

Abstract

Technological advances are currently developing, one of the roles of technological advancement is in 3D Scanning technology which is one of the forms of scanning real objects into digital forms. The technology works by retrieving data in the form of point cloud from an object. 3D Scanner technology collects data from the surface of the object in front of it. Therefore, in this study the authors designed a 3D Laser Scanner system that scans sample objects namely cubes, beams, tubes, and cones with two lasers and a webcam. The scanned object is then reconstructed with the Delaunay Triangulation algorithm to connect the point cloud dots. Based on the tests performed, the sample object is capable of scanning by webcam and displayed to a computer device. The results of the sample object scanning implementation performed according to the two laser scanning scenarios obtained the most cloud point results on cone objects with 269,606 points, and the fewest on cube objects with 136,153 points. Sample objects reconstructed with the Delaunay Triangulation algorithm produce the highest number of Delaunay triangulations in cone objects at 1,238 points. Based on the data, the Delaunay Triangulation algorithm applied successfully connects pointcloud.

Keywords: *3D technology Scanning, Triangulation, Point cloud, Delaunay Triangulation*