Aaron Schwartz

trying not to forget my own code

Resume

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Setting up GLUT for OpenGL programming in OSX

For my Introduction to Computer Graphics class we will be using OpenGL for learning/projects/experimenting in the realm of Computer Graphics.

While detailed instructions are given for setting up our environment in Windows and a quick reference for getting started on the Linux lab computers, the Makefile and test program given don't compile out of the box in OSX.

The original files look like this:

Triangle.cpp

Makefile

OSX comes with a version of OpenGL and GLUT already installed so it's just a matter of including them.

Now for the changes:

1. The example file (triangle.cpp) needs to be changed from including <GL/glut.h> to <GLUT/glut.h>.
2. The Makefile needs to include the following libs: -framework GLUT -framework OpenGL -framework Cocoa. You can then get rid of the old glut references. (I have to credit this site for the idea)

Once you make these changes, running make should produce a working example of a triangle being drawn to the screen.

Here is how the final files should look:

```
// #include <GL/glut.h>
// Try uncommenting this include line to compile on Max OSX
#include <GLUT/glut.h>


/*! GLUT display callback function */
void display(void);
/*! GLUT window reshape callback function */
void reshape(int, int);

int main(int argc, char** argv)
{
        glutInit(&argc, argv);

        /* set the window size to 512 x 512 */
        glutInitWindowSize(512, 512);

        /* set the display mode to Red, Green, Blue and Alpha
                allocate a depth buffer
                enable double buffering
        */
        glutInitDisplayMode(GLUT_RGBA | GLUT_DEPTH | GLUT_DOUBL

        /* create the window (and call it Lab 1) */
        glutCreateWindow("Lab 1");

        /* set the glut display callback function
                this is the function GLUT will call every time
                the window needs to be drawn
        */
        glutDisplayFunc(display);

        /* set the glut reshape callback function
                this is the function GLUT will call whenever
                the window is resized, including when it is
```

Aaron Schwartz
Hi. I'm currently a student at UCSD. I think coding is fun. I especially enjoy Dynamic Web Design. Feel free to contact me at [atschwar at gmail dot com] for any reason. Job offers are appreciated :). Have a great day!

```
                first created
        */
        glutReshapeFunc(reshape);

        /* set the default background color to black */
        glClearColor(0,0,0,1);

        /* enter the main event loop so that GLUT can process
                all of the window event messages
        */
        glutMainLoop();

        return 0;
}

/*! glut display callback function.  Every time the window need
        glut will call this function.  This includes when the w
        changes, or when another window covering part of this w
        moved so this window is uncovered.
*/
void display()
{
        /* clear the color buffer (resets everything to black)
        glClear(GL_COLOR_BUFFER_BIT);

        /* set the current drawing color to red */
        glColor3f(1, 0, 0);

        /* start drawing triangles, each triangle takes 3 verti
        glBegin(GL_TRIANGLES);

        /* give the 3 triangle vertex coordinates 1 at a time *
        glVertex2f(10, 10);
        glVertex2f(250, 400);
        glVertex2f(400, 10);

        /* tell OpenGL we're done drawing triangles */
        glEnd();

        /* swap the back and front buffers so we can see what w
        glutSwapBuffers();
}

/*! glut reshape callback function.  GLUT calls this function w
        the window is resized, including the first time it is c
        You can use variables to keep track the current window
*/
void reshape(int width, int height)
{
        /* tell OpenGL we want to display in a recangle that is
                same size as the window
        */
        glViewport(0,0,width,height);

        /* switch to the projection matrix */
        glMatrixMode(GL_PROJECTION);

        /* clear the projection matrix */
        glLoadIdentity();

        /* set the camera view, orthographic projection in 2D *
        gluOrtho2D(0,width,0,height);

        /* switch back to the model view matrix */
        glMatrixMode(GL_MODELVIEW);
}
```


And

```
# This is a Makefile for compiling Fall 2010 CSE 167 projects.
# It includes all .cpp files in the current directory.
# To use on a different (non-lab) Linux setup, change the INCDI
#   directories to point to the locations of the header files c
NAME    = triangle
```

```
ECHO    = @echo
CC      = @g++
LIBS    = -framework GLUT -framework OpenGL -framework Cocoa -c
LDFLAGS = $(LIBS)
CFLAGS  =
SOURCES = $(wildcard *.cpp)
OBJS = $(patsubst %.cpp, %.o, $(SOURCES))

.SUFFIXES: .cpp .h .o

.cpp.o:
        $(ECHO) "Compiling $<"
        $(CC) $(CFLAGS) -c -o $@ $<

$(NAME): $(OBJS)
        $(ECHO) "Linking $@..."
        $(CC) -o $@ *.o $(LIBS)
        $(ECHO) "Built $@!"

clean:
        $(RM) core *.o $(NAME)
        $(ECHO) "All clean!"

new:
        make clean
        make
```

This Gist brought to you by GitHub. Makefile view raw

POSTED SEPTEMBER 24, 2010