

MINI CNC 2D PLOTTER

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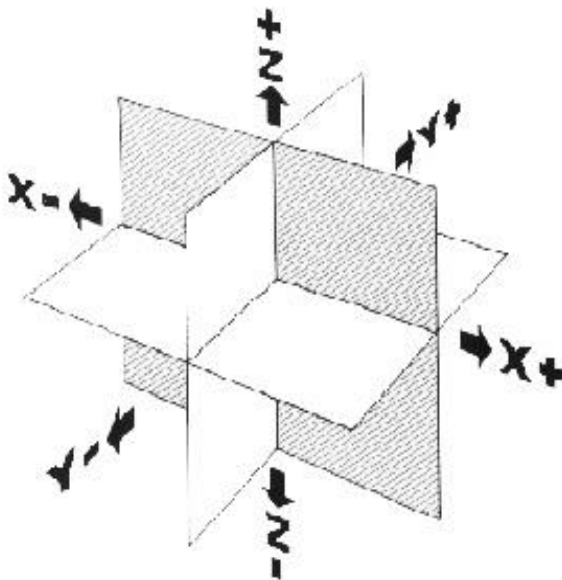
Introduction

CNC means Computer Numeric Control . It is a computer controlled machine. It is used to etch, mill, cut and engrave materials. It has a printhead which is 3D. With the assistance of computer , a CNC machine can be used for designing. Computer accepts data and it is converted to code. This technique is widely used in machine tool industry. There are certain operating commands which can be used for this.

Objectives

Creating GCODE by integrating hardware and software.

Methodology

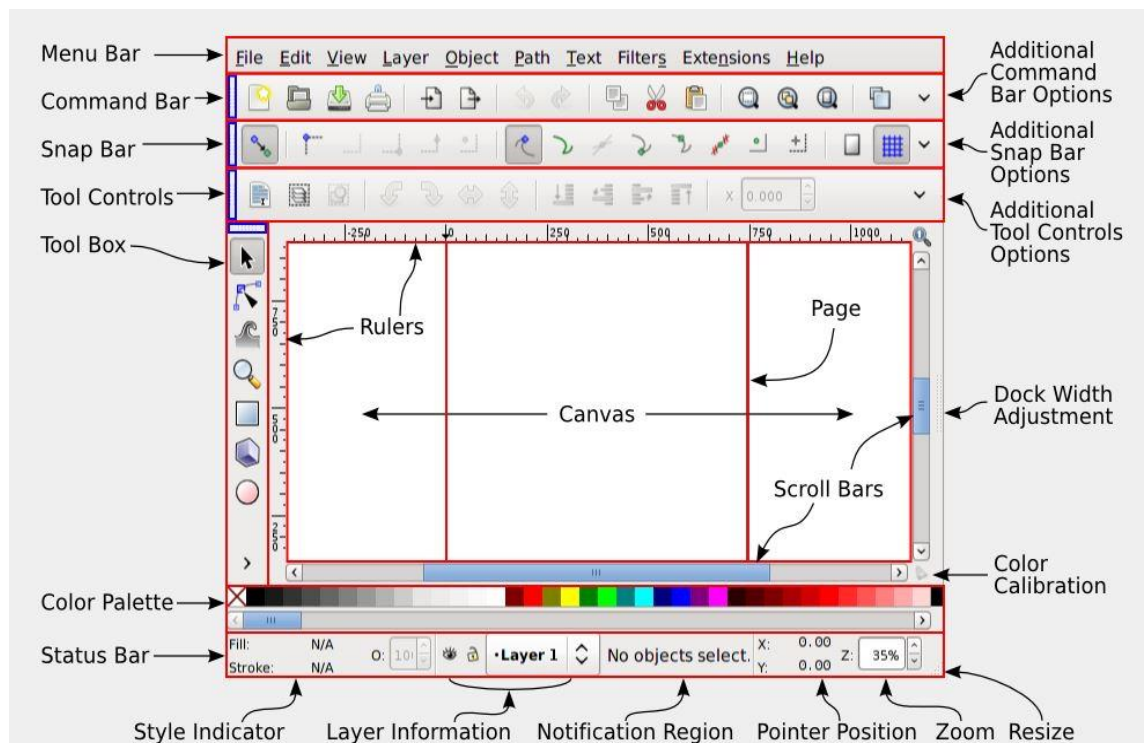


The 3 D coordinate planes in CNC.

