CGP600 AE2

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Figure 1: *Spring Training 2009, Peoria, AZ.*

Abstract

For this assignment, students were asked to, using the analysis and design from AE1, develop a program and document the development process. The program was to be developed in Visual Studio, using DirectX.

1 Development Process

The final product differs greatly to the original specification developed in AE1. The original design has plans for a whole game, however, only a handful of features could be implemented. These being:

- Moveable Camera
- Textured Rotating Models
- Diffuse/ Ambient Lighting

2 Camera Class

Within the camera class Rotation, Forward, Up and GetViewMatrix methods were implemented. The Rotate method takes a floating point integer called degrees and adds it to the camera rotation variable ready to be applied in the GetViewMatrix.

The Forward method takes a floating point integer called step and then sets the cameras X and Z values by multiplying the step by dx and dz respectively. Dx and dz being the distance in the x and z directions between the cameras position and the LookAt point.

GetViewMatrix applies the new transformations to the identity matrix to position and orientate the camera.

3 Model Class

The Model class handles loading objects into the program, applying shaders to them, texturing them and lighting them. Lighting is determined by finding the dot product of the directional_light_vector and the surface normal(diffuse_amount), multi

4 Testing

One main issue with the program was safely exiting, resulting in the code breaking rather than closing down properly. This was due to the D3DDevice and ImmediateContext variables being released by the Model Class as well as in main.cpp. This was overcome by setting the variables to NULL in the Model deconstructor instead of releasing them, fixing the issue.

```
_pPShader) m_pPShader->Release();
_pImmediateContext) m_pImmediateContext = NULL;//->Release();
_pD3DDevice) m_pD3DDevice = NULL;//->Release();
```

5 Reflection

I feel like I should have been able to do better on this assignment or at least been able to implement more. DirectX has proven to very unstable, resulting in lengthy periods of getting stuck with an error that seems impossible to find. I think, given more time, I would have been able to hand in something closer to the original design specification.

References