

Austin New

Assignment #3

Arabnia's Computer Graphics

Experimenting with my program, I came to a number of conclusions on how each variable effected the perspective projection's 2D representation. Changing the position of the viewpoint "pans" the image in the x, y, or z direction. An increase in the screen size subsequently made the image smaller, while a decrease made the image larger. Changing the distance the viewer was from the screen is analogous to mutating the z direction of the viewpoint, and would pan the image forward and backward. It was noted that without proper line clipping images positioned behind the viewpoint were projected, inverted, in front of the viewpoint. Changing the number of pixels has no bearing on the projection (perhaps on the projection's rendered image resolution) when the viewport is that number of pixels; viewport remaining static, this is analogous to altering the screen size. Modification of the viewing axis is equivalent to rotating the entire projected image.

In order to better analyze how a box was being changed by each of these parameters, I duplicated that box over a field: where a single box may look heavily distorted at some outer edge of a projection, many spread boxes creates a comparison and the distortions look more typical or understandable, making the "big picture" easier to recognize.