My Project

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Contents

Chapter 1

OOP-polygons

A repository for my OOP in C++ project for The University of Manchester.

Project brief: "Design a class hierarchy for creating and manipulating polygon shapes, storing the vector co-ordinates of each vertex"

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

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

Chapter 3

Class Index

3.1 Class List

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

Chapter 4

Class Documentation

4.1 polygons::app< T > Class Template Reference

`#include <app.h>`

Public Member Functions

- **app** (manager< T > p_man, string p_fileName)
- void **start** ()
- void **end** ()

Protected Member Functions

- void **loop** ()
- string **getNewName** ()
- string **getExistingName** ()
- T **getNumber** (bool p_positiveDefinite, string p_msg)
- template<class U >
  char **getOption** (initializer_list< U > p_chars, string p_msg)

Protected Attributes

- manager< T > **m_man**
- string **m_fileName**
- bool **m_using**

4.1.1 Detailed Description

template<class T>class polygons::app< T >

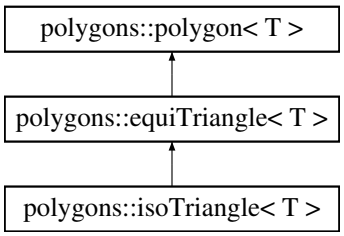
This is a cool comment about the app class

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

- app.h

4.2 polygons::equiTriangle< T > Class Template Reference

Inheritance diagram for polygons::equiTriangle< T >:



Public Member Functions

- **equiTriangle** (T p_x, T p_y, T p_L)
- string **type** ()

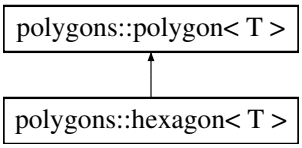
Additional Inherited Members

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

- polygon.h

4.3 polygons::hexagon< T > Class Template Reference

Inheritance diagram for polygons::hexagon< T >:



Public Member Functions

- **hexagon** (T p_x, T p_y, T p_L)
- string **type** ()

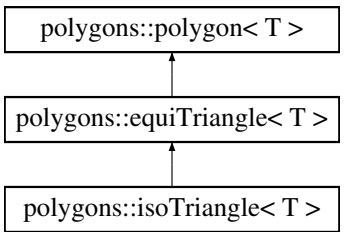
Additional Inherited Members

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

- polygon.h

4.4 polygons::isoTriangle< T > Class Template Reference

Inheritance diagram for polygons::isoTriangle< T >:



Public Member Functions

- **isoTriangle** (T p_x, T p_y, T p_B, T p_L)
- string **type** ()

Additional Inherited Members

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

- polygon.h

4.5 polygons::manager< T > Class Template Reference

Public Member Functions

- void **add** (polygon< T > *p_polygon, string p_name)
- bool **exists** (string p_name)
- polygon< T > *& **get** (string p_name)
- void **remove** (string p_name)
- void **listAll** ()
- void **display** (string p_filename)

Protected Attributes

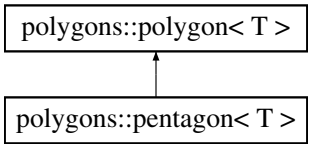
- map< string, polygon< T > * > **m_library**

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

- manager.h

4.6 polygons::pentagon< T > Class Template Reference

Inheritance diagram for polygons::pentagon< T >:



Public Member Functions

- **pentagon** (T p_x, T p_y, T p_L)
- string **type** ()

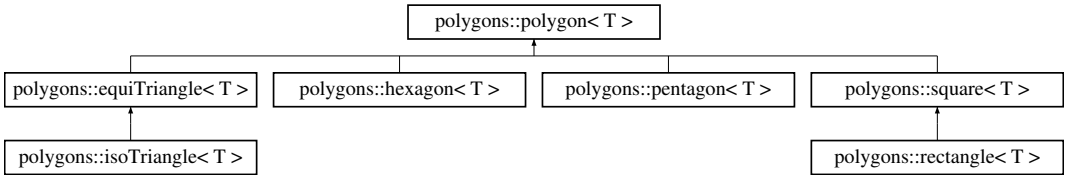
Additional Inherited Members

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

- polygon.h

4.7 polygons::polygon< T > Class Template Reference

Inheritance diagram for polygons::polygon< T >:



Public Member Functions

- **polygon** (int p_N, T p_x, T p_y, T p_L)
- template<class U >
  polygon (initializer_list< U > li)
- int **N** ()
- vertex< T > **centre** ()
- vertex< T > **normal** ()
- bool **modified** ()
- virtual string **type** ()=0
- void **listVertices** ()
- const vertex< T > & **operator[]** (int p_i)
- void **translate** (T p_x, T p_y, T p_z)
- void **scale** (T p_x, T p_y, T p_z, T p_fx, T p_fy, T p_fz)
- void **scaleCentre** (T p_fx, T p_fy, T p_fz)
- void **rotate** (T p_x1, T p_y1, T p_z1, T p_x2, T p_y2, T p_z2, T p_theta)
- void **rotateCentre** (T p_theta)

Protected Attributes

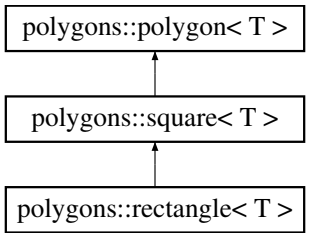
- vector< vertex< T > > **m_vertices**
- bool **m_modified** {false}

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

- polygonBase.h

4.8 polygons::rectangle< T > Class Template Reference

Inheritance diagram for polygons::rectangle< T >:



Public Member Functions

- **rectangle** (T p_x, T p_y, T p_W, T p_H)
- string **type** ()

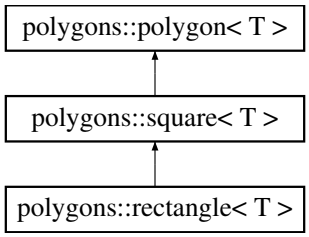
Additional Inherited Members

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

- polygon.h

4.9 polygons::square< T > Class Template Reference

Inheritance diagram for polygons::square< T >:



Public Member Functions

- **square** (T p_x, T p_y, T p_L)
- string **type** ()

Additional Inherited Members

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

- polygon.h

4.10 polygons::vertex< T > Class Template Reference

Public Member Functions

- **vertex** (T p_x1, T p_x2, T p_x3)
- **vertex** (const vertex< T > &)
- vertex< T > & **operator=** (const vertex< T > &)
- T **x** ()
- T **y** ()
- T **z** ()
- T **x** (int p_i)
- void **x** (T p_x)
- void **y** (T p_y)
- void **z** (T p_z)
- void **pos** (T p_x, T p_y, T p_z)
- void **translate** (T p_x, T p_y, T p_z)
- void **rotateX** (T p_theta)
- void **rotateY** (T p_theta)
- void **rotateZ** (T p_theta)
- void **rotate** (T p_x1, T p_y1, T p_z1, T p_x2, T p_y2, T p_z2, T p_theta)
- void **scale** (T p_x, T p_y, T p_z, T p_fx, T p_fy, T p_fz)

Protected Attributes

- T **m_x** [3]

Friends

- ostream & **operator**<< (ostream &p_outStream, vertex< T > const &p_vtx)

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

- vertex.h

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