

Interactive visualization of large three-dimensional objects and virtual worlds is an important topic in the field of computer graphics and visualization of engineering structures. In many cases, the number of primitives in these worlds overwhelms the rendering performance of current graphics systems. One solution for accelerating the displaying of these environments is creation and application method called levels of detail (LOD). However, most algorithms that compute levels of detail do not deal with the special requirements of input data in VRML1.0 format. This thesis works out methodology and develop a tool for generation level of detail for VRML1.0 called LODCreator, based on two simplification algorithms - vertex clustering and vertex decimation, that robustly computes simplifications for objects in VRML1.0.