Robotics

Team 5
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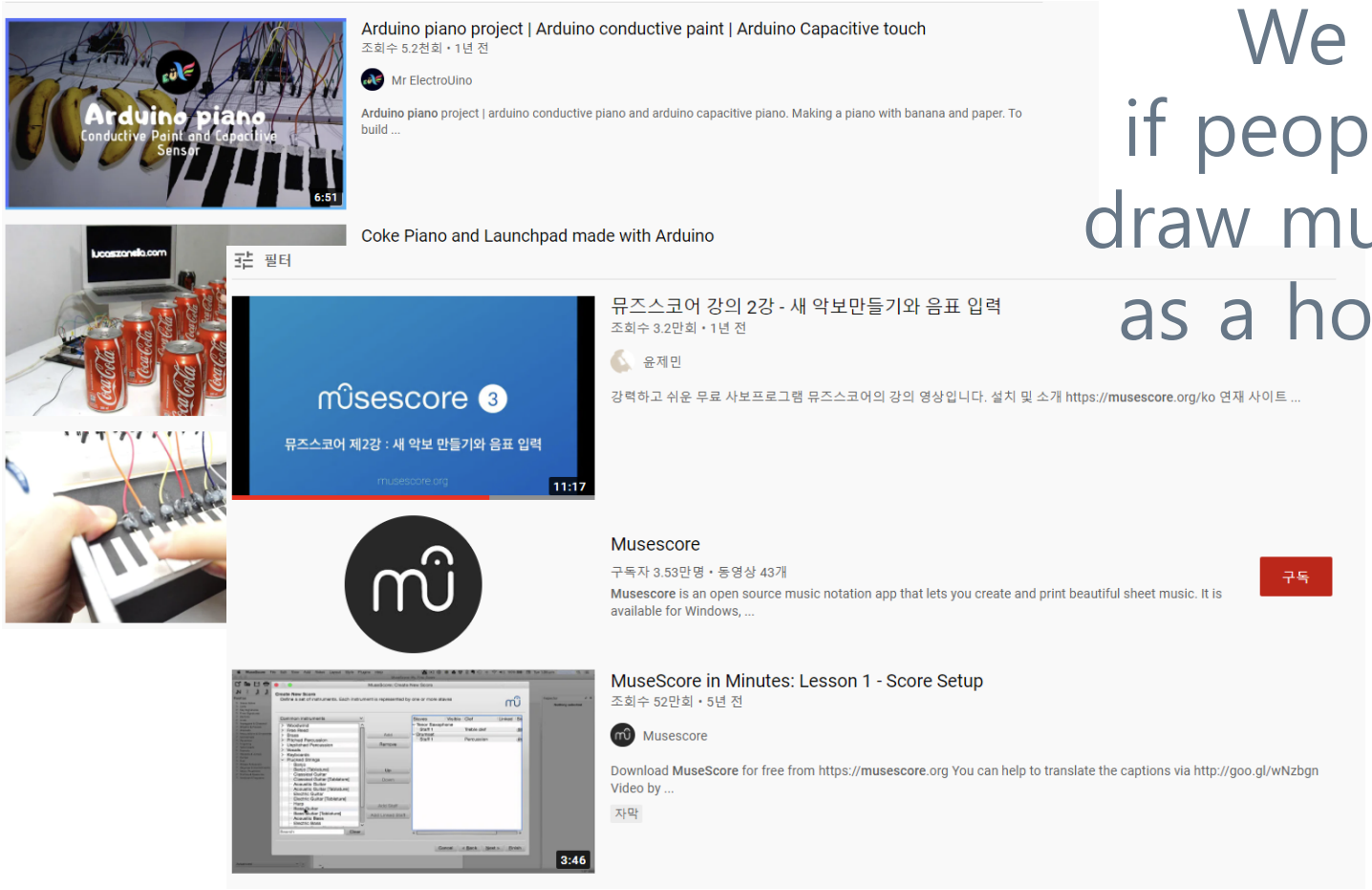
01 Our Project Title & Goal

