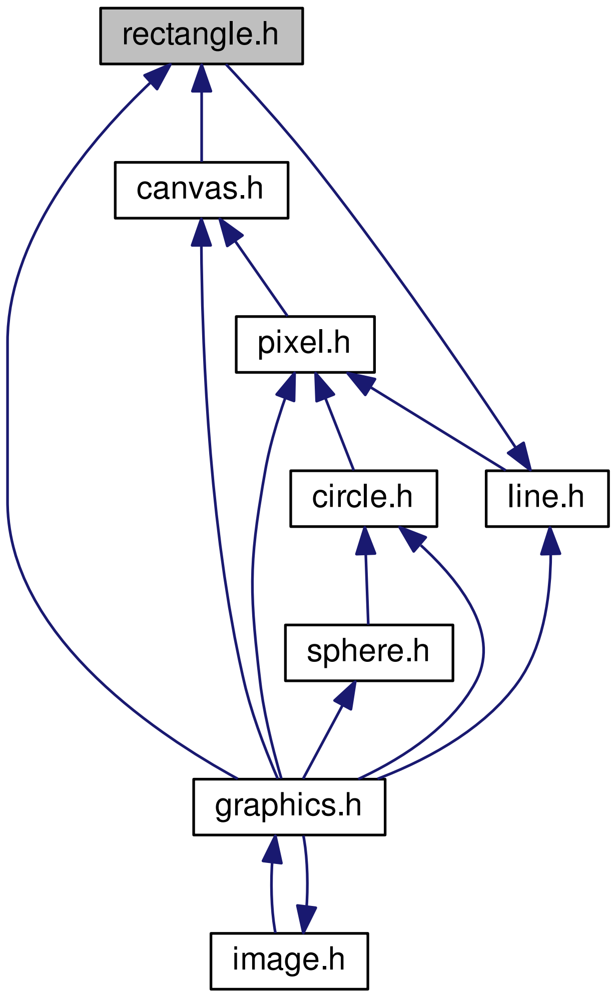
4.13 rectangle.h File Reference

```
#include "point.h"
#include "line.h"
#include "color.h"
```

Include dependency graph for rectangle.h:



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



Data Structures

- struct Rectangle

Functions

- void rectangle_draw (const Rectangle ∗rectangle, const Color ∗color)
- void rectangle_draw_fill (const Rectangle ∗rectangle, const Color ∗color)
- bool rectangle_contains_point (const Rectangle ∗rect, const Point ∗p) __attribute__((pure))
- bool rectangle_contains_absolute_point (const Rectangle ∗rect, const Point ∗p)

4.13.1 Function Documentation

4.13.1.1 bool rectangle_contains_absolute_point (const **Rectangle** ∗ *rect,* const **Point** ∗ *p*)

4.13.1.2 bool rectangle_contains_point (const **Rectangle** ∗ *rect,* const **Point** ∗ *p*)

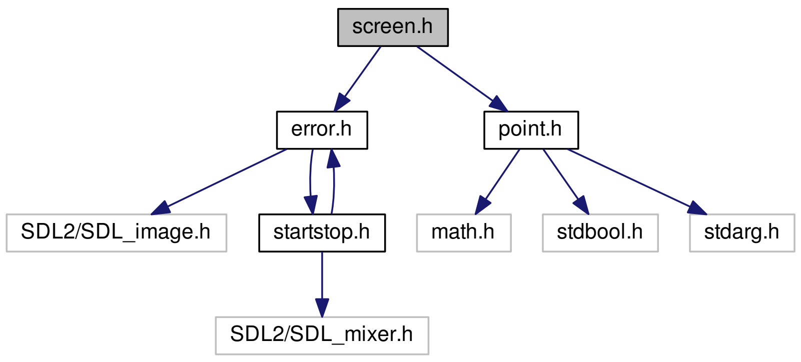
4.13.1.3 void rectangle_draw (const **Rectangle** ∗ *rectangle,* const **Color** ∗ *color*)

4.13.1.4 void rectangle_draw_fill (const **Rectangle** ∗ *rectangle,* const **Color** ∗ *color*)

