Tic-Tac-Toe Robot

01

Robot

02

Drawing X

what we use in hardware ?

* 4 Stepper Motor
  * 2 for Y axis
  * 1 for x axis
  * 1 for z axis

* 3 Drivers VS-DV8655N-5A type

* power supply 12V

* Arduino Mega

* Pen Holder

04

Process Building

08

Thank u All
Any questions?

03

Drawing X

what we use in software ?

*AccelStepper.h

to control stepper motors to draw X without using GCODE

*ESP8266WiFi library
to control esp which connect to wiegand

*DFPlayer Mini MP3 to control mp3 which connect to speaker

05

LED MATRIX

Hardware part

*Arduino nano

*MAX7219 LED Dot Matrix

Software part:
***LedControl.h:**
to control the led matrix and display the sentences

07

future work:

- 1. Adding a verify mode
- 2. Adding a hint mode
- 3. Further improvements to the mobile application
- 4. Adding other control methods

06

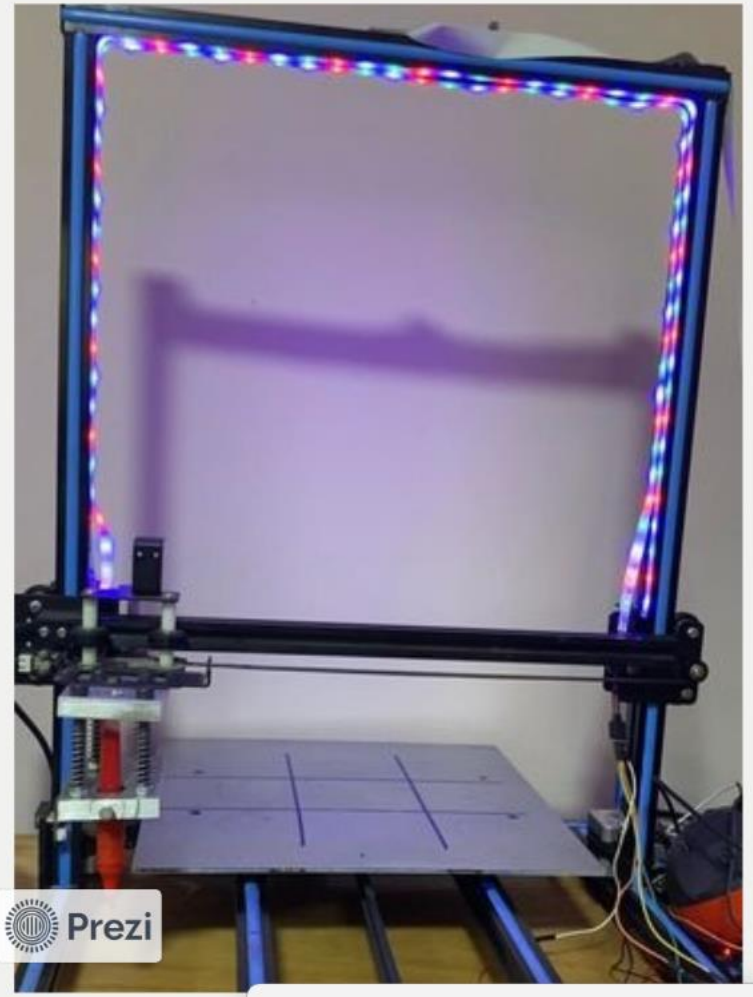
CONSTRAINTS:

- Time
- find suitable driver
- write full code for drawing x
- detect user move
- Define the playing area
- Dealing with led matrix

Prezi

Robot

To Reach to our goal we devide the work for three steps



work model

drawing X

building process

Led Matrix

work model

drawing
X

building process

Led Matrix

Drawing X

what we use in hardware ?

