WRITING AND DRAWING
M A C H I N E

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ARDUINO

python

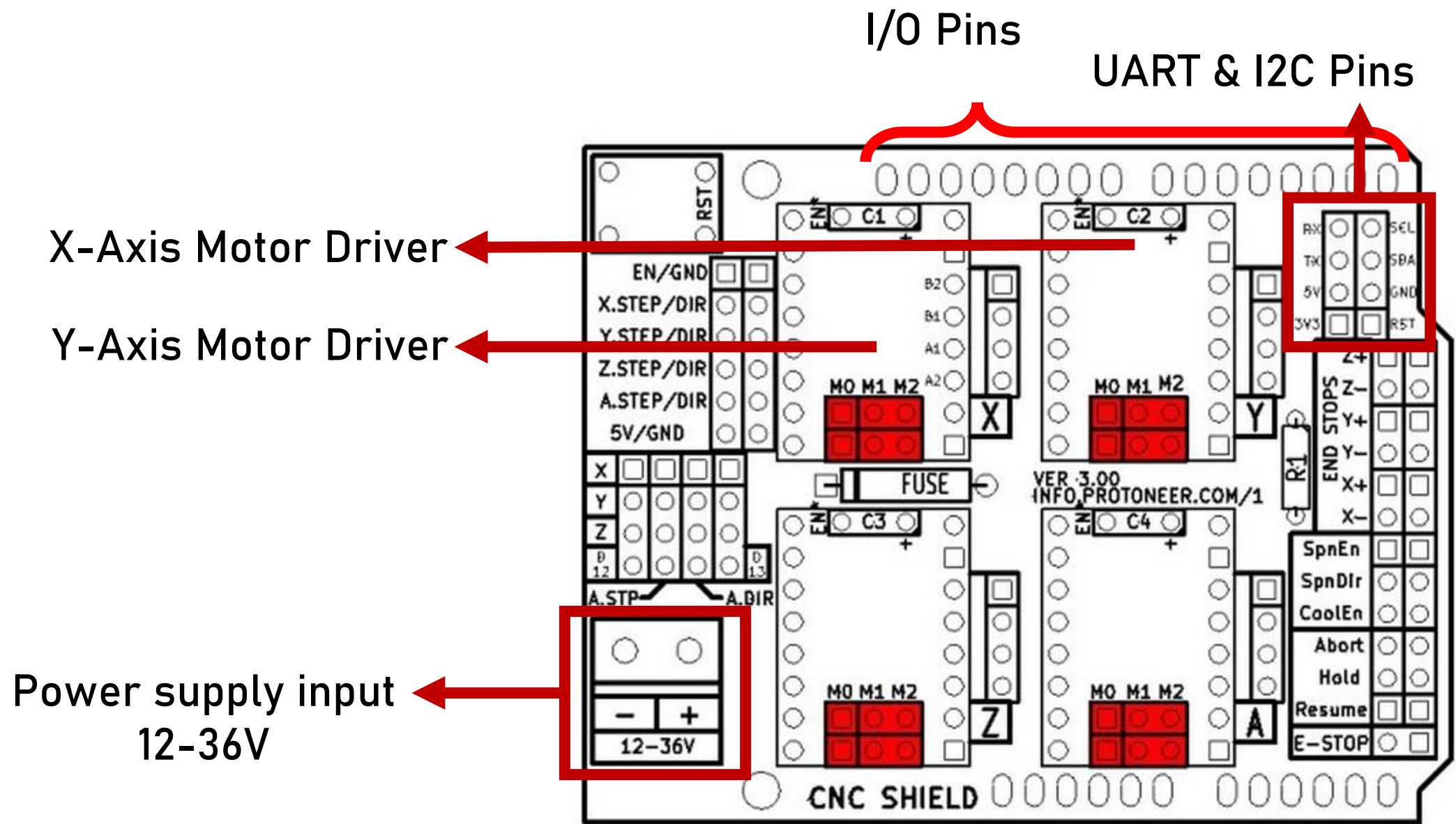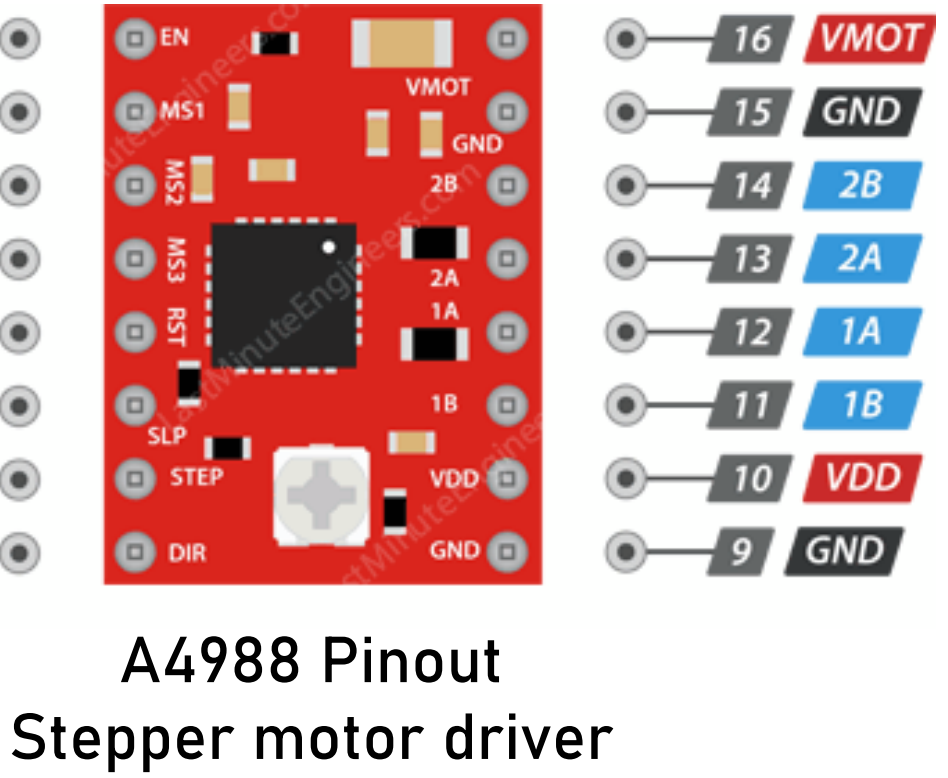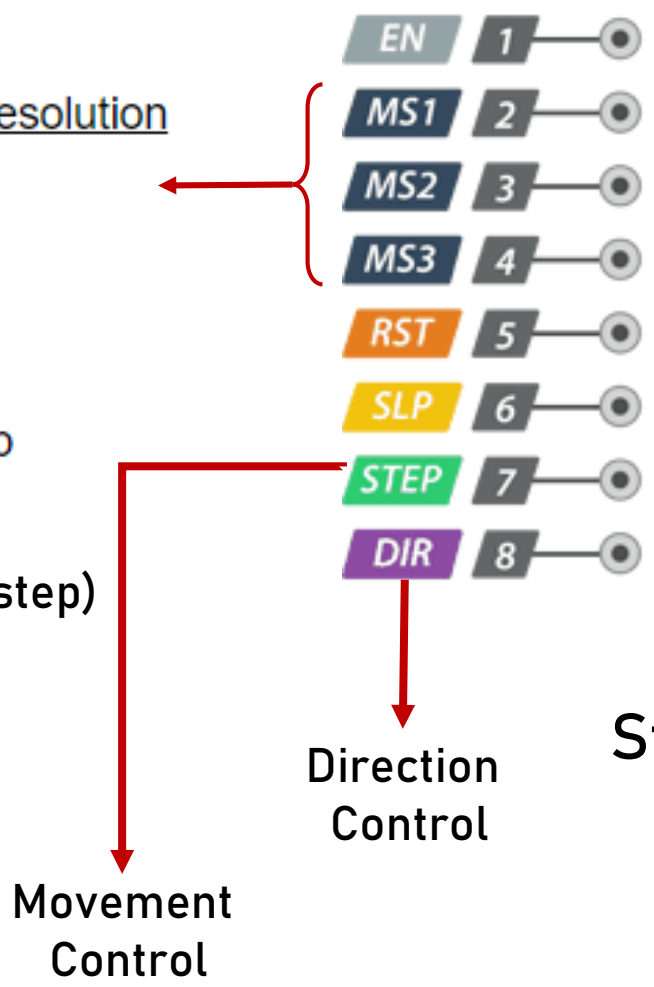# BOARDS CONFIGURATION :