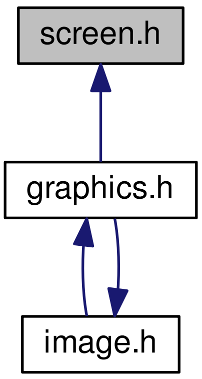
4.14 screen.h File Reference

```
#include "error.h"
#include "point.h"
```

Include dependency graph for screen.h:



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



Functions

- void screen_get_size (Point ∗screenSize)

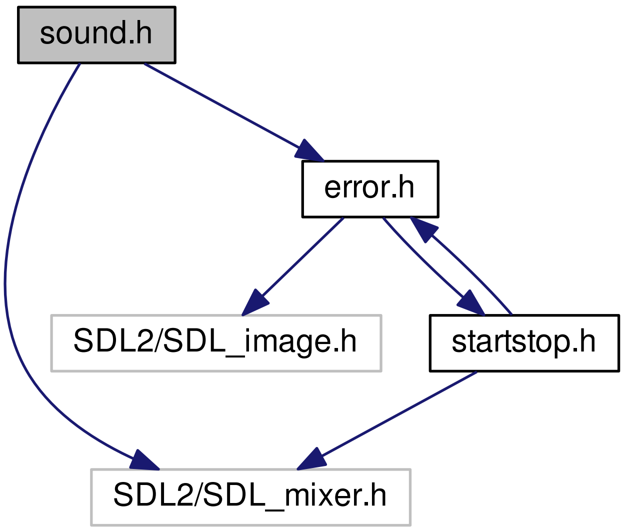
4.14.1 Function Documentation

4.14.1.1 void screen_get_size (Point ∗ *screenSize*)

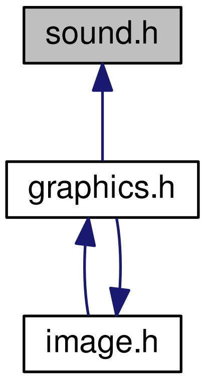
4.15 sound.h File Reference

```
#include <SDL2/SDL_mixer.h>
#include "error.h"
```

Include dependency graph for sound.h:



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



Data Structures

- struct Sound

Functions

- void sound_load (const char ∗fileName, Sound ∗sound)
- void sound_play (const Sound ∗music)
- void sound_play_once (const Sound ∗music)
- void sound_free (Sound ∗sound)
- void sound_stop (void)
- void sound_pause (void)
- void sound_resume (void)

4.15.1 Function Documentation

4.15.1.1 void sound_free (Sound ∗ *sound*)

4.15.1.2 void sound_load (const char ∗ *fileName,* Sound ∗ *sound*)

4.15.1.3 void sound_pause (void)

4.15.1.4 void sound_play (const Sound ∗ *music*)

4.15.1.5 void sound_play_once (const Sound ∗ *music*)

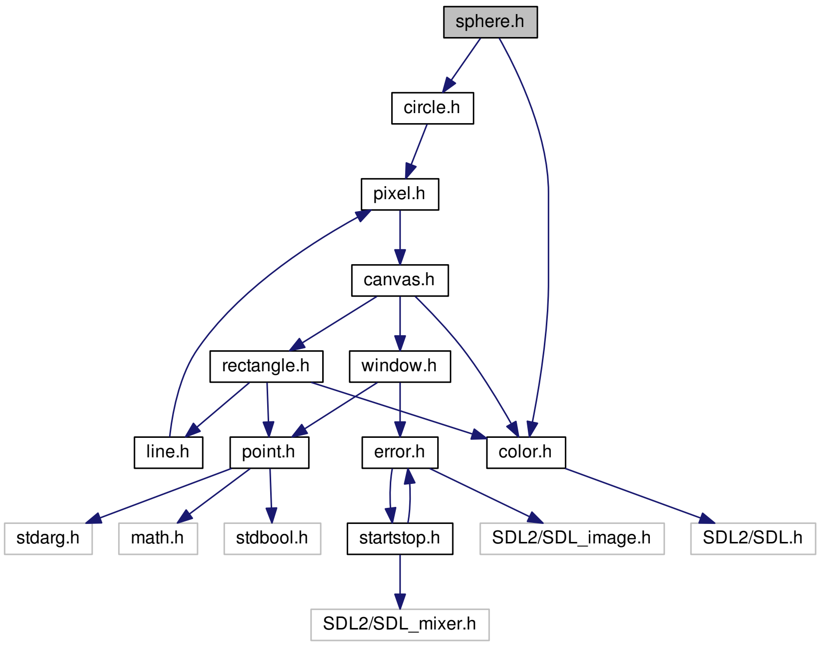
4.15.1.6 void sound_resume (void)

