# ABSTRACT

This project is to build a machine which prints a three dimensional figure desired by the user. This machine modifies the filament(the liquid molecule used by the machine) into a three dimensional figure. We will design the required shape of the user using three different software, arduino, printrun and slic3r.

Arduino is an user interface board which are available in many types like arduino nano, uno, mega, lilypad arduino, red board, arduino leonardo etc. And each type of board has different versions but the software used in is in common.In this project we are using arduino mega and its related arduino IDE which uses the embedded c computer language.

The printrun suite has been around for a long time but is still a valuable go-to resource for creating great prints. Printrun is a powerful software toolchain for reading and modifying STL files, slicing them and preparing the resulting g-code, and sending the G-code to your printer. There are three different tools pronterface , pronsole, printcore. It uses G-code to send applications.

Slic3r is the main G-code processors for 3D printers. It takes your 3D model(.STL or .OBJ) and change into a G-code file. Once finished, an appropriate G-code file for the production of the [3D modeled](https://en.wikipedia.org/wiki/3D_model" \o "3D model) part or object is sent to the 3D printer for the manufacturing of a physical object. A G-code file always tells printer where to move next by using x,y,z coordinates.