A STUDY ON PER-PIXEL LIGHTING AND REAL-TIME DYNAMIC SHADOWS FOR REALISTIC REAL-TIME RENDERING AND THE CREATION OF A 3D RENDERING ENGINE WITH FOCUS ON PER-PIXEL LIGHTING AND REAL-TIME DYNAMIC SHADOWS

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ABSTRACT

The greatest aim of 3D is to correctly simulate the real world within the computer's screen. This involves many techniques from basic 3D math to transformations, to constructive solid geometries, to lighting and materials. There are many ways to fool human mind into thinking that way they are looking at on the screen is real and not something that is generated of bits and bytes, and one of them is correct lighting and shadows. The aim of this project is to correctly simulate per-pixel lighting and real-time shadows that combine to improve the realism of the projected scene dramatically. The final output of this system would be a 3D application demonstrating the effects in a simulated scene.