VisDaVol

V1.04

Generated by Doxygen 1.7.1

Wed Nov 2 2011 13:35:38

Contents

1 Class Index 1

1.1 Class List 1

2 File Index 3

2.1 File List 3

3 Class Documentation 5

3.1 colorMap_item Struct Reference 5

3.1.1 Member Data Documentation 5

3.1.1.1 alfa 5

3.1.1.2 b 5

3.1.1.3 g 5

3.1.1.4 r 5

4 File Documentation 7

4.1 /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/glsl.cpp File Reference 7

4.1.1 Function Documentation 8

4.1.1.1 printProgramInfoLog 8

4.1.1.2 printShaderInfoLog 8

4.1.1.3 setShaders 8

4.1.1.4 textFileRead 8

4.1.1.5 textFileWrite 8

4.1.2 Variable Documentation 8

4.1.2.1 f 8

4.1.2.2 f2 8

4.1.2.3 g 8

4.1.2.4 gh 8

4.1.2.5 gw 8

4.1.2.6 p 8
4.1.2.7 v 8
4.2 /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/glsl.h File Reference 8
4.2.1 Function Documentation 9
4.2.1.1 printProgramInfoLog 9
4.2.1.2 printShaderInfoLog 9
4.2.1.3 setShaders 9
4.2.1.4 textFileRead 9
4.2.1.5 textFileWrite 9
4.3 /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/main.cpp File Reference 9
4.3.1 Define Documentation 11
4.3.1.1 ESCAPE 11
4.3.1.2 X 11
4.3.1.3 Y 11
4.3.1.4 Z 11
4.3.2 Function Documentation 11
4.3.2.1 abs 11
4.3.2.2 clamp 11
4.3.2.3 createPreintegrationTable 13
4.3.2.4 DrawCube 13
4.3.2.5 DrawCube1 13
4.3.2.6 DrawGLScene 13
4.3.2.7 DrawSliceStack 13
4.3.2.8 FindAbsMaximum 13
4.3.2.9 GerenciaMouse 13
4.3.2.10 InitDraw 13
4.3.2.11 InitGL 13
4.3.2.12 InitTexture 13
4.3.2.13 InvertMatrix 13
4.3.2.14 keyPressed 13
4.3.2.15 main 13
4.3.2.16 MatrixInvRotate 13
4.3.2.17 MatrixMultiply 13
4.3.2.18 MatVecMultiply 13
4.3.2.19 MoveMouse 13

4.3.2.20 MoveMouseBotaoPressionado 13
4.3.2.21 readRAW 13
4.3.2.22 ReSizeGLScene 13
4.3.2.23 VectorRotate 13
4.3.3 Variable Documentation 13
4.3.3.1 btStatus 13
4.3.3.2 d_height 13
4.3.3.3 d_nsli 13
4.3.3.4 d_slices 13
4.3.3.5 d_width 13
4.3.3.6 high_shininess 13
4.3.3.7 light_ambient 13
4.3.3.8 light_diffuse 13
4.3.3.9 light_position 13
4.3.3.10 light_specular 13
4.3.3.11 m 13
4.3.3.12 mat_ambient 13
4.3.3.13 mat_diffuse 13
4.3.3.14 mat_specular 13
4.3.3.15 oldXp 13
4.3.3.16 oldXr 13
4.3.3.17 oldYp 13
4.3.3.18 oldYr 13
4.3.3.19 pcube 13
4.3.3.20 raw 13
4.3.3.21 rcubex 13
4.3.3.22 rcubey 13
4.3.3.23 stick 13
4.3.3.24 texData 13
4.3.3.25 texdepth 13
4.3.3.26 texheight 13
4.3.3.27 texid 13
4.3.3.28 texwidth 13
4.3.3.29 theVolume 13
4.3.3.30 tick 13
4.3.3.31 tk 13

4.3.3.32 TproxyGeometry 13

4.3.3.33 window 13

4.3.3.34 winHeight 13

4.3.3.35 winWidth 13

4.4 /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/transf.cpp File Reference 13

4.4.1 Function Documentation 14

4.4.1.1 colorMapRead 14

4.4.1.2 colorMapWrite 14

4.5 /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/transf.h File Reference 15

