

ABSTRACT

3D-scanner is a scanner tool which able to print three-dimensional objects in digital form. In 3D scanner process, it needs a tool known as a 3D scanner. The tool works by taking data in the form of points (point cloud) which represent the coordinates of object or real environment. 3D scanners collect "distance" information from the front of the scanner to the surface of the object being observed. If we use a three-dimensional spherical coordinate system, we can get variables such as angle and relative distance between object's surface and 3D scanner. 3D scanners is generated using Infrared, arduino and Matlab. It uses infrared to scan to the object. Infrared will make a point on the object which further will be projected into a line. To produce 3D-shaped point of the object, it uses code written in IDE processing. The scanned object is placed on a spanning place so the Infrared will move up to get the distance. The distance data will send to matlab with the help of USB serial cable, so Matlab will receive and process the data in order with plot point's to generate 3D-form data. So the results shown are the same as the objects being scanned. The test results are a comparison of the original object with the visualized object Which has an accuracy between 50% to 80% similarity.

Keywords: 3D scanners, Matlab, Arduino, distance, GUI