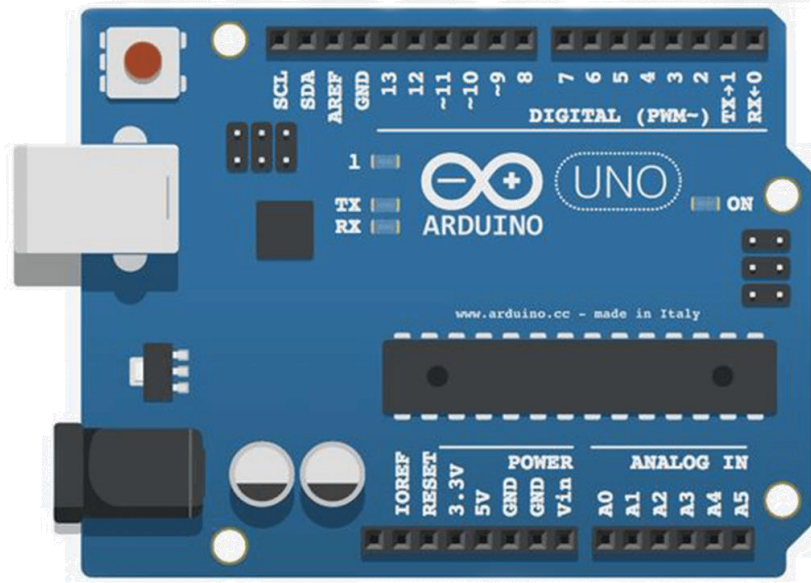
Arduino UNO
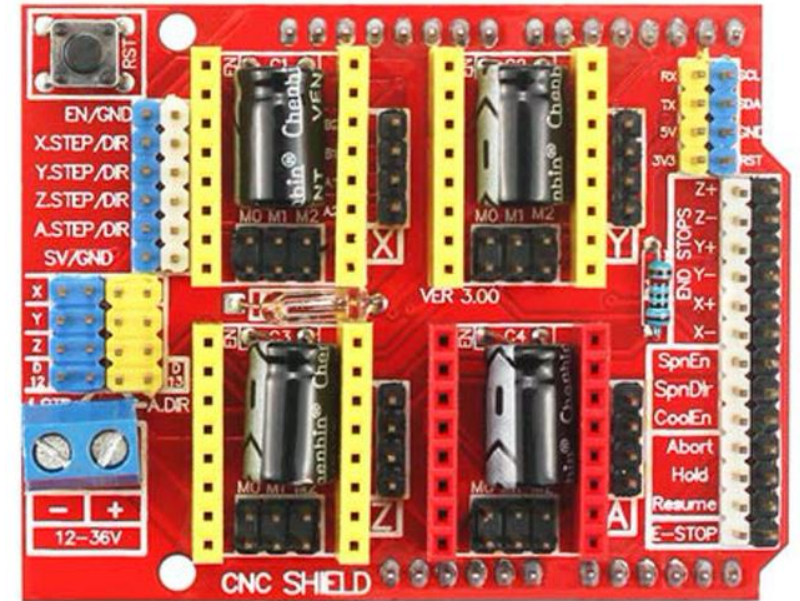
CNC Shield V3.0

