

## **ABSTRACT**

CNC (computer numerical control) is renewal machine tools which existed the industry following technology development because regarded machine tools before his less effective in terms of time and charges. CNC is a system of automation machine tools operated by order and programmed in abstark and stored through a storage medium, it is opposite to customs machine tools before, where machine tools usually controlled by the hand or automatisms simple.

In this final project, designed a simple CNC tool that can be used with other terms or engraving to draw a pattern on certain fields automatically. The design has been drawn through the personal computer will be converted in the form of G-Code. Before data is sent to the microcontroller, the data will be converted first into microcontroller programming language. Furthermore the microcontroller will accept digital input data from a personal computer via the UART communication. Mikrontroler will read the data and transferred by personal computer, data read is a command to turn on/turn off the laser and motor driver stepper on logic. Of data received by the motor driver stepper, the data used as activator of both motor stepper, and formed the pattern in the field of appropriate design.

Hopefully with this simple CNC said existing problems in the industrialized world in terms of time and cost. CNC pattern making on the field quickly, as well as the modern and better than the previously used machine tools round hands or simple automation.

**Keywords: CNC, Engraving, G-Code, UART, Mikrokontroler**