** 4 Stepper Motor*

**2 for Y axis*

**1 for x axsis*

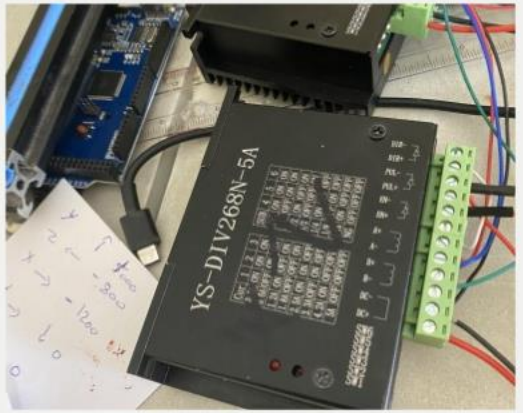
**1 for z axis*

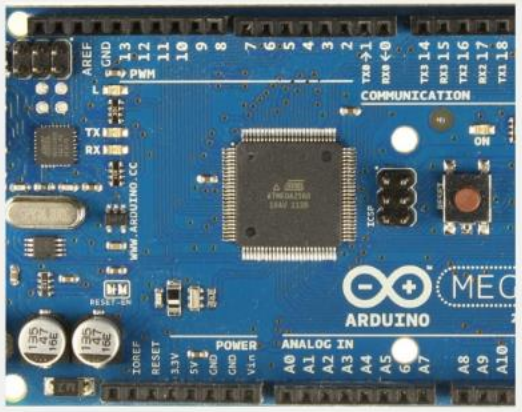
** 3 Drivers YS-DV268N-5A type*

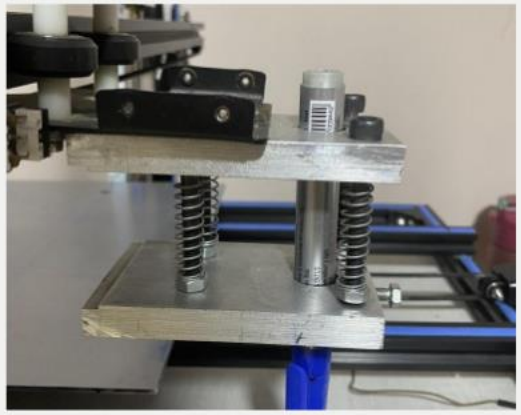
** power supply 12V*

** Arduino Mega*

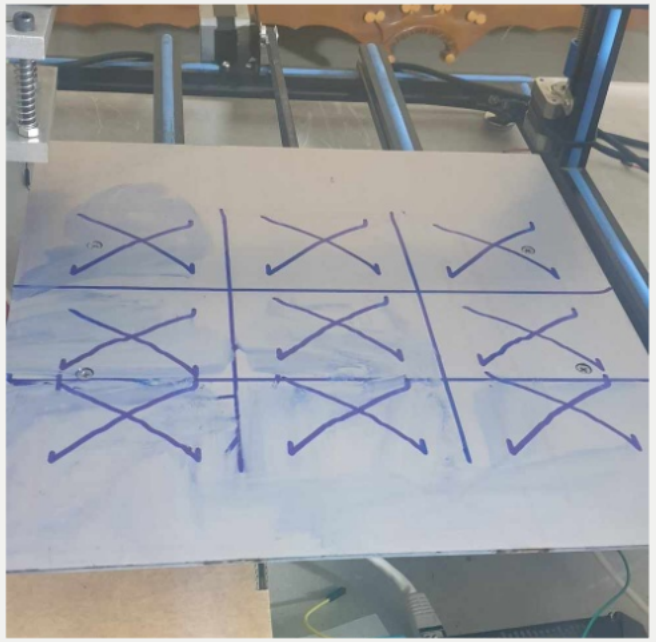
**Pen Holder*







Drawing X



what we use in software ?

*AccelStepper.h

to control stepper motors to draw X without using GCODE

*ESP8266WiFi library
to control esp which connect to wiengand

*DFPlayer Mini MP3 to control mp3 hich connect tospeaker

Process Building

What we use as hardware componant?

* Raspbari pi

*Raspberry Pi Camera

*push button to select the level

*speaker with mp3

*ESP with wiengand

*RGB

What laibrary we use in SW?

***cv2** To open the camera and take the photo

***time** Give the robot time to complete a specific task

***pigpio** to control RGB led

***random** to generate random number

***serial to connect with mega and uno arduino**

What we use as hardware componant?

* Raspbari pi

*Raspberry Pi Camera

*push button to select the level

*speaker with mp3

*ESP with wiengand

*RGB

What laibrary we use in SW?

*__cv2__ To open the camera and take the photo

*__time__ Give the robot time to complete a specific task

*__pigpio__ to control RGB led

*__random__ to generate random number

***serial to connect with mega and uno arduino**

LED MATRIX

Hardware part:

***Arduino nano**

***MAX7219 LED Dot Matrix**

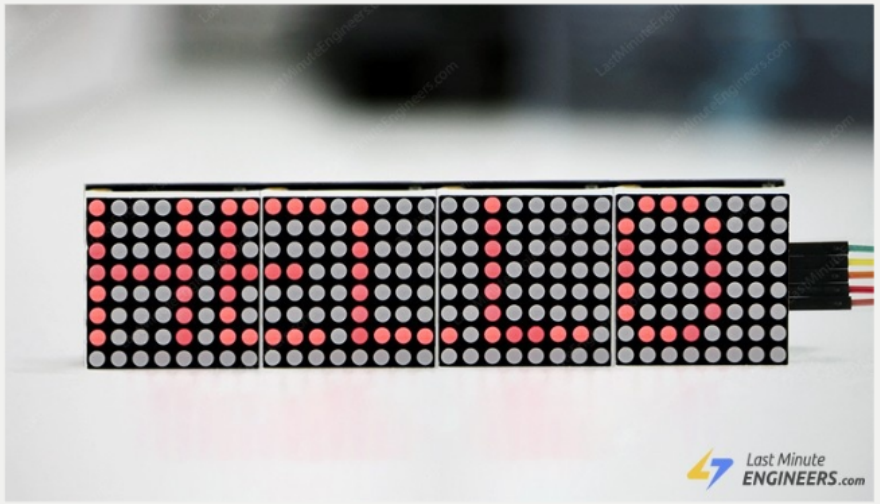
Software part:

***LedControl.h:**

to control the led matrix and display the sentences

Hardware part:

***Arduino nano**



***MAX7219 LED Dot Matrix**

Software part:

***LedControl.h:**

to control the led matrix and display the sentences

CONSTRAINTS:

- Time

- find suitable driver

write full code for drawing x

detect user move

- Define the playing area

Dealing with led matrix

Time

- find suitable driver

write full code for drawing x

detect user move

- Define the playing area

Dealing with led matrix

future work:

1. Adding a verify mode

2. Adding a hint mode

3. Further improvements to the mobile application

4. Adding other control methods

1. Adding a verify mode

2. Adding a hint mode

3. Further improvements to the mobile application

4. Adding other control methods

Thank u All

Any questions?