Assignment 1a: Getting started with Ray Casting
Due: Monday September 23rd

In this assignment, we observe the effects of each appearance parameter on the rendered image. The code basically takes in eye position, viewing direction, up vector, FOV and other parameters required for scene generation.
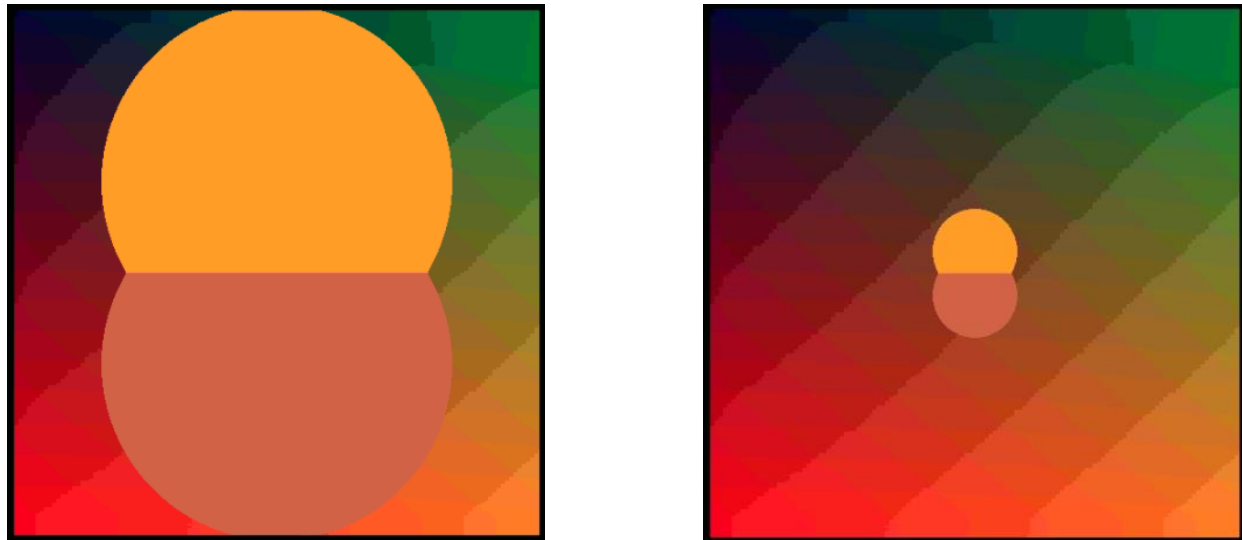
 Effects of the UP vector:
        By changing the direction of the UP vector, we find that image rotates about the eye position. This can be understood with the following outputs:

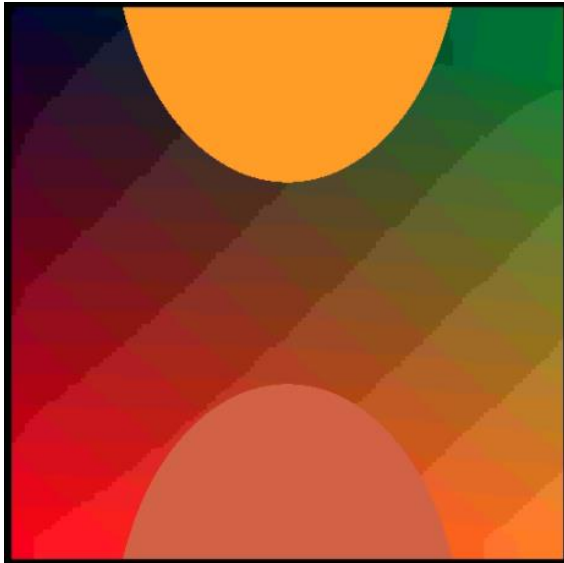The Up vector is changed from (0,1,0) to (0,-1,0) in the above illustration

Effects of the Field of view

As we can see from the images, the left one has a FoV of 45 degrees and the right one has a field of view of 120 degrees
The narrower the FoV, more prominent is the effefct of perspective vision

Effect of viewing parameters on perspective vision

The above image is a good example of exaggerated perspective distortion. This is because the objects are closer to the boundaries. The effect is more pronounced at the borders. In order to reduce the effect, the eye position can be varied such that the object is at a larger distance. Also, increasing FoV can also reduce the effects of perspective distortion