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Mobile Application Base Voice Command Wireless CNC Writing Machine

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Abstract – *In this paper voice mobile application base wireless CNC writing machine that interface with HC-05 Bluetooth and microcontroller. CNC machines voice signal give mobile application and voice converted into text command and send into paired HC-05 Bluetooth receiver through Arduino UNO already store g code file (generated with ink space software) are open into micro SD CARD and send to the G-Codes file to next Arduino UNO both controller board (master and slave communication) can proceed into G codes file according CNC machine. with the help of 2 scrape DVD/CD stepper motor joined into 2 L298- motor driver controlling to (x- axis and y -axis) & servo motors connected pen movement controlling to (z- axis) to draw the any text, pitchers or signature as per the fed program.*

KEYWORD*: HC- 05 Bluetooth, CNC machine, G-code, Arduino UNO*

I.INTRODUCTION

Presentation Computer numerical control is an progressed shape of delicate robotization created to control the movement and operation of machine apparatuses. Numerical control machine was concocted around in 19th century to diminish work stack, it could be a strategy in which the fabricating machine employments coded arrange, digits and letters. Its preferences incorporate tall proficiency, tall adaptability, and tall generation rate, moo fetched of production. It incorporates three fundamental steps that's accepting information, translating information and in like manner control activity. Based on extraordinary characters letter codes and numbers a shape of program called portion program (a successive instruction or coded commands that coordinate particular machine work) is utilized for naturally operation of a fabricating machine to create a particular portion of particular measurement. The program is at that point changed over into electrical flag to nourish as input to engines that run the machine and do the device developments. A machine control unit (MCU) chooses the device profundity of c

II. OBJECTIVE

The targets of our venture is to plan and actualize a CNC plotter machine which is able be able to draw any plan, elevation, side sees of buildings additionally to draw required pictures on the paper. Too, to create a moo taken a toll programmed scaled down CNC plotter machine for any drawing with decrease in taken a toll of component together with the increment in adaptability B. Strategy We have supply the current in Arduino with USB Information cable to exchange information from Computer to Arduino Board. Here we have Utilized 3 stepper Drivers to supply the G codes in grouping to the more extreme engines. Arduino will be mounted on CNC shield. CNC shield will be dispersing the Current within the command of Arduino. CNC shield will be changing over the command of G codes in advanced beat by Stepper engine. In X direction stepper engine will be move cleared out and Right, Ydirection stepper engine will be move in front and back course, Z-direction stepper engine will be move in up and down. We have made numerous troublesome plan by means of utilizing this machine. The exactness of these machines comes about is exceptionally tall. So we have utilized in industry to diminish the taken a toll of plan printing and keep up exactness level. Drafting and Scaling of CNC Plotter machine is exceptionally valuable.

III. HARDWARE

1. ARDUINO UNO ATMEGA328P

Fig 5.1Arduino Uno

The Uno could be a microcontroller board based on the ATmega328P. It has 14 advanced input/output pins (of which 6 can be utilized as PWM yields), 6 analog inputs, a 16 MHz quartz gem, a USB association, a control jack, an ICSP header and a reset button. It contains everything required to bolster the microcontroller; essentially interface it to a computer with a USB cable or control it

with a AC-to-DC connector or battery to induce begun. Anybody can tinker with the UNO without stressing as well much around doing something off-base, most exceedingly bad case situation you'll supplant the chip for some dollars and begin over once more. Uno implies one in Italian and was chosen to stamp the discharge of Arduino Program (IDE) 1.0. The Uno board and adaptation 1.0 of Arduino Program L298 driver (IDE) were the reference forms of Arduino, presently advanced to more current discharges. The Uno board is the rst in a arrangement of USB Arduino sheets, and the reference show for the Arduino stage; for an

2. STEPPER MOTER

Fig 5.2Stepper Moter

A stepper engine may be a sort of DC engine which includes a full revolution partitioned in an break even with number of steps. It may be a sort of actuator exceedingly consistent with numerical control implies, because it is basically an electromechanical converter of advanced driving forces into corresponding development of its shaft, giving exact speed, position and course control in an open-loop design, without requiring encoders, end-of-line switches or other sorts of sensors as customary electric engines require. he steps of a stepper engine speak to discrete precise developments, that take put in a progressive design and are rise to in uprooting, when working accurately the number of steps performed must be break even with to the control motivations connected to the stages of the engine. The final position of the rotor is given by the entire precise uprooting coming about from the number of steps performed. This position is kept until a unused drive, or arrangement of motivations, is connected.

3. SERVO MOTER

Fig 5.3 Servo Motor

A servo engine appeared in fig. Is utilized for the development of portraying write in up and down in Z course. This will offer assistance the CNC 2D sketcher to point the write in A4 sheet and pulling back in front the sheet to halt drawing

4. HC 05 BLUETOOTH

Fig 5.4 HC-05 Bluetooth

Within the venture the Bluetooth module utilized for sending the G-codes to the plotter. HC-05 could be a Bluetooth device used for remote communication. It works on serial communication (UART). It may be a 6 stick module.