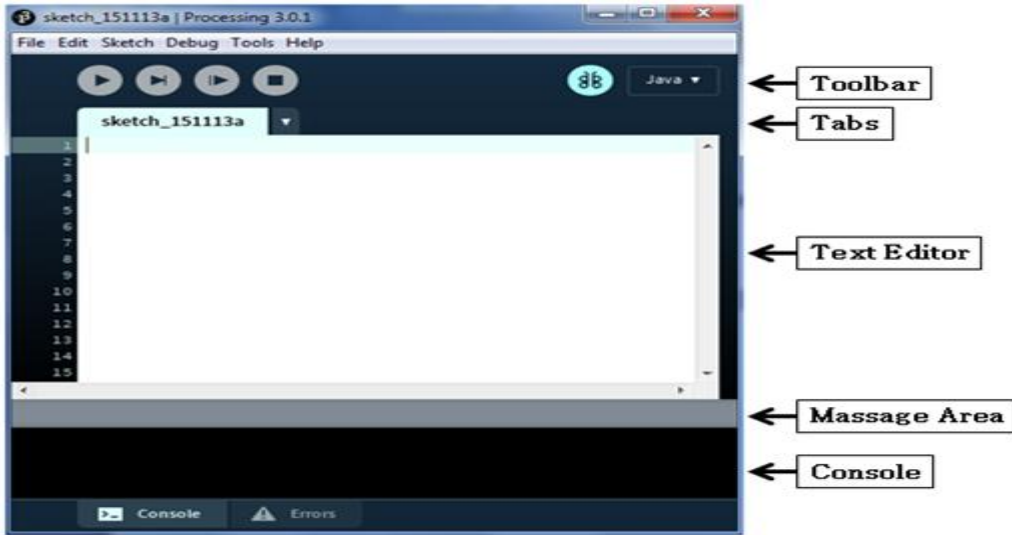
The system contain three different parts via Hardware, Software and Industry design. Hardware consists of electronic circuitry. Open source software can be used. Industrial design means to manufacture the product physically. The project software system consists of Inkspace, Arduino and Proccsing.

Inkspace

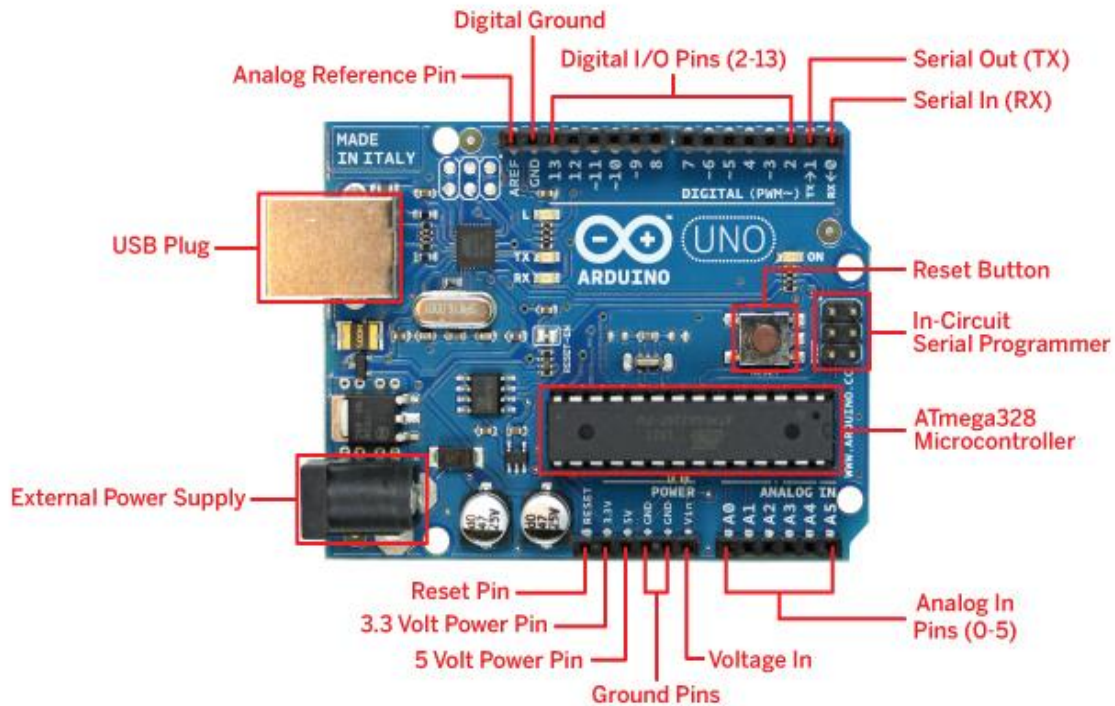
The two graphical images use here are bitmap and vector images. Image is defined as row and column in bitmap image. In vector image, image is defined in straight lines or curved lines. The following shows an inkspace window. Inkspace convert image format to graphics code. It is known as Gcode. It is written in Python language.



