Jumpman

Generated by Doxygen 1.8.3.1

Tue Dec 10 2013 11:11:34

Contents

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

Chapter 2

Class Index

2.1 Class List

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

Chapter 3

File Index

3.1 File List

Here is a list of all files with brief descriptions:

Chapter 4

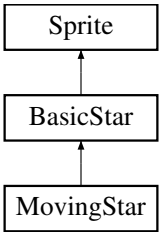
Class Documentation

4.1 BasicStar Class Reference

The most basic type of star, cannot move.

`#include <BasicStar.hh>`

Inheritance diagram for BasicStar:



Public Member Functions

- BasicStar (short y, int edge_coord)

  Constructor.
- ~BasicStar ()

  Destructor.
- virtual void takeAction ()

  The common star method for doing things.

Private Member Functions

- void randomizeSpawn (int edge_coord)

  Set the enemy's x to a random number.

Additional Inherited Members

4.1.1 Detailed Description

The most basic type of star, cannot move.

4.1.2 Constructor & Destructor Documentation

4.1.2.1 BasicStar::BasicStar (short *y*, int *edge_coord*)

Constructor.

Parameters

y	position of last BasicStar
edge_coord	how many pixels we need to move to escape the screen

4.1.2.2 BasicStar::~BasicStar ( )

Destructor.

4.1.3 Member Function Documentation

4.1.3.1 void BasicStar::randomizeSpawn (int *edge_coord*) [private]

Set the enemy's x to a random number.

Parameters

edge_coord	how many pixels we need to move to escape the screen

4.1.3.2 void BasicStar::takeAction ( ) [virtual]

The common star method for doing things.

Reimplemented in MovingStar.

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

- src/BasicStar.hh
- src/BasicStar.cc

4.2 Game Class Reference

Main game class.

`#include <Game.hh>`

Public Member Functions

- Game ()

  Constructor.
- ~Game ()

  Destructor.
- int run ()

  The game's main loop.

Private Member Functions

- int handlePlayerInput ()
  handles player input
- int letObjectsInteract ()
  lets objects interact with each other
- int drawObjectsToScreen ()
  draw updates to screen
- void addStars ()
  Add stars to star_list_ until they fill up the screen.
- int gameOver ()
  Triggers when the player fails.
- Game (const Game &)
  Disabled copy constructor.
- void operator= (const Game &)
  Disabled copy constructor.

Private Attributes

- GraphicsEngine * graphics_
  Instance for managing graphics.
- std::list< BasicStar * > star_list_
  List of all flying objects that the player can hit.
- Player player_
  Player instance.

4.2.1 Detailed Description

Main game class.

Game is the main class, which acts as the core of the application It's role is glue the other projects together in a structured way without doing any work by itself

4.2.2 Constructor & Destructor Documentation

4.2.2.1 Game::Game ( )

Constructor.

4.2.2.2 Game::~Game ( )

Destructor.

4.2.2.3 Game::Game (const Game &) [private]

Disabled copy constructor.

4.2.3 Member Function Documentation

4.2.3.1 void Game::addStars ( ) [private]

Add stars to star_list_ until they fill up the screen.

4.2.3.2 int Game::drawObjectsToScreen ( ) [private]

draw updates to screen

Returns

1 on graphics failure

4.2.3.3 int Game::gameOver ( ) [private]

Triggers when the player fails.

Returns

always returns 2

4.2.3.4 int Game::handlePlayerInput ( ) [private]

handles player input

Returns

1 if user want to quit the game

4.2.3.5 int Game::letObjectsInteract ( ) [private]

lets objects interact with each other

All action happens here

Returns

1 if player has died

4.2.3.6 void Game::operator= (const Game &) [private]

Disabled copy constructor.

4.2.3.7 int Game::run ( )

The game's main loop.

Returns

0 on success, 1 on failure and 2 on restart

4.2.4 Member Data Documentation

4.2.4.1 GraphicsEngine* Game::graphics_ [private]

Instance for managing graphics.

4.2.4.2 Player Game::player_ [private]

Player instance.

4.2.4.3 std::list<BasicStar *> Game::star_list_ [private]

List of all flying objects that the player can hit.

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

- src/Game.hh
- src/Game.cc

4.3 GraphicsEngine Class Reference

Class for managing graphics and events.