4.5.1 Typedef Documentation 15

4.5.1.1 COLORMAP 15

4.5.1.2 COLORMAP_ITEM 15

4.5.2 Function Documentation 15

4.5.2.1 colorMapRead 15

4.5.2.2 colorMapWrite 16

Chapter 1

Class Index

1.1 Class List

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

colorMap_item 5

Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

/home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/glsl.cpp 7

/home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/glsl.h 8

/home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/main.cpp 9

/home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/transf.cpp 13

/home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/transf.h 15

Chapter 3

Class Documentation

3.1 colorMap_item Struct Reference

```
#include <transf.h>
```

Public Attributes

- int r
- int g
- int b
- int alfa

3.1.1 Member Data Documentation

3.1.1.1 int colorMap_item::alfa

3.1.1.2 int colorMap_item::b

3.1.1.3 int colorMap_item::g

3.1.1.4 int colorMap_item::r

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

- /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/transf.h

Chapter 4

File Documentation

4.1 /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/worksp File Reference

```
#include "glsl.h"
```

Functions

- char ∗ textFileRead (char ∗fn)
- int textFileWrite (char ∗fn, char ∗s)
- void printShaderInfoLog (GLuint obj)
- void printProgramInfoLog (GLuint obj)
- void setShaders (void)

Variables

- GLuint v
- GLuint f
- GLuint f2
- GLuint p
- GLuint g
- int gw
- int gh

4.1.1 Function Documentation

4.1.1.1 void printProgramInfoLog (GLuint *obj*)

4.1.1.2 void printShaderInfoLog (GLuint *obj*)

4.1.1.3 void setShaders (void)

4.1.1.4 char∗ textFileRead (char ∗ *fn*)

4.1.1.5 int textFileWrite (char ∗ *fn,* char ∗ *s*)

4.1.2 Variable Documentation

4.1.2.1 GLuint f

4.1.2.2 GLuint f2

4.1.2.3 GLuint g

4.1.2.4 int gh

4.1.2.5 int gw

4.1.2.6 GLuint p

4.1.2.7 GLuint v

4.2 /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/worksp File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <GL/glew.h>
#include <GL/glut.h>
```

Functions

- char ∗ textFileRead (char ∗fn)
- int textFileWrite (char ∗fn, char ∗s)
- void printShaderInfoLog (GLuint obj)
- void printProgramInfoLog (GLuint obj)
- void setShaders (void)

4.2.1 Function Documentation

4.2.1.1 void printProgramInfoLog (GLuint *obj*)

4.2.1.2 void printShaderInfoLog (GLuint *obj*)

4.2.1.3 void setShaders (void)

4.2.1.4 char∗ textFileRead (char ∗ *fn*)

4.2.1.5 int textFileWrite (char ∗ *fn,* char ∗ *s*)

4.3 /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/worksp File Reference