Inkspace Window



Processing Window

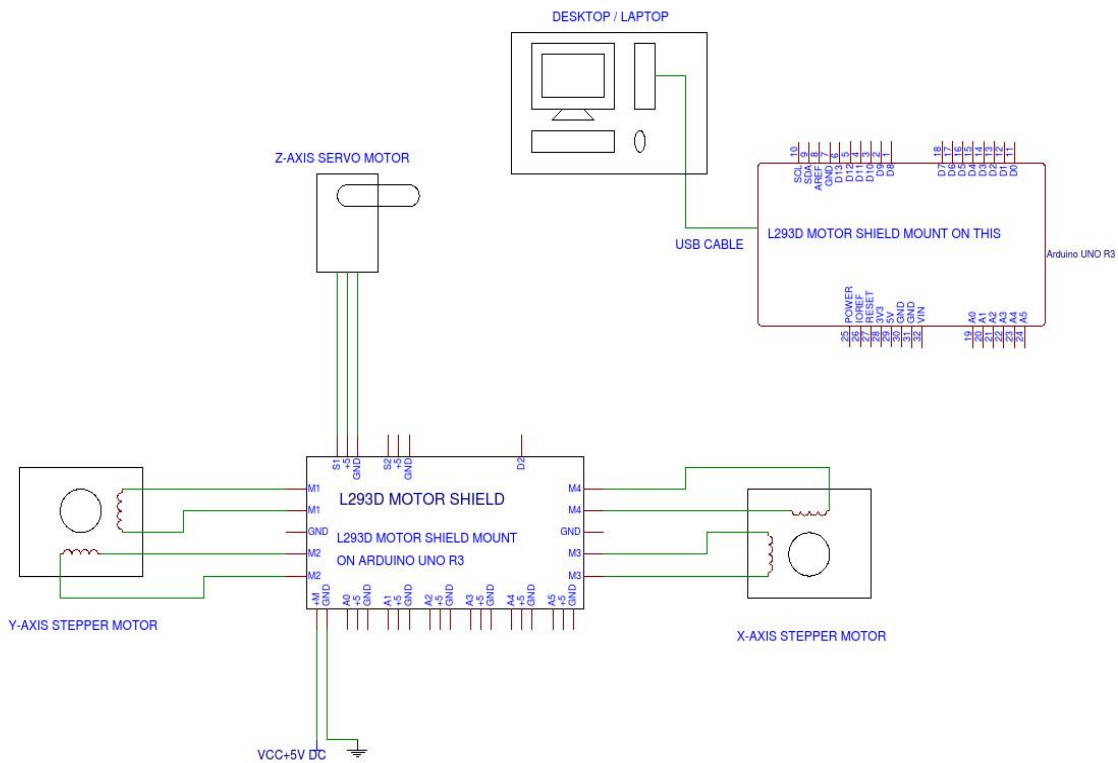


Arduino Board

Block Diagram



Circuit Diagram



Conclusion

The Arduino Uno is a microcontroller board. It has 14 digital input/output pins, 6 analog inputs, a 16 MHz quartz crystal, a USB connection, a power jack, an ICSP header and a reset button. We can integrate hardware and software together for designing an effective 2D Plotter.

Bibliography

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