MusePiano

:People who don’t know music and note can write music sheet easily

02 Related work & Motivation

Related work

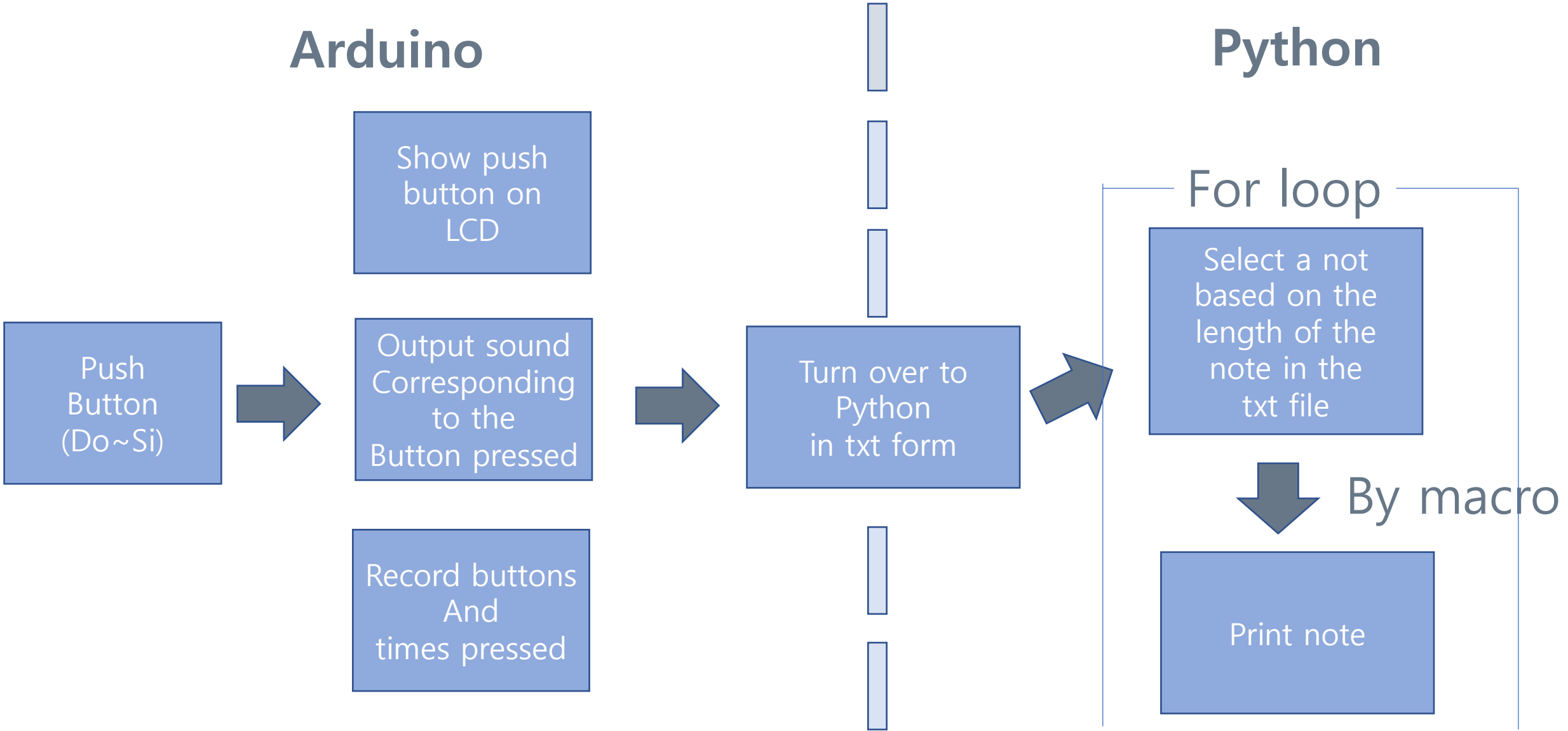


Motivation

We think it would be good if people who don't know how to draw music sheet, or play the piano as a hobby could get music sheet right away