4.15.1.7 void sound_stop (void)

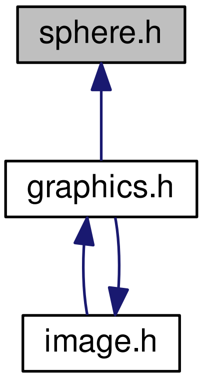
4.16 sphere.h File Reference

```
#include "circle.h"
#include "color.h"
```

Include dependency graph for sphere.h:



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



Data Structures

- struct Sphere

Functions

- void sphere_draw_fill (const Sphere ∗sphere, const Color ∗color)

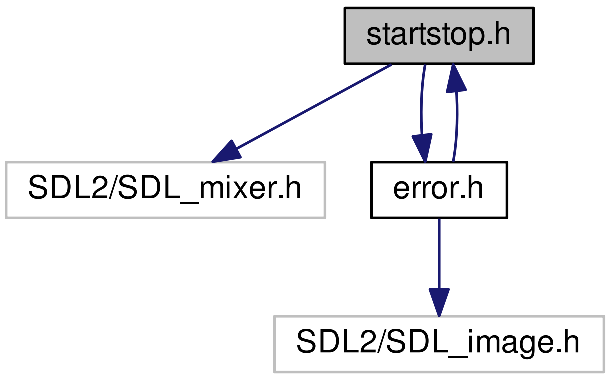
4.16.1 Function Documentation

4.16.1.1 void sphere_draw_fill (const Sphere ∗ *sphere,* const Color ∗ *color*)

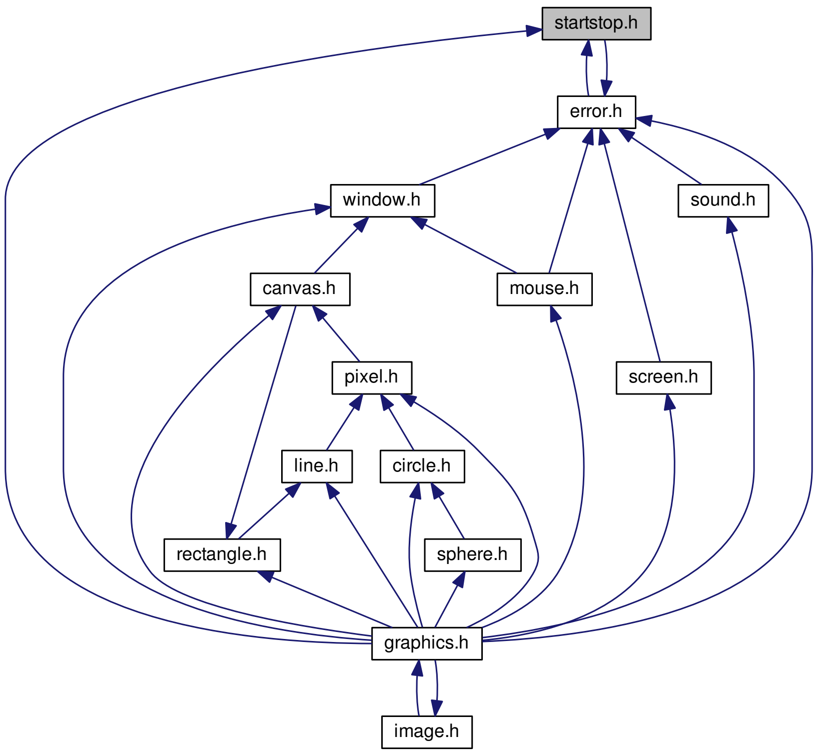
4.17 startstop.h File Reference

```
#include <SDL2/SDL_mixer.h>
#include "error.h"
```

