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CNC Based Printing and Design Machine

Ritesh Singh[1], Pranjal Jaiswal[2], Harsh Morasiya[3], Rudransh Sharma[4], Pranshu Saxena[5], Shivaditya Singh[6]
[1, 2, 3, 4, 5, 6]*Oriental Institute of Science and Technology*

Abstract: ***The aim of the project is to manufacture the designed profile by using CNC machine. The profile designed is needed to write a CNC program based on labels, the label mode of program is selected because the programming is too easy even for complicated shapes, CNC's had made revolutionary changes with in the manufacturing sector in before days achieving productivity up to the desired level was not possibilities due to lots of drawbacks like complication of shapes and sizes, lack of skilled labors, lots of wastages and scraps due to unexpected mistakes and low quality levels and accuracy. By using CNC this all draw backs can be overcome and this was our small contribution to show the performance of CNC.. The main objective of this work is the development of a machine which allows future researches on the process performance, on educational purposes, the demonstration the parts involved on the CNC machine.***

I. INTRODUCTION

The world has become a high tech with a lot of things becoming smaller and advanced. The fast-growing development of technology and manufacturing, Industrial requirement such as good and high precision quality has helped in developing the CNC machine plotter all of those can be achieved through machines that can be controlled by computers such as Computer Numerical Control (CNC) machine. To implement CNC plotter machine, several concepts must be understood such as: understanding fundamentals, Machine Mechanical design, CNC machine hardware, software developing

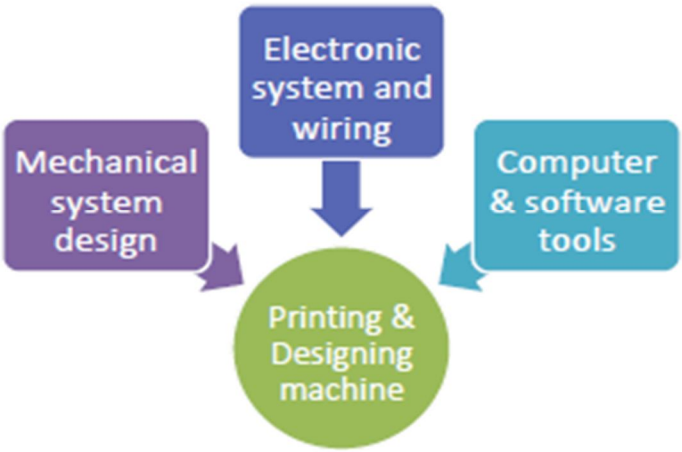
II. OBJECTIVES

A. The objectives of this project are to design the printing and design Machine and to develop open source software and hardware to control it.

B. It is a automation of machine tools by which we can draw different type of letter, pictures provided by computers using software into its controller.

III. METHODOLOGY

The project implementation method is discussed briefly focusing on basic components. The framework must be clear to ensure that the project runs smoothly, and project objectives are capable of success.



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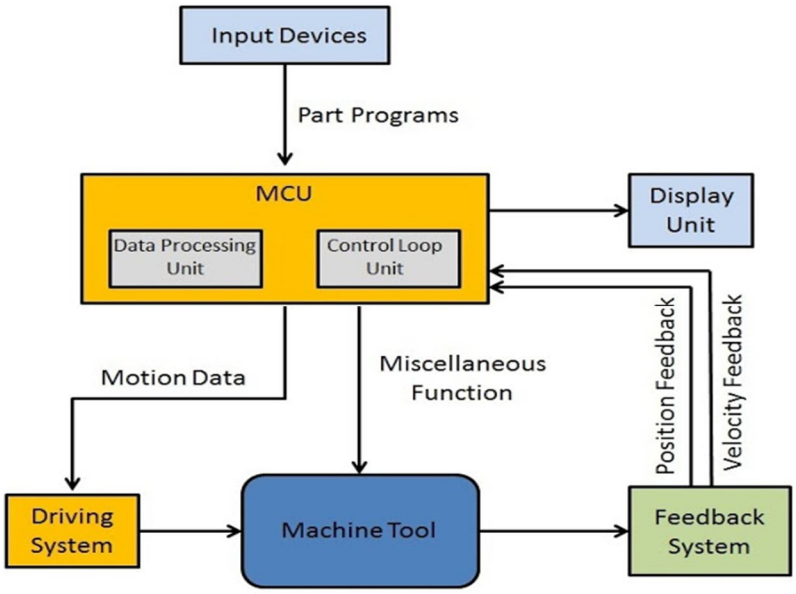
IV. BLOCK DIAGRAM



V. TOOLS & COMPONENTS

A. Stepper Motor
B. Arduino Uno R3
C. Expansion Board A4988 Driver
D. Mg 90 S Metal Gear Servo

VI. COMPUTER AND SOFTWARE TOOLS

A. Download ben box software on your computer and connect this with
B. USB connector
C. Open Software
D. Connect USB Plug
E. On Update Firmware select COM (3,4 OR 5). and browse firmware from 6.downloaded software 7.Select all Value of software as per all pic

VII. APPLICATIONS

A. Metal removal industries.
B. Material fabrication industries .
C. For no conventional machining.
D. Industries where the machining task is difficult to perform manually.