`#include <GraphicsEngine.hh>`

Public Member Functions

- GraphicsEngine (const std::string &title, const unsigned screen_width, const unsigned screen_height, const unsigned screen_bpp, const unsigned frame_rate)
  Contructor.
- ~GraphicsEngine ()
  Destructor.
- bool loadImage (const std::string &filename)
  Loads and image from the disk into the RAM.
- std::string getLastError () const
  returns a string describing last error that occurred
- void makeScreenBlack ()
  fills screen width black paint
- bool drawImage (const std::string &image, rect_t *srcrect, rect_t *dstrect)
  Draw an image to the game screen.
- void drawText (const std::string &text, unsigned x, unsigned y)
  Draw some text at the given location.
- bool updateScreen ()
  Flushes the screen so it's visible to the user.
- bool getEvent (event_t &event) const
  Non-blocking function to check event depending on user input.
- void waitForKeypress () const
  Waits until a key is pressed.
- unsigned screen_width () const
  Returns width of game screen.
- unsigned screen_height () const
  Returns height of game screen.

Private Member Functions

- GraphicsEngine (const GraphicsEngine &)
  Copy constructor (DO NOT USE)
- void operator= (const GraphicsEngine &)
  Copy constructor (DO NOT USE)

Private Attributes

- const std::string TITLE

  Title to display on the game's status bar.
- const unsigned SCREEN_WIDTH

  Width of the game screen.
- const unsigned SCREEN_HEIGHT

  Height of the game screen.
- const unsigned SCREEN_BPP

  Screen bits per pixel (color)
- const unsigned short FRAME_RATE

  Screen frames per second.
- std::map< std::string, SDL_Surface * > images_

  Map of filename and image we have loaded from disk.
- size_t time_of_last_refresh_

  The time updateScreen() last was called.
- SDL_Surface * screen_

  The game screen.
- TTF_Font * font_

  Font to use.

4.3.1 Detailed Description

Class for managing graphics and events.

GraphicsEngine handles all input from the user and handles all drawing of images on the screen. Only one GraphicsEngine can be active at one time

4.3.2 Constructor & Destructor Documentation

4.3.2.1 GraphicsEngine::GraphicsEngine (const std::string & *title*, const unsigned *screen_width*, const unsigned *screen_height*, const unsigned *screen_bpp*, const unsigned *frame_rate*)

Contructor.

Parameters

title	The title that will be seen on the titlebar
screen_width	Size of game screen's width
screen_height	Size of the game screen's height
screen_bpp	The amount of bits per pixel (color)
frame_rate	The frames per second we want to display

4.3.2.2 GraphicsEngine::~GraphicsEngine ( )

Destructor.

4.3.2.3 GraphicsEngine::GraphicsEngine (const GraphicsEngine &) [private]

Copy constructor (DO NOT USE)

4.3.3 Member Function Documentation

4.3.3.1 bool GraphicsEngine::drawImage (const std::string & *image,* rect_t * *srcrect,* rect_t * *dstrect*)

Draw an image to the game screen.

Parameters

image	filename of image to draw
srcrect	rectangle of image to draw from
dstrect	part to screen to draw to

Returns

true on success

4.3.3.2 void GraphicsEngine::drawText (const std::string & *text,* unsigned *x,* unsigned *y*)

Draw some text at the given location.

Parameters

text	text to draw
x	the center on the x-axis where we will draw
y	the center on the y-axis where we will draw

4.3.3.3 bool GraphicsEngine::getEvent (event_t & *event*) const

Non-blocking function to check event depending on user input.

Parameters

event	The event received from user

Returns

true if there are more pending events

4.3.3.4 string GraphicsEngine::getLastError ( ) const

returns a string describing last error that occurred

4.3.3.5 bool GraphicsEngine::loadImage (const std::string & *filename*)

Loads and image from the disk into the RAM.

Parameters

filename	Name of the image file inside graphics/ folder (example: to load graphics/player.png, filename should be "player")

Returns

true on success

4.3.3.6 void GraphicsEngine::makeScreenBlack ( )

fills screen width black paint

4.3.3.7 void GraphicsEngine::operator= (const GraphicsEngine &) [private]

Copy constructor (DO NOT USE)

4.3.3.8 unsigned GraphicsEngine::screen_height ( ) const

Returns height of game screen.