```
#include <unistd.h>
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "glsl.h"
```

Defines

- #define X 0
- #define Y 1
- #define Z 2
- #define ESCAPE 27

Functions

- GLubyte ∗ readRAW (int argc, char ∗∗argv)
- GLubyte clamp (double value, const int min, const int max)

  Esta função faz com que um valor fique restrito dentro de uma faixa de valores definida por um valor mínimo e máximo.

- void createPreintegrationTable (GLubyte ∗Table)
- void DrawCube1 ()
- float abs (float x)
- int FindAbsMaximum (GLfloat pViewVector[4])
- void MatrixMultiply (GLfloat mtxin1[16], GLfloat mtxin2[16], GLfloat mtxout[16])
- void MatrixInvRotate (GLfloat mtxin[16], GLfloat mtxout[16])
- void VectorRotate (const GLfloat vin[4], const GLfloat mtx[16], GLfloat vout[4])
- void InvertMatrix (GLfloat mtxin[16], GLfloat mtxout[16])
- void DrawSliceStack (int proxyGeometry)
- void MatVecMultiply (GLfloat pModelViewMatrixInv[16], GLfloat pViewVector[4])
- void DrawCube ()
- void InitTexture ()

- void InitDraw (void)
- void InitGL (int Width, int Height)
- void ReSizeGLScene (int Width, int Height)
- void DrawGLScene ()
- void keyPressed (unsigned char key, int x, int y)
- void MoveMouseBotaoPressionado (int x, int y)
- void MoveMouse (int x, int y)
- void GerenciaMouse (int button, int state, int x, int y)
- int main (int argc, char ∗∗argv)

Variables

- int window
- float rcubex = 0.0f
- float rcubey = 0.0f
- float pcube = -2.0f
- char btStatus = 0
- GLuint texid
- int texwidth = 256
- int texheight = 256
- int texdepth = 128
- float tick = 0
- float stick = 1
- GLubyte ∗ texData
- int d_width
- int d_height
- int d_slices
- int d_nsli
- GLubyte ∗ raw
- const GLfloat light_ambient [ ] = { 0.0f, 0.0f, 0.0f, 1.0f }
- const GLfloat light_diffuse [ ] = { 1.0f, 1.0f, 1.0f, 1.0f }
- const GLfloat light_specular [ ] = { 1.0f, 1.0f, 1.0f, 1.0f }
- const GLfloat light_position [ ] = { 2.0f, 5.0f, 5.0f, 0.0f }
- const GLfloat mat_ambient [ ] = { 0.7f, 0.7f, 0.7f, 1.0f }
- const GLfloat mat_diffuse [ ] = { 0.8f, 0.8f, 0.8f, 1.0f }
- const GLfloat mat_specular [ ] = { 1.0f, 1.0f, 1.0f, 1.0f }
- const GLfloat high_shininess [ ] = { 100.0f }
- int winWidth
- int winHeight
- int oldXr
- int oldYr
- int oldXp
- int oldYp
- float tk
- GLuint theVolume [6]
- float m [16]
- int TproxyGeometry = 0

4.3.1 Define Documentation

4.3.1.1 #define ESCAPE 27

4.3.1.2 #define X 0

4.3.1.3 #define Y 1

4.3.1.4 #define Z 2

4.3.2 Function Documentation

4.3.2.1 float abs (float *x*)

4.3.2.2 GLubyte clamp (double *value,* const int *min,* const int *max*)

Esta função faz com que um valor fique restrito dentro de uma faixa de valores definida por um valor mínimo e máximo.

/∗!

Author

Agnus A. Horta.

Since

30/10/2011

Version

1.0

Parameters

value um float que representa o valor a ser truncado.

min um inteiro que representa constante que define o valor inicial de truncamento.

max um inteiro que representa constante que define o valor final de truncamento.

Returns

um inteiro.

4.3.2.3 void createPreintegrationTable (GLubyte * *Table*)

4.3.2.4 void DrawCube ( )

4.3.2.5 void DrawCube1 ( )

4.3.2.6 void DrawGLScene ( )

4.3.2.7 void DrawSliceStack (int *proxyGeometry*)

4.3.2.8 int FindAbsMaximum (GLfloat *pViewVector[4]*)

4.3.2.9 void GerenciaMouse (int *button,* int *state,* int *x,* int *y*)

4.3.2.10 void InitDraw (void)

4.3.2.11 void InitGL (int *Width,* int *Height*)

4.3.2.12 void InitTexture ( )

4.3.2.13 void InvertMatrix (GLfloat *mtxin[16],* GLfloat *mtxout[16]*)

4.3.2.14 void keyPressed (unsigned char *key,* int *x,* int *y*)

4.3.2.15 int main (int *argc,* char ** *argv*)

4.3.2.16 void MatrixInvRotate (GLfloat *mtxin[16],* GLfloat *mtxout[16]*)

