Asteroids

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Todo List

Member GLFunctions::capsule(float _radius, float _height, int _precision) add UV's at some stage

Chapter 2

Class Index

2.1 Class Hierarchy

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

Chapter 3

Class Index

3.1 Class List

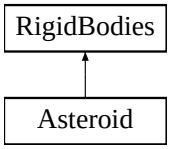
Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 4

Class Documentation

4.1 Asteroid Class Reference

Inheritance diagram for Asteroid::



Public Member Functions

- **Asteroid** (const Vec4 &_pos, const Vec4 &_colour, const Vec4 &_size, float _radius, Vec4 _dest)
- void **destroy** ()
- void **split** ()
- void **draw** ()
- Vec4 **getAsteroidPos** ()

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

- include/asteroid.h
- src/asteroid.cpp

4.2 RigidBodies::BBOX Struct Reference

Public Attributes

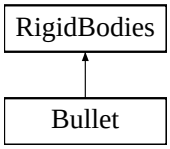
- Vec4 **m_vecMax**
- Vec4 **m_vecMin**

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

- include/rigidbodies (wg0644's conflicted copy 2014-04-02).h
- include/rigidbodies.h

4.3 Bullet Class Reference

Inheritance diagram for Bullet::



Public Member Functions

- **Bullet** (const Vec4 &_pos, const Vec4 &_offset, const Vec4 &_colour, const Vec4 &_size)
- void **draw** ()
- void **destroy** ()
- Vec4 **getBulletPosition** ()

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

- include/bullet.h
- src/bullet (wg0644's conflicted copy 2014-03-29).cpp
- src/bullet.cpp

4.4 Camera Class Reference

Public Member Functions

- void **rotateCam** (Vec4 _player)
- void **panCam** ()
- void **setPos** (Vec4 _m_player)

Public Attributes

- Vec4 **m_position**
- float **m_rotation**
- Mat4 **m_rotMat**
- Vec4 **m_lookPos**

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

- include/camera.h
- src/camera.cpp

4.5 GLFunctions Class Reference

Static Public Member Functions

- static void **cube** (GLfloat _w, GLfloat _h, GLfloat _d)
- static void **lookAt** (Vec4 _eye, Vec4 _look, Vec4 _up)
- static void **perspective** (float _fovy, float _aspect, float _zNear, float _zFar)
- static float **radians** (float _deg)
- static void **sphere** (float _radius, int _precision)
- static void capsule (float _radius, float _height, int _precision)
- static void **cylinder** (float _radius, const float _height, int _slices, int _stacks)
- static void **cone** (float _base, float _height, int _slices, int _stacks)
- static void **disk** (float _radius, int _slices)
- static void **torus** (float _minorRadius, float _majorRadius, int _nSides, int _nRings)

4.5.1 Member Function Documentation

4.5.1.1 void GLFunctions::capsule (float *_radius*, float *_height*, int *_precision*) [static]

Todo

add UV's at some stage

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

- include/GLFunctions.h
- src/GLFunctions.cpp

4.6 HUD Class Reference

Public Member Functions

- void **incScore** ()
- void **loseLife** ()
- int **printScore** ()

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

- include/hud.h
- src/hud.cpp

4.7 Map Class Reference

Public Member Functions

- void **drawMap** ()

Public Attributes

- Vec4 **m_size**
- Vec4 **m_camPosition**

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

- include/map.h
- include/map.cpp
- src/map.cpp

4.8 Mat4 Class Reference

Public Member Functions

- **Mat4** (float _s=1.0f)
- **Mat4** (const Mat4 &_r)
- void **identity** ()
- void **rotateX** (float _deg)
- void **rotateY** (float _deg)
- void **rotateZ** (float _deg)
- void **transpose** ()
- Mat4 **matXmat** (Mat4 _mat1, Mat4 _mat2)
- void **loadModelView** () const
- void **loadProjection** () const

Public Attributes

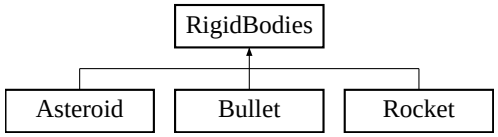
- union {
  float **m_m** [4][4]
  float **m_openGL** [16]
  struct {
  float **m_00**
  float **m_01**
  float **m_02**
  float **m_03**
  float **m_10**
  float **m_11**
  float **m_12**
  float **m_13**
  float **m_20**
  float **m_21**
  float **m_22**
  float **m_23**
  float **m_30**
  float **m_31**
  float **m_32**
  float **m_33**
  }
  };

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

- include/Mat4.h
- src/Mat4.cpp

4.9 RigidBodies Class Reference

Inheritance diagram for RigidBodies::



Classes

- struct BBOX

Public Types

- enum **BodyType** { **BT_BULLET**, **BT_ASTEROID**, **BT_ROCKET** }
- typedef struct RigidBodies::BBOX **bBox**
- typedef struct RigidBodies::BBOX **bBox**