4.3.3.9 unsigned GraphicsEngine::screen_width ( ) const

Returns width of game screen.

4.3.3.10 bool GraphicsEngine::updateScreen ( )

Flushes the screen so it's visible to the user.

Returns

true on success

4.3.3.11 void GraphicsEngine::waitForKeypress ( ) const

Waits until a key is pressed.

4.3.4 Member Data Documentation

4.3.4.1 TTF_Font* GraphicsEngine::font_ [private]

Font to use.

4.3.4.2 const unsigned short GraphicsEngine::FRAME_RATE [private]

Screen frames per second.

4.3.4.3 std::map<std::string, SDL_Surface *> GraphicsEngine::images_ [private]

Map of filename and image we have loaded from disk.

4.3.4.4 SDL_Surface* GraphicsEngine::screen_ [private]

The game screen.

4.3.4.5 const unsigned GraphicsEngine::SCREEN_BPP [private]

Screen bits per pixel (color)

4.3.4.6 const unsigned GraphicsEngine::SCREEN_HEIGHT [private]

Height of the game screen.

4.3.4.7 const unsigned GraphicsEngine::SCREEN_WIDTH [private]

Width of the game screen.

4.3.4.8 size_t GraphicsEngine::time_of_last_refresh_ [private]

The time updateScreen() last was called.

4.3.4.9 const std::string GraphicsEngine::TITLE [private]

Title to display on the game's status bar.

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

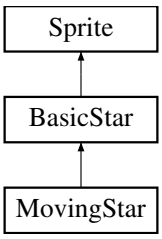
- src/GraphicsEngine.hh
- src/GraphicsEngine.cc

4.4 MovingStar Class Reference

A BasicStar which moves around.

`#include <MovingStar.hh>`

Inheritance diagram for MovingStar:



Public Member Functions

- MovingStar (short y, int edge_coord)

  Constructor.
- ~MovingStar ()

  Destructor.
- void takeAction ()

  Overloaded from BasicStar.

Private Attributes

- short dx_
- short dy_

Additional Inherited Members

4.4.1 Detailed Description

A BasicStar which moves around.

4.4.2 Constructor & Destructor Documentation

4.4.2.1 MovingStar::MovingStar (short *y*, int *edge_coord*)

Constructor.

Parameters

y	position of last BasicStar
edge_coord	how many pixels we need to move to escape the screen

4.4.2.2 MovingStar::~MovingStar ( )

Destructor.

4.4.3 Member Function Documentation

4.4.3.1 void MovingStar::takeAction ( ) [virtual]

Overloaded from BasicStar.

Reimplemented from BasicStar.

4.4.4 Member Data Documentation

4.4.4.1 short MovingStar::dx_ [private]

4.4.4.2 short MovingStar::dy_ [private]

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

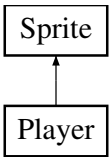
- src/MovingStar.hh
- src/MovingStar.cc

4.5 Player Class Reference

Player class.

`#include <Player.hh>`

Inheritance diagram for Player:



Public Member Functions

- Player ()

  Constructor.
- ∼Player ()

  Destructor.
- void reset ()

  resets player to starting position
- bool touches (Sprite ∗other)

  Check if player touches another Sprite class.
- void handleGravity (const signed screen_width)

  Manages player's movement depending on dx and dy.
- void jump (bool force_push=false)

  Jump a short distance into the air.
- void move (short dx)

  Set player to in movement on the x-axis.
- size_t score () const
- short imageX ()
- short imageY () const

Private Attributes

- short dx_
- short dy_
- bool standing_on_floor_
- size_t score_
- bool facing_direction_

Additional Inherited Members

4.5.1 Detailed Description

Player class.

4.5.2 Constructor & Destructor Documentation

4.5.2.1 Player::Player ( )

Constructor.

4.5.2.2 Player::∼Player ( )

Destructor.

4.5.3 Member Function Documentation

4.5.3.1 void Player::handleGravity (const signed *screen_width*)

Manages player's movement depending on dx and dy.

Parameters

screen_width	width of game screen

4.5.3.2 short Player::imageX ( ) [virtual]

Player image is a bit special so it has its own imageX()

Returns

x of the image the Sprite wants to draw

Reimplemented from Sprite.