VIII. ADVANTAGES

A. CNC machines can be used continuously 24 hours a day, 365 days a year and only need to be switched off for occasional maintenance.
B. CNC machines are programmed with a design which can then be manufactured hundereds or even thousands of times. Each manufactured product will be exactly the same.
C. Less skilled/trained people can operate CNC unlike manual lathes/milling machines etc... Which need skilled engineers?
D. Low maintainance required.
E. No possibility of human error.

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IX. CONCLUSION

What we can conclude from this report is we able to study the working and principles of cnc based printing and design machine. This mahine is very accurate unlike other types of conventional machines. This machine can easily be updated just by changing its software programme. In future as most of the industrial and non industrialrequirement is on automation so it is a great step towars the development of future technological advancement.

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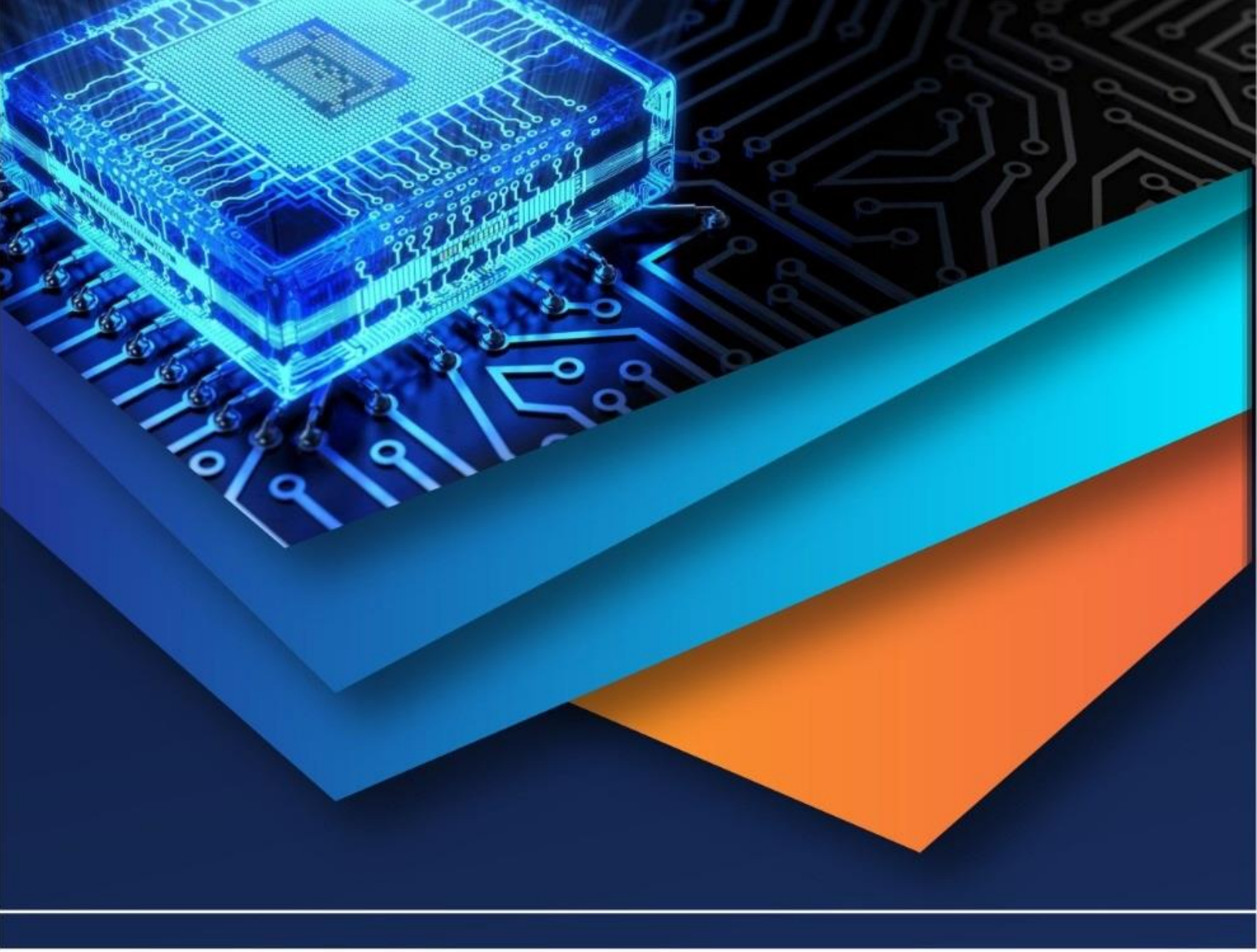

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