Save Real Objects as Files

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In an effort to make the technology that is 3D scanning more widely affordable, I looked for ways to bring real objects into the digital world while using the least amount of resources. The scanner that I engineered works in the following way. First, a normal digital camera takes a video of an object (The object that is to be scanned) while it rests on a rotating platform. To the side of the camera is mounted a line laser that will shine on the object at a known angle. After one rotation is complete, a computer program that I wrote using Java will export the video from the camera, cut the video into hundreds of frames, and using the known angle will detect where the laser line falls on each frame to create what is known as point cloud. Once the point cloud is created, it can be used to generate a 3D mesh, something that most 3D software support. At this point, the object will have been successfully scanned, and will be available for printing or modifications. Since the purpose of my project is to create an affordable 3D scanner, I will continually be looking for ways to use parts that are less expensive, thus cutting down on the total price.

Awards Won: