Arduino-python-piano-with-mqtt

https://github.com/kuviyam/IoT-projects

Architecture

Push switch

Hand Crafted keypad
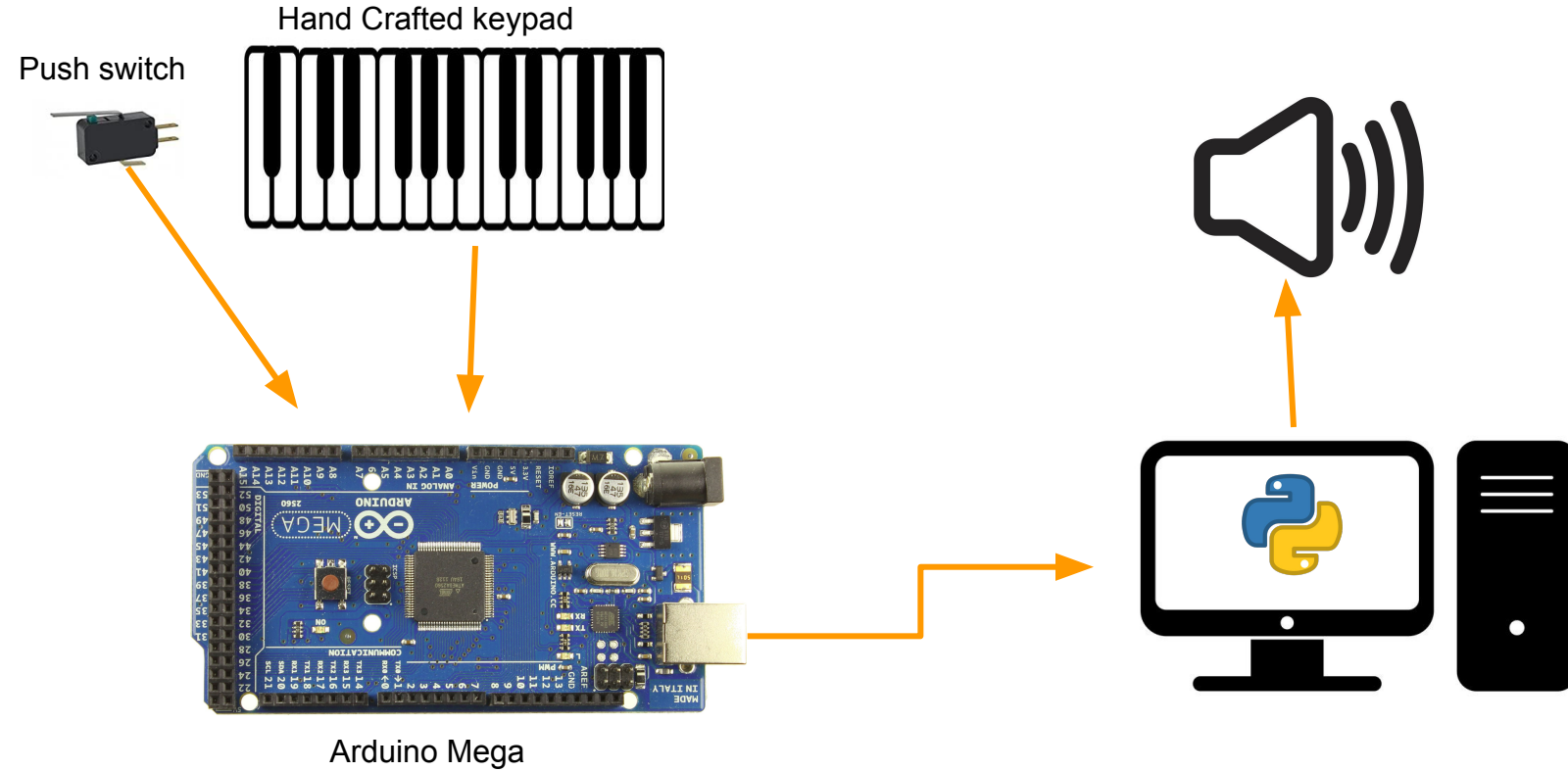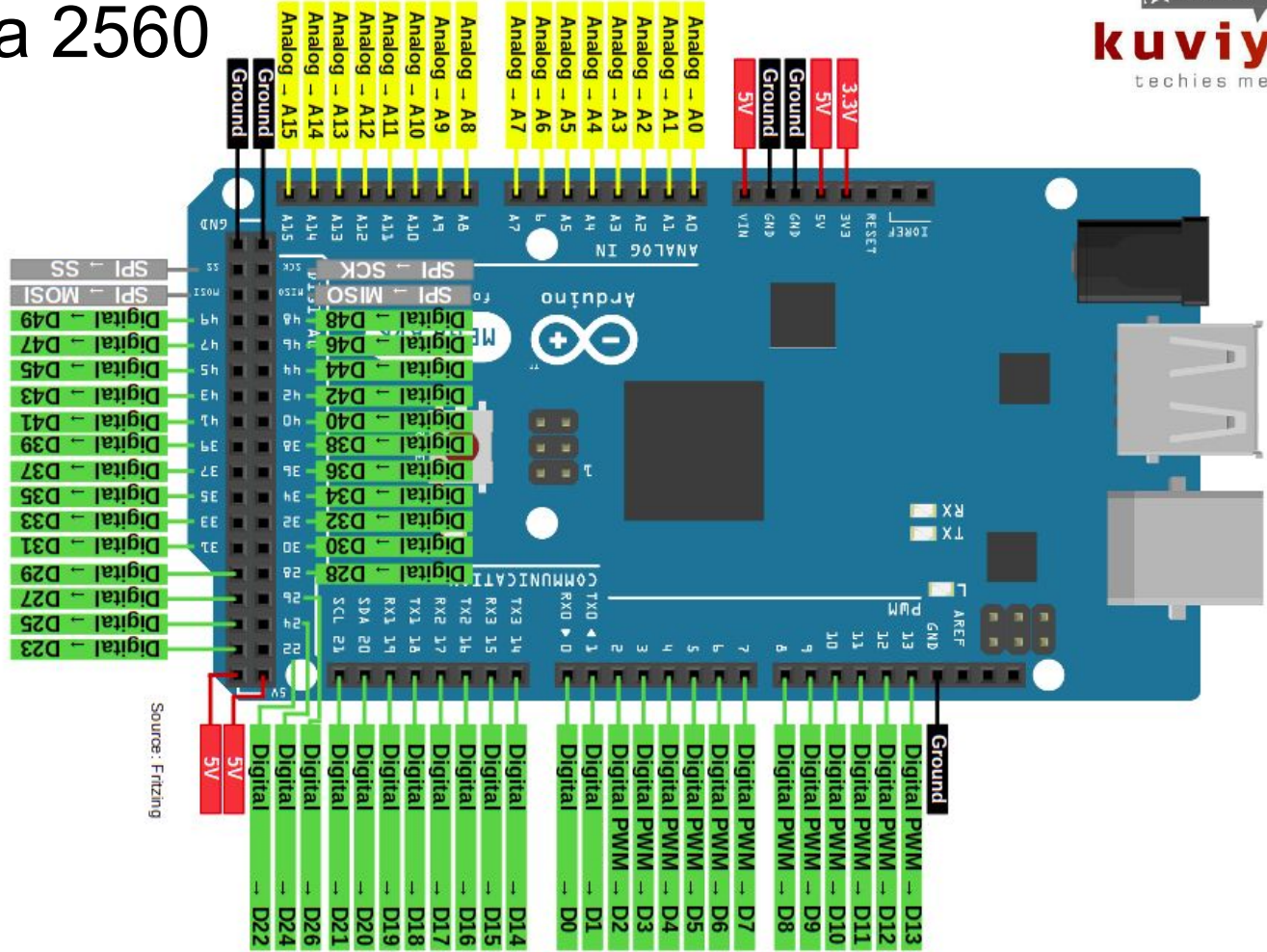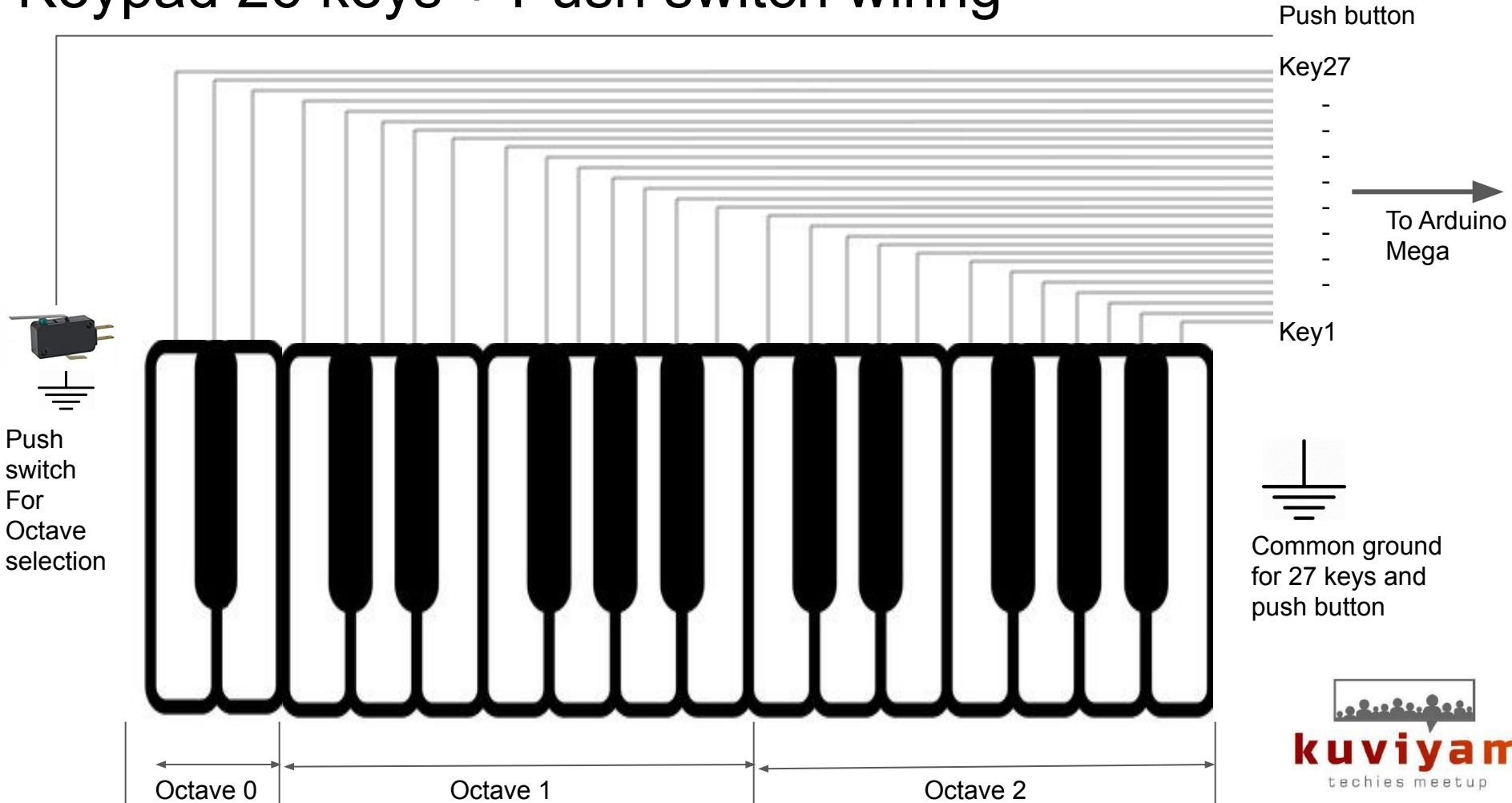
Arduino Mega

Step1: Make Keypad

Using cardboard or Acrylic or 3d printer make keypad, use push button mounted in proper position in PCB for each keys

Step2: Make the connection as shown in following slides

Arduino Mega 2560 Pinout

Source: Fritzing

Keypad 26 keys + Push switch wiring

Push button

Key27

-
-
-
-
-
-
-
-

To Arduino
Mega

Key1

Push
switch
For
Octave
selection

Common ground
for 27 keys and
push button

Octave 0

Octave 1

Octave 2

kuviyam
techies meetup

Keypad to Arduino Pin Mapping

Keypad	Arduino
key1	D38
key2	D37
key3	D36
key4	D33
key5	D32
key6	D31
key7	D30
key8	D29
key9	D28
key10	D27

Keypad	Arduino
key11	D26
key12	D25
key13	D24
key14	D23
key15	D22
key16	D2
key17	D3
key18	D4
key19	D5
key20	D6

Keypad	Arduino
key21	D7
key22	D8
key23	D9
key24	D10
key25	D11
key26	D12
key27	D13

Push switch	Arduino
Normally Open Contact	D40

Color mapping

	Octave 0	3 Keys
	Octave 1	12 Keys
	Octave 2	12 Keya
	Push Switch	1 switch

Step3: Flashing arduino code

Download and flash arduino with this code

Step4: Open python file in computer

In your computer install requirements by running following command
    pip install -r requirements.txt

Install sox using following command
    sudo apt install sox

Run python file using following command
    python main.py

Step5: Play the piano

Step6: Use Push switch to increase / decrease Pitch by 1

Happy Learning !!!