Public Member Functions

- **RigidBodies** (const Vec4 &_pos, const Vec4 &_colour, const Vec4 &_size)
- void **drawSphere** ()
- **RigidBodies** (const Vec4 &_pos, const Vec4 &_colour, const Vec4 &_size)
- void **drawSphere** ()
- bool **checkCollision** (const RigidBodies &_obstacle)
- Vec4 **getPos** () const
- **RigidBodies** (const Vec4 &_pos, const Vec4 &_colour, const Vec4 &_size, const BodyType &_type)

- BodyType **getType** ()
- virtual void **draw** ()=0
- virtual void **update** ()=0
- void **drawSphere** ()
- bool **checkCollision** (RigidBodies *_obstacle)
- Vec4 **getPos** () const

Public Attributes

- bBox **m_bodyBox**
- BodyType **m_type**

Protected Member Functions

- void **update** ()
- void **update** ()
- void **update** ()

Protected Attributes

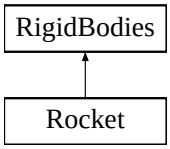
- Vec4 **m_vertArray**
- Vec4 **m_colour**
- Vec4 **m_size**
- Vec4 **m_position**
- Vec4 **m_direction**
- float **m_speed**
- int **m_time**

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

- include/rigidbodies (wg0644's conflicted copy 2014-03-29).h
- include/rigidbodies.h
- include/rigidbodies (wg0644's conflicted copy 2014-04-02).h
- src/rigidbodies.cpp

4.10 Rocket Class Reference

Inheritance diagram for Rocket::



Public Types

- enum **direction** { **TURN**, **THRUST** }

Public Member Functions

- **Rocket** (const Vec4 &_pos, const Vec4 &_colour, const Vec4 &_size)
- void **move** (float _offset, float _rotation)
- void **getInput** ()
- void **destroy** ()
- void **draw** ()
- void **fire** ()
- Vec4 **getPlayerPosition** ()
- std::vector< Bullet > & **getBullets** ()

Public Attributes

- float **m_collisionRad**
- float **m_rotation**
- float **m_acceleration**
- std::vector< Bullet > **m_bullets**

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

- include/rocket.h
- src/rocket (wg0644's conflicted copy 2014-03-29 (1)).cpp
- src/rocket (wg0644's conflicted copy 2014-03-29).cpp
- src/rocket.cpp

4.11 Vec4 Class Reference

Public Member Functions

- Vec4 (float _x=0.0f, float _y=0.0f, float _z=0.0f, float _w=1.0f)

  ctor

- void print () const

  method to print attributes

- float length () const

  length

- float lengthSquared () const

  length^2

- void normalise ()

  normalise the attributes

- float dot (const Vec4 &_b) const

  dot product

- float dot (const Vec4 &_a, const Vec4 &_b) const

  dot product

- Vec4 cross (const Vec4 &_b) const

  cross product of this and b

- Vec4 operator* (float _rhs)

  cross product of this and b

- Vec4 **operator-** (const Vec4 &_rhs) const
- void **operator*=** (float _rhs)
- Vec4 **operator+** (const Vec4 &_rhs) const
- void **operator+=** (const Vec4 &_rhs)
- void **operator-=** (const Vec4 &_rhs)
- bool **operator==** (const Vec4 &_rhs) const
- void **colourGL** () const
- void **normalGL** () const
- void **vertexGL** () const
- void **normalize** ()
- void **translateGL** () const
- void **set** (float _x, float _y, float _z, float _w=1.0)
- Vec4 **matXVec** (Mat4 _mat, Vec4 _vec)

Public Attributes

- union {
  struct {
  float m_x
  the x element of the vector
  float m_y
  the y element of the vector
  float m_z
  the z element of the vector
  float m_w
  the w element of the vector
  }
  struct {
  float m_r
  the x element of the vector
  float m_g
  the y element of the vector
  float m_b
  the z element of the vector
  float m_a
  the w element of the vector
  }
  float **m_openGL** [4]
  };

4.11.1 Constructor & Destructor Documentation

4.11.1.1 Vec4::Vec4 (float *_x* = `0.0f`, float *_y* = `0.0f`, float *_z* = `0.0f`, float *_w* = `1.0f`) `[inline]`

ctor

Parameters:

← ***_x*** the x value default 0
← ***_y*** the y value default 0
← ***_z*** the z value default 0
← ***_w*** the w value default 1

4.11.2 Member Function Documentation

4.11.2.1 Vec4 Vec4::cross (const Vec4 & *_b*) const

cross product of this and b

Parameters:

← ***_b*** the vector to cross _b

Returns:

a new vector this cross _b

4.11.2.2 Vec4 Vec4::operator∗ (float *_rhs*)

cross product of this and b

Parameters:

← ***_b*** the vector to cross _b

Returns:

a new vector this cross _b

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

- include/Vec4.h
- src/Vec4.cpp

4.12 World Class Reference

Public Member Functions

- **World** (float _worldSize, const Vec4 &_spawnPosition=Vec4(0, 0, 0))
- void update ()

- void draw ()

- void spawnAsteroid ()

- void initAsteroid ()

- void fireBullet ()

- Vec4 getPlayerPosition ()

- void movePlayer (float _move, float _rotation)

- void makeBullets ()

- float getPlayerRotation ()

- void initRocket ()

- void drawRocket ()

- void drawAsteroids ()

- void drawBullets ()

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

- include/World.h
- src/world.cpp