4.5.3.3 short Player::imageY ( ) const

Returns

y of the image the Sprite wants to draw

4.5.3.4 void Player::jump (bool *force_push* = false)

Jump a short distance into the air.

Parameters

force_push	if true, this is not due to the player jumping

4.5.3.5 void Player::move (short *dx*)

Set player to in movement on the x-axis.

Parameters

dx	-1 to move left, +1 to move right, 0 to stay still

4.5.3.6 void Player::reset ( )

resets player to starting position

4.5.3.7 size_t Player::score ( ) const

Returns

the current player score

4.5.3.8 bool Player::touches (Sprite * *other*)

Check if player touches another Sprite class.

Parameters

other	Sprite to check if they touch

Returns

true if they touch

4.5.4 Member Data Documentation

4.5.4.1 short Player::dx_ [private]

Current x-axis movement

4.5.4.2 short Player::dy_ [private]

Current y-axis movement

4.5.4.3 bool Player::facing_direction_ [private]

Direction the player is facing, false = right

4.5.4.4 size_t Player::score_ [private]

Current player score

4.5.4.5 bool Player::standing_on_floor_ [private]

True if player has not yet jumped

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

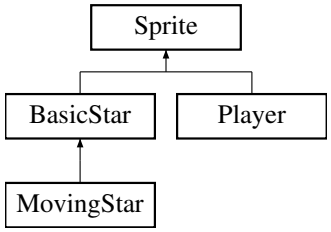
- src/Player.hh
- src/Player.cc

4.6 Sprite Class Reference

Base class for all images.

`#include <Sprite.hh>`

Inheritance diagram for Sprite:



Public Member Functions

- Sprite (std::string filename, short x, short y, unsigned short width, unsigned short height, short num_images)

  Constructor.
- Sprite (const Sprite &other)

  Copy Constructor.
- virtual ~Sprite ()

  Destructor.
- Sprite & operator= (const Sprite &other)

  Copy Constructor.
- const std::string & filename () const
- short x () const
- short y () const
- unsigned short width () const
- unsigned short height () const
- virtual short imageX ()
- short initialY () const

  the position of the y-axis this sprite was initiated at
- void modifyY (int mod)

  Modifies the Sprite's position of the y-axis.

Protected Attributes

- short current_image_
- short num_images_
- short x_
- short y_
- short initial_y_
- const unsigned short width_
- const unsigned short height_
- std::string filename_

4.6.1 Detailed Description

Base class for all images.

4.6.2 Constructor & Destructor Documentation

4.6.2.1 Sprite::Sprite (std::string *filename*, short *x*, short *y*, unsigned short *width*, unsigned short *height*, short *num_images*)

Constructor.

Parameters

filename	Name of the object's image-file inside graphics/
x	starting x-position
y	starting y-position
width	width of image
height	height of image
num_images	how many images this Sprite has

4.6.2.2 Sprite::Sprite (const Sprite & *other*)

Copy Constructor.

Parameters

other	Sprite to copy

4.6.2.3 Sprite::~Sprite ( ) [virtual]

Destructor.

4.6.3 Member Function Documentation

4.6.3.1 const std::string & Sprite::filename ( ) const

Returns

filename of image file

4.6.3.2 unsigned short Sprite::height ( ) const

Returns

Sprite's image's height

4.6.3.3 short Sprite::imageX ( ) [virtual]

Returns

x of the image the Sprite wants to draw

Reimplemented in Player.

4.6.3.4 short Sprite::initialY ( ) const

the position of the y-axis this sprite was initiated at

4.6.3.5 void Sprite::modifyY (int *mod*)

Modifies the Sprite's position of the y-axis.

Parameters

mod	Y axis modifier

4.6.3.6 Sprite & Sprite::operator= (const Sprite & *other*)

Copy Constructor.

