

ABSTRACT

Render is a transforming process from an object scene which is a vector into pixel so it can displayed as image or video files. To render object with high complexity, it will take a long time to process. Because of that, parallel rendering will reduce process time. Parallel rendering has been done on high performance computating environment, which is cluster and Graphics Processing Unit (GPU). Cluster has many computers that connected each other in a network and will do the render process at the same time and make the process quicker, and on GPU, rendering process done on GPU's framebuffer that has better speed than RAM's default buffer and can increase processing speed.

Experiment on network render with blender using dolphin blender file with 1 object and 10 object to be rendered with multiple of 100 from 100 to 1000 frame and multiple of 1000 from 1000 to 10000 frame. Experiment result showed that rendering time increase as frame increasing, and if render done with much more processor, then the process will be done in shorter time.

Experiment on GPU using OpenGL with the same dolphin object that has been exported to .obj file which contains vertexes and polygons coordinates to be read and rendered into a dolphin object. Experiment result showed that on OpenGL GPU render process time reduced and produced better color proportion and smoother object than standard OpenGL because in OpenGL GPU there are additional process, which are shading and texturing.

Keywords : Render, cluster, GPU, parallel, blender, OpenGL.