

Project 4 ReadMe

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The program will start in original wireframe mode. Press R to go into raytraced mode. Press R to go back.

The interaction in raytraced mode is the same from wireframe mode. However, it's recommended to interact with the scene in wireframe mode. (glGetFloatv in raytraced mode won't work.) It's also recommended to compile the program in release mode.

Two things noted:

1. The rotation matrices of the boxes are not set correctly in the original base code. It's required to convert degrees to radians.

```
// Note: convert to radians
rot.x *= 3.14159265f / 180.0f;
rot.y *= 3.14159265f / 180.0f;
rot.z *= 3.14159265f / 180.0f;
```

2. The min position of the box isn't guaranteed to be smaller than the max position. I swapped it to make it easier to get the normal vector.

```
// Note: make sure max pos is bigger than min pos
if (g_boxes[i].minPos.x > g_boxes[i].maxPos.x)
    std::swap(g_boxes[i].minPos.x, g_boxes[i].maxPos.x);
if (g_boxes[i].minPos.y > g_boxes[i].maxPos.y)
    std::swap(g_boxes[i].minPos.y, g_boxes[i].maxPos.y);
if (g_boxes[i].minPos.z > g_boxes[i].maxPos.z)
    std::swap(g_boxes[i].minPos.z, g_boxes[i].maxPos.z);
```