Parameters

other	Sprite to copy

4.6.3.7 unsigned short Sprite::width ( ) const

Returns

Sprite's image's width

4.6.3.8 short Sprite::x ( ) const

Returns

Sprite's position of the x-axis

4.6.3.9 short Sprite::y ( ) const

Returns

Sprite's position of the y-axis

4.6.4 Member Data Documentation

4.6.4.1 short Sprite::current_image_ [protected]

If the sprite has many images, this handles them

4.6.4.2 std::string Sprite::filename_ [protected]

Sprite's image's filename

4.6.4.3 const unsigned short Sprite::height_ [protected]

Sprite's image's height

4.6.4.4 short Sprite::initial_y_ [protected]

4.6.4.5 short Sprite::num_images_ [protected]

How many images a Sprite has

4.6.4.6 const unsigned short Sprite::width_ [protected]

Sprite's original position on the y-axis Sprite's image's width

4.6.4.7 short Sprite::x_ [protected]

Sprite's position on the x-axis

4.6.4.8 short Sprite::y_ [protected]

Sprite's position on the y-acis

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

- src/Sprite.hh
- src/Sprite.cc

Chapter 5

File Documentation

5.1 src/BasicStar.cc File Reference

```
#include <random>
#include <chrono>
#include "BasicStar.hh"
```

5.2 src/BasicStar.hh File Reference

File containing the BasicStar class Header.

```
#include "Sprite.hh"
```

Classes

- class BasicStar

  The most basic type of star, cannot move.

5.2.1 Detailed Description

File containing the BasicStar class Header.

Author

Olle Kvarnström

Date

5.3 src/Game.cc File Reference

```
#include <iostream>
#include <string>
#include <algorithm>
#include <chrono>
#include <random>
#include "Game.hh"
#include "MovingStar.hh"
```

5.4 src/Game.hh File Reference

File containing the Game class Header.

```
#include <list>
#include "GraphicsEngine.hh"
#include "Player.hh"
#include "BasicStar.hh"
```

Classes

- class Game

  Main game class.

5.4.1 Detailed Description

File containing the Game class Header.

Author

Olle Kvarnström

Date

5.5 src/GraphicsEngine.cc File Reference

```
#include "GraphicsEngine.hh"
#include <iostream>
#include <algorithm>
```

5.6 src/GraphicsEngine.hh File Reference

File containing the GraphicsEngine class Header.

```
#include <string>
#include <map>
#include <SDL/SDL.h>
#include <SDL/SDL_image.h>
#include <SDL/SDL_ttf.h>
```

Classes

- class GraphicsEngine

  Class for managing graphics and events.

Typedefs

- typedef SDL_Rect rect_t

Enumerations

- enum event_t {
  LEFT, RIGHT, UP, STILL,
  NOTHING, QUIT }

  events describing user input

5.6.1 Detailed Description

File containing the GraphicsEngine class Header.

Author

Olle Kvarnström

Date

5.6.2 Typedef Documentation

5.6.2.1 typedef SDL_Rect rect_t

5.6.3 Enumeration Type Documentation

5.6.3.1 enum event_t

events describing user input

Enumerator

LEFT Player wants to move left

RIGHT Player wants to move right

UP Player wants to jump

STILL Player wants to stop moving

NOTHING Unknown input received

QUIT User wants to exit the game

5.7 src/main.cc File Reference

```
#include "Game.hh"
```

Functions

- int main ()

5.7.1 Function Documentation

5.7.1.1 int main ( )

5.8 src/MovingStar.cc File Reference

```
#include <chrono>
#include <random>
#include "MovingStar.hh"
```

5.9 src/MovingStar.hh File Reference

File containing the MovingStar class Header.

```
#include "BasicStar.hh"
```

Classes

- class MovingStar

  A BasicStar which moves around.

5.9.1 Detailed Description

File containing the MovingStar class Header.

Author

Olle Kvarnström

Date

5.10 src/Player.cc File Reference

```
#include "Player.hh"
```

5.11 src/Player.hh File Reference

File containing the Player class Header.

```
#include "Sprite.hh"
```

Classes

- class Player
  Player class.

5.11.1 Detailed Description

File containing the Player class Header.

Author

Olle Kvarnström

Date

5.12 src/Sprite.cc File Reference

```
#include "Sprite.hh"
```

5.13 src/Sprite.hh File Reference

File containing the Sprite class Header.

```
#include <string>
```

Classes

- class Sprite
  Base class for all images.

5.13.1 Detailed Description

File containing the Sprite class Header.

Author

Olle Kvarnström

Date

Index