- The gadget can be utilized in 2 modes; information mode and command mode.
- The information mode is utilized for information exchange between gadgets though command mode is utilized for changing the settings of the Bluetooth module.
- AT commands are required in command mode.
- The module works on 5V or 3.3V. It has an on board 5V to 3.3V controller.

B. L298 MOTOR SHIELD

L298 IC is a motor driver i integrated circuit shown in fig. it is used to control the Stepper and servo motor rotations in clockwise and anticlockwise directions. This change in rotations help the sketcher to move in the required three direction say, X, Y and Z axis directions corresponding to left and right movement, front and back movement and up and down movement

V. SOFTWARE & CODING

1. ARDUINO IDE

2. INKSCAPE

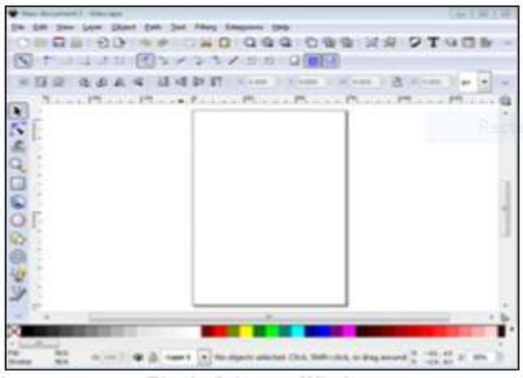
3.PROCESSING

1. AURDUINO IDE

The Arduino extend gives the Arduino coordinates advancement environment (IDE), which could be a cross-platform application composed within the programming dialect Java. It begun from the IDE for the dialects Handling and Wiring. It is planned to present programming to craftsmen and other newcomers new with program improvement. It incorporates a code editor with highlights such as sentence structure highlighting, brace coordinating, and programmed space, and gives straightforward one-click instrument to compile and stack programs to an Arduino board. A program composed with the IDE for Arduino is called a “sketch”. The Arduino IDE underpins the dialects C and C++ utilizing uncommon rules to organize code. The Arduino IDE supplies a computer program library called

Wiring from the Wiring venture, which gives numerous common input and yield strategies. A ordinary Arduino C/C++ portray comprises of two capacities that are compiled and connected with a program stub fundamental () into an executable cyclic official p

2. INK-SCAPE



A. **INKSCAPE (Form 0.47)** There are two fundamental sorts of realistic pictures: bitmap (or raster) pictures and vector pictures. Within the first case, the picture is defined in terms of columns and columns of person pixels, each with its claim color. Within the moment case, the picture is defined in terms of lines, both straight and bended. A single straight line is depicted in terms of its two conclusion focuses.

B. INKSCAPE WINDOW Begin by opening Inkscape. This window contains a few major ranges, numerous containing clickable symbols or pull-down menus. The taking after figure appears this window and names key parts. As Inkscape has developed more complex, the range required to incorporate symbols and section boxes for all the different things has too developed driving to issues when Inkscape is utilized on little screens. The Command Bar, Snap Bar, Instrument Controls, and Device Box have variable widths or statures. On the off chance that there are as well numerous things to be appeared within the width (stature) of

C. PROCESSING 3.3

Preparing could be a simple programming environment that was made to create it less demanding to create outwardly situated applications with an accentuation on movement and giving clients with moment input through interaction. The designers needed a implies to "sketch" thoughts in code. As its capabilities have extended over the past decade, Preparing has come to be utilized for more progressed production-level work in expansion to its outlining part. Initially built as a space- specific expansion to Java focused on towards craftsmen and architects, Handling has advanced into a full-blown plan and prototyping apparatus utilized for large-scale establishment work, movement design, and complex data visualization. A Preparing program is called a outline. The idea is to create Java-style programming feel more like scripting, and embrace the method of scripting to rapidly compose code. Outlines are put away within the sketchbook, a organizer that's utilized as the default area for sparing all of your ventures. Outline

VI. FUTURE SCOP

IV. Piece Graph Scaled down CNC plotter machine is worked on input as a G-codes of plan and changing over it through Arduinio, Stepper Drivers, CNC Shield, Stepper engine in to a turn of lead screw we have work on to preserve most reduced fetched of our venture. We have plan a basic construction on our venture typically less demanding way to utilize Stepper engine with stack screw, CNC Shield, Stepper Drivers, ardunio board, etc. The setup of machine is adaptable that's why it'll be effectively transported and support time is brief. The essential chart of CNC Plotter machine is Appeared in figure.

VIII. CONCLUSION

A CNC Machine is utilized for Cutting, Composing, edge Penetrating and Directing of essentially any materials for any reason and it are regularly utilized for any extend. As per result we are ready to total theoretical a remote communication base CNC scaled down plotter machine backed package and equipment for fashion, numeric, and signature. The remote base CNC scaled down plotter is AN inserted framework that works on the run the show on pc numeric administration (CNC).

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