GLUT polymorphic example

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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

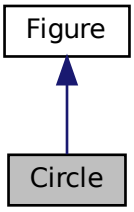
Class Documentation

3.1 Circle Class Reference

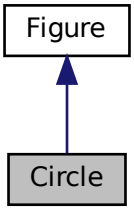
Derived class representing a circle, inheriting from the Figure class.

`#include <rectangle.h>`

Inheritance diagram for Circle:



Collaboration diagram for Circle:



Public Member Functions

- Circle (float r=0.5)

  Constructor for the Circle class.
- void display ()

  Function to display the circle.

Additional Inherited Members

3.1.1 Detailed Description

Derived class representing a circle, inheriting from the Figure class.

3.1.2 Constructor & Destructor Documentation

3.1.2.1 Circle()

```
Circle::Circle (
            float r = 0.5 )
```

Constructor for the Circle class.

Parameters

r	Radius of the circle.

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

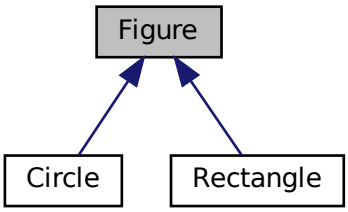
- rectangle.h
- rectangle.cpp

3.2 Figure Class Reference

Base class representing a geometric figure with common properties and methods.

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

Inheritance diagram for Figure:



Public Member Functions

- Figure (float angle=0)

  Constructor for the Figure class.
- void move (float dx, float dy)

  Moves the object by a specified vector.
- void rotate (float dalpha)

  Rotates the figure by a specified angle in degrees.
- virtual void display ()=0

  Pure virtual function to display the figure.

Protected Attributes

- float angle = 0

  Rotation angle in degrees.
- float **x** = 0
- float **y** = 0
- float red = 1

  Color components in the range <0;1>.
- float **green** = 1
- float **blue** = 0
- bool **is_visible** = true

3.2.1 Detailed Description

Base class representing a geometric figure with common properties and methods.

3.2.2 Constructor & Destructor Documentation

3.2.2.1 Figure()

```
Figure::Figure (
            float angle = 0 )
```

Constructor for the Figure class.

Parameters

angle	Initial rotation angle in degrees.

3.2.3 Member Function Documentation

3.2.3.1 move()

```
void Figure::move (
            float dx,
            float dy )
```

Moves the object by a specified vector.

Parameters

dx	The change in the x-coordinate.
dy	The change in the y-coordinate.

3.2.3.2 rotate()

```
void Figure::rotate (
            float dalpha )
```

Rotates the figure by a specified angle in degrees.

Parameters

dalpha	The angle in degrees.

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

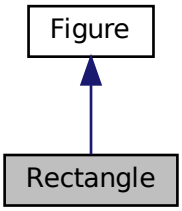
- rectangle.h
- rectangle.cpp

3.3 Rectangle Class Reference

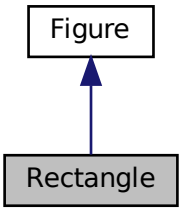
Derived class representing a rectangle, inheriting from the Figure class.

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

Inheritance diagram for Rectangle:



Collaboration diagram for Rectangle:



Public Member Functions

- Rectangle ()

  Default constructor for the Rectangle class.
- Rectangle (float scale)

  Constructor for the Rectangle class with a scale factor.
- Rectangle (float width, float height)

  Constructor for the Rectangle class with specified width and height.
- ∼Rectangle ()

  Destructor for the Rectangle class.
- void display ()

  Function to resize the rectangle.
- float getWidth () const

  Getter function to retrieve the width of the rectangle.
- void setWidth (float newWidth)

  Setter function to set a new width for the rectangle.

Additional Inherited Members

3.3.1 Detailed Description

Derived class representing a rectangle, inheriting from the Figure class.

3.3.2 Constructor & Destructor Documentation

3.3.2.1 Rectangle() [1/2]

```
Rectangle::Rectangle (
            float scale )
```

Constructor for the Rectangle class with a scale factor.

Parameters

scale	Scale factor to determine width and height.

3.3.2.2 Rectangle() [2/2]

```
Rectangle::Rectangle (
            float width,
            float height )
```

Constructor for the Rectangle class with specified width and height.

Parameters

width	Width of the rectangle.
height	Height of the rectangle.

3.3.3 Member Function Documentation

3.3.3.1 getWidth()

```
float Rectangle::getWidth ( ) const
```

Getter function to retrieve the width of the rectangle.

Returns

Width of the rectangle in meters.

3.3.3.2 setWidth()

```
void Rectangle::setWidth (
            float newWidth )
```

Setter function to set a new width for the rectangle.

Parameters

newWidth	New width of the rectangle.

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

- rectangle.h
- rectangle.cpp

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