BOARDS CONFIGURATION :

MOTORS CONFIGURATION :

MS0	MS1	MS2	Microstep Resolution
Low	Low	Low	Full step
High	Low	Low	Half step
Low	High	Low	Quarter step
High	High	Low	Eighth step
High	High	High	Sixteenth step

Microstep Configuration

(We put both X/Y-Axis Motors on full step)

EN 1
MS1 2
MS2 3
MS3 4
RST 5
SLP 6
STEP 7
DIR 8

16 VMOT
15 GND
14 2B
13 2A
12 1A
11 1B
10 VDD
9 GND

**A4988 Pinout
Stepper motor driver**
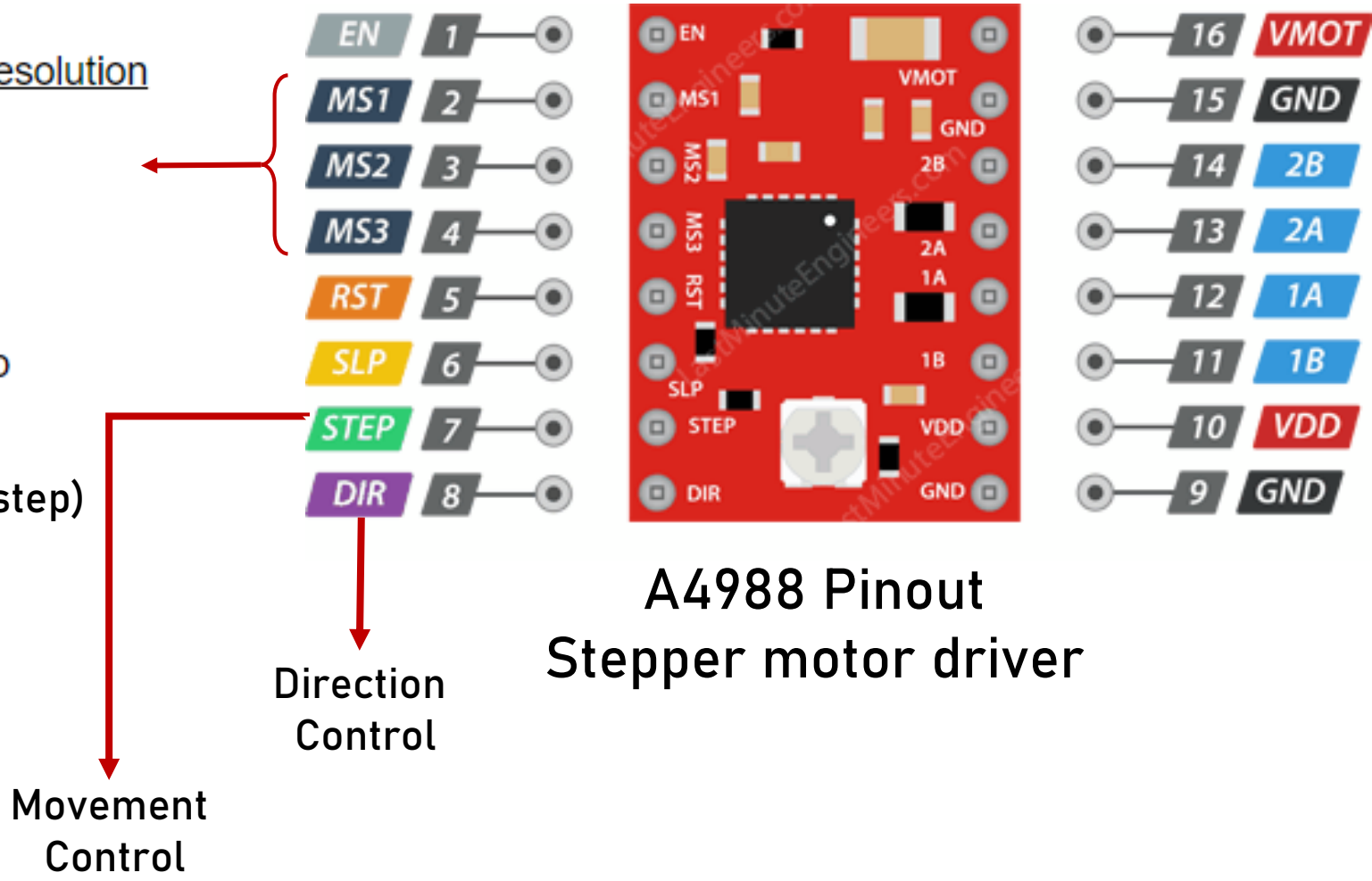
Movement
Control

Direction
Control

MOTORS CONFIGURATION :

MS0	MS1	MS2	Microstep Resolution
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High	High	High	Sixteenth step

Microstep Configuration
(We put both X/Y-Axis Motors on full step)

Nema 17
Stepper Motor

Movement
Control

Direction
Control

A4988 Pinout
Stepper motor driver

MQTT CONNECTION:

Calculated data in python will be sent to MQTT Server,
and after that it will be transferred to MCU (Arduino UNO)
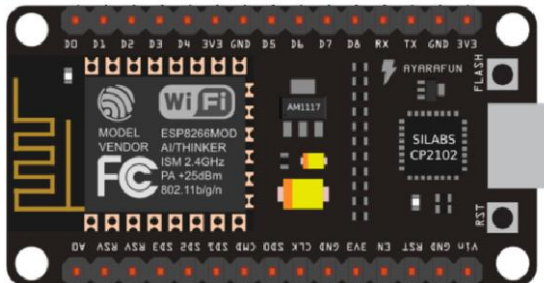using UART Serial Protocol.

```
XXX;XXX;XXX;XXX;\n
X_INPUT : Motor steps in X axis
X_DIRECTION : +,- (Forward , Backward) Movement direction
Y_INPUT : : Motor steps in Y axis
Y_DIRECTION : +,- (Forward , Backward) Movement direction
```


UART DATA TRANSFER (SERIAL)

DATA : XXX;XXX;XXX;XXX;\n
X_INPUT;X_DIRECTION;Y_INPUT;Y_DIRECTION;\n