4.3.2.17 void MatrixMultiply (GLfloat *mtxin1[16],* GLfloat *mtxin2[16],* GLfloat *mtxout[16]*)

4.3.2.18 void MatVecMultiply (GLfloat *pModelViewMatrixInv[16],* GLfloat *pViewVector[4]*)

4.3.2.19 void MoveMouse (int *x,* int *y*)

4.3.2.20 void MoveMouseBotaoPressionado (int *x,* int *y*)

4.3.2.21 GLubyte * readRAW (int *argc,* char ** *argv*)

4.3.2.22 void ReSizeGLScene (int *Width,* int *Height*)

4.3.2.23 void VectorRotate (const GLfloat *vin[4],* const GLfloat *mtx[16],* GLfloat *vout[4]*)

4.3.3 Variable Documentation

4.3.3.1 char btStatus = 0

4.3.3.2 int d_height

4.3.3.3 int d_nsli

4.3.3.4 int d_slices

4.3.3.5 int d_width

4.3.3.6 const GLfloat high_shininess[ ] = { 100.0f }

4.3.3.7 const GLfloat light_ambient[ ] = { 0.0f, 0.0f, 0.0f, 1.0f }

4.3.3.8 const GLfloat light_diffuse[ ] = { 1.0f, 1.0f, 1.0f, 1.0f }

4.3.3.9 const GLfloat light_position[ ] = { 2.0f, 5.0f, 5.0f, 0.0f }

Functions

- void colorMapRead (char ∗fn, COLORMAP ∗cm)

  Esta função realiza a leitura de um mapa de cores que representa a função de transferência.

- void colorMapWrite (char ∗fn, COLORMAP ∗cm)

  Esta função realiza escrita de um mapa de cores que representa a função de transferência.

4.4.1 Function Documentation

4.4.1.1 void colorMapRead (char ∗ *fn,* COLORMAP ∗ *cm*)

Esta função realiza a leitura de um mapa de cores que representa a função de transferência.

/∗!

Author

Agnus A. Horta.

Since

02/11/2011

Version

1.0

Parameters

fn uma cadeia de caracteres que representa o nome do arquivo que contém o mapa de cores

cm representa o ponteiro que indica onde será armazenado o mapa de cores

4.4.1.2 void colorMapWrite (char ∗ *fn,* COLORMAP ∗ *cm*)

Esta função realiza escrita de um mapa de cores que representa a função de transferência.

/∗!

Author

Agnus A. Horta.

Since

02/11/2011

Version

1.0

Parameters

fn uma cadeia de caracteres que representa o nome do arquivo que conterá o mapa de cores

cm representa o ponteiro que indica onde esta armazenado o mapa de cores

4.5 /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/worksp File Reference

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

Classes

- struct colorMap_item

Typedefs

- typedef struct colorMap_item COLORMAP_ITEM
- typedef COLORMAP_ITEM COLORMAP [256]

Functions

- void colorMapRead (char ∗fn, COLORMAP ∗cm)

  Esta função realiza a leitura de um mapa de cores que representa a função de transferência.

- void colorMapWrite (char ∗fn, COLORMAP ∗cm)

  Esta função realiza escrita de um mapa de cores que representa a função de transferência.

4.5.1 Typedef Documentation

4.5.1.1 typedef COLORMAP_ITEM COLORMAP[256]

4.5.1.2 typedef struct colorMap_item COLORMAP_ITEM

4.5.2 Function Documentation

4.5.2.1 void colorMapRead (char ∗ *fn*, COLORMAP ∗ *cm*)

Esta função realiza a leitura de um mapa de cores que representa a função de transferência.

/∗!

Author

Agnus A. Horta.

Since

02/11/2011

Version

1.0

Parameters

fn uma cadeia de caracteres que representa o nome do arquivo que contém o mapa de cores

cm representa o ponteiro que indica onde será armazenado o mapa de cores

4.5.2.2 void colorMapWrite (char * *fn*, COLORMAP * *cm*)

Esta função realiza escrita de um mapa de cores que representa a função de transferência.

/*!

Author

Agnus A. Horta.

Since

02/11/2011

Version

1.0

Parameters

fn uma cadeia de caracteres que representa o nome do arquivo que conterá o mapa de cores

cm representa o ponteiro que indica onde esta armazenado o mapa de cores

Index

- /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/glsl.cpp, 7
- /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/glsl.h, 8
- /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/main.cpp, 9