Include dependency graph for startstop.h:



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



Functions

- void graphics_start (const Uint32 flags)
- void graphics_stop (void)

4.17.1 Function Documentation

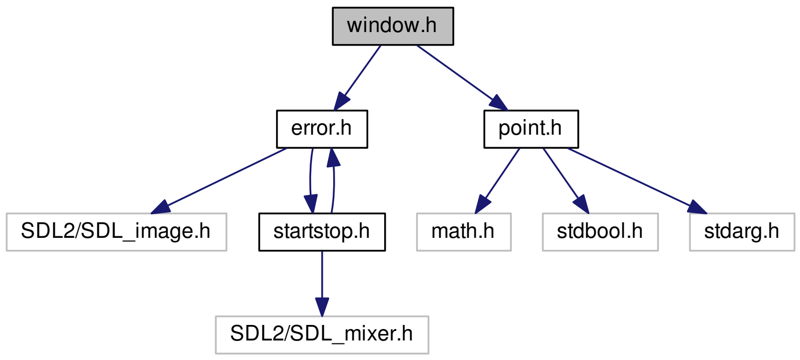
4.17.1.1 void graphics_start (const Uint32 *flags*)

4.17.1.2 void graphics_stop (void)

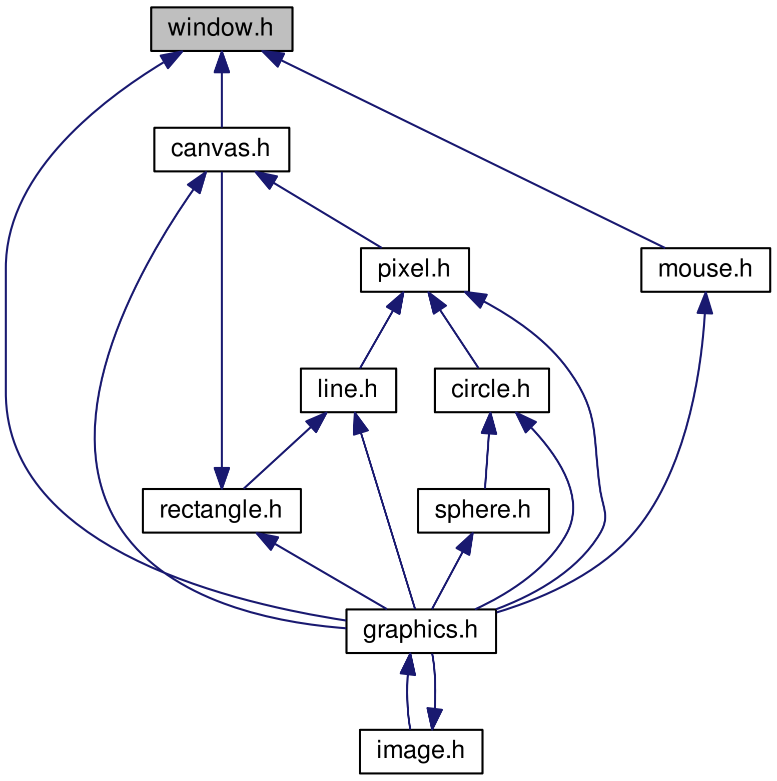
4.18 window.h File Reference

```
#include "error.h"
#include "point.h"
```

Include dependency graph for window.h:



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



Data Structures

- struct Window

Functions

- void window_create (Window ∗window, char ∗title, const Point ∗position, const Point ∗size, const Uint32 flags)
- void window_destroy (Window ∗window)
- void window_update (Window ∗window)

4.18.1 Function Documentation

4.18.1.1 void window_create (**Window** ∗ *window,* char ∗ *title,* const **Point** ∗ *position,* const **Point** ∗ *size,* const Uint32 *flags*)

4.18.1.2 void window_destroy (**Window** ∗ *window*)

4.18.1.3 void window_update (**Window** ∗ *window*)

Index