- /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/transf.cpp, 13
- /home/aahmgbr/Dropbox/unicamp/disciplinas/IA369/MeusProgramas/workspace/cube/src/transf.h, 15

- abs
  - main.cpp, 11
- alfa
  - colorMap_item, 5

- b
  - colorMap_item, 5
- btStatus
  - main.cpp, 13

- clamp
  - main.cpp, 11
- COLORMAP
  - transf.h, 15
- COLORMAP_ITEM
  - transf.h, 15
- colorMap_item, 5
  - alfa, 5
  - b, 5
  - g, 5
  - r, 5
- colorMapRead
  - transf.cpp, 14
  - transf.h, 15
- colorMapWrite
  - transf.cpp, 14
  - transf.h, 16
- createPreintegrationTable
  - main.cpp, 11

- d_height
  - main.cpp, 13
- d_nsli
  - main.cpp, 13
- d_slices
  - main.cpp, 13
- d_width
  - main.cpp, 13
- DrawCube
  - main.cpp, 13
- DrawCube1
  - main.cpp, 13
- DrawGLScene
  - main.cpp, 13
- DrawSliceStack
  - main.cpp, 13

- ESCAPE
  - main.cpp, 11

- f
  - glsl.cpp, 8
- f2
  - glsl.cpp, 8
- FindAbsMaximum
  - main.cpp, 13

- g
  - colorMap_item, 5
  - glsl.cpp, 8
- GerenciaMouse
  - main.cpp, 13
- gh
  - glsl.cpp, 8
- glsl.cpp
  - f, 8
  - f2, 8
  - g, 8
  - gh, 8
  - gw, 8
  - p, 8
  - printProgramInfoLog, 8
  - printShaderInfoLog, 8
  - setShaders, 8
  - textFileRead, 8
  - textFileWrite, 8
  - v, 8
- glsl.h
  - printProgramInfoLog, 9
  - printShaderInfoLog, 9

setShaders, 9
textFileRead, 9
textFileWrite, 9
gw
glsl.cpp, 8

high_shininess
main.cpp, 13

InitDraw
main.cpp, 13
InitGL
main.cpp, 13
InitTexture
main.cpp, 13
InvertMatrix
main.cpp, 13

keyPressed
main.cpp, 13

light_ambient
main.cpp, 13
light_diffuse
main.cpp, 13
light_position
main.cpp, 13
light_specular
main.cpp, 13

m
main.cpp, 13
main
main.cpp, 13
main.cpp
abs, 11
btStatus, 13
clamp, 11
createPreintegrationTable, 11
d_height, 13
d_nsli, 13
d_slices, 13
d_width, 13
DrawCube, 13
DrawCube1, 13
DrawGLScene, 13
DrawSliceStack, 13
ESCAPE, 11
FindAbsMaximum, 13
GerenciaMouse, 13
high_shininess, 13
InitDraw, 13
InitGL, 13
InitTexture, 13
InvertMatrix, 13
keyPressed, 13
light_ambient, 13
light_diffuse, 13
light_position, 13
light_specular, 13
m, 13
main, 13
mat_ambient, 13
mat_diffuse, 13
mat_specular, 13
MatrixInvRotate, 13
MatrixMultiply, 13
MatVecMultiply, 13
MoveMouse, 13
MoveMouseBotaoPressionado, 13
oldXp, 13
oldXr, 13
oldYp, 13
oldYr, 13
pcube, 13
raw, 13
rcubex, 13
rcubey, 13
readRAW, 13
ReSizeGLScene, 13
stick, 13
texData, 13
texdepth, 13
texheight, 13
texid, 13
texwidth, 13
theVolume, 13
tick, 13
tk, 13
TproxyGeometry, 13
VectorRotate, 13
window, 13
winHeight, 13
winWidth, 13
X, 11
Y, 11
Z, 11
mat_ambient
main.cpp, 13
mat_diffuse
main.cpp, 13
mat_specular
main.cpp, 13
MatrixInvRotate
main.cpp, 13
MatrixMultiply
main.cpp, 13
MatVecMultiply
main.cpp, 13

MoveMouse
  main.cpp, 13
MoveMouseBotaoPressionado
  main.cpp, 13

oldXp
  main.cpp, 13
oldXr
  main.cpp, 13
oldYp
  main.cpp, 13
oldYr
  main.cpp, 13

p
  glsl.cpp, 8
pcube
  main.cpp, 13
printProgramInfoLog
  glsl.cpp, 8
  glsl.h, 9
printShaderInfoLog
  glsl.cpp, 8
  glsl.h, 9

r
  colorMap_item, 5
raw
  main.cpp, 13
rcubex
  main.cpp, 13
rcubey
  main.cpp, 13
readRAW
  main.cpp, 13
ReSizeGLScene
  main.cpp, 13

setShaders
  glsl.cpp, 8
  glsl.h, 9
stick
  main.cpp, 13

texData
  main.cpp, 13
texdepth
  main.cpp, 13
texheight
  main.cpp, 13
texid
  main.cpp, 13
textFileRead
  glsl.cpp, 8
  glsl.h, 9
textFileWrite
  glsl.cpp, 8
  glsl.h, 9
texwidth
  main.cpp, 13
theVolume
  main.cpp, 13
tick
  main.cpp, 13
tk
  main.cpp, 13
TproxyGeometry
  main.cpp, 13
transf.cpp
  colorMapRead, 14
  colorMapWrite, 14
transf.h
  COLORMAP, 15
  COLORMAP_ITEM, 15
  colorMapRead, 15
  colorMapWrite, 16

v
  glsl.cpp, 8
VectorRotate
  main.cpp, 13

window
  main.cpp, 13
winHeight
  main.cpp, 13
winWidth
  main.cpp, 13

X
  main.cpp, 11

Y
  main.cpp, 11

Z
  main.cpp, 11