03 Proposed system – Image Capture

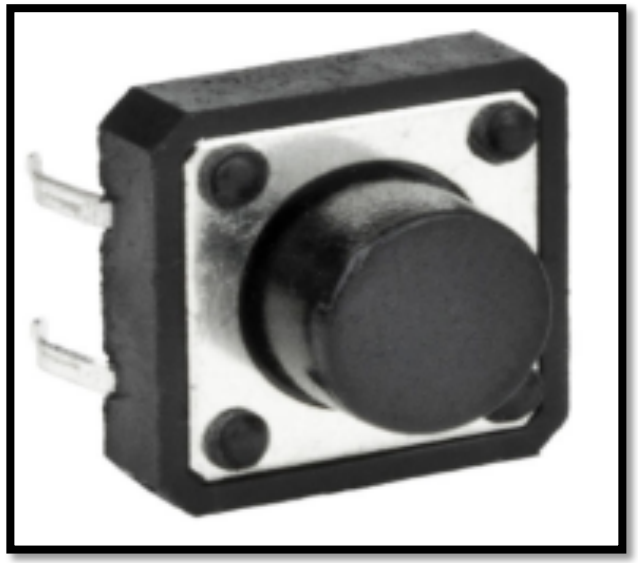
03 Proposed system – Block diagram



03 Proposed system – Overall system architecture

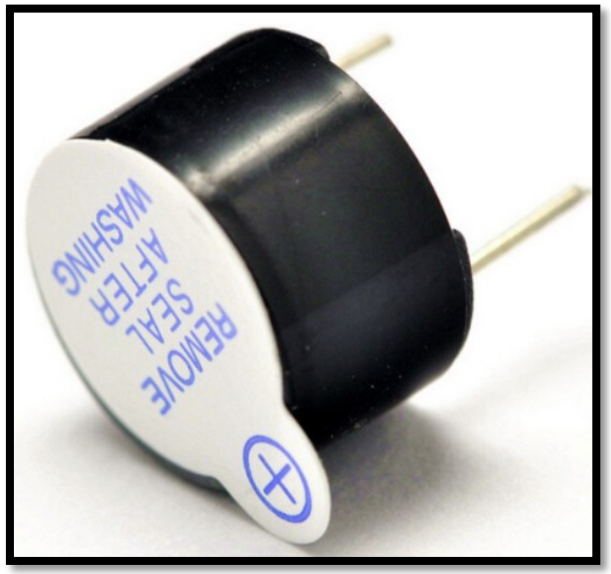
Function 1	Function 2	Function 3
If you press button, LCD show the note that button point	Produce music based on files	If you press one, Print screen automatically appear

03 Proposed system – Overall system architecture



Push Button

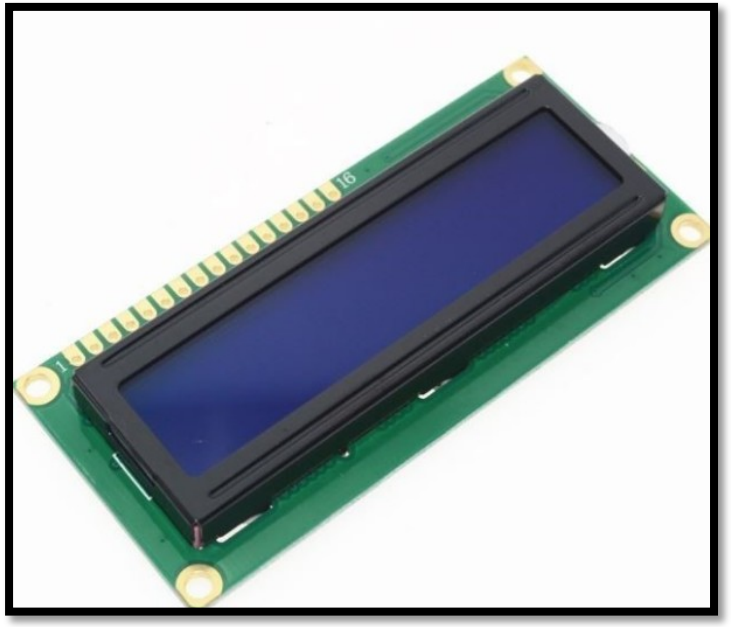
It will replace the piano keyboard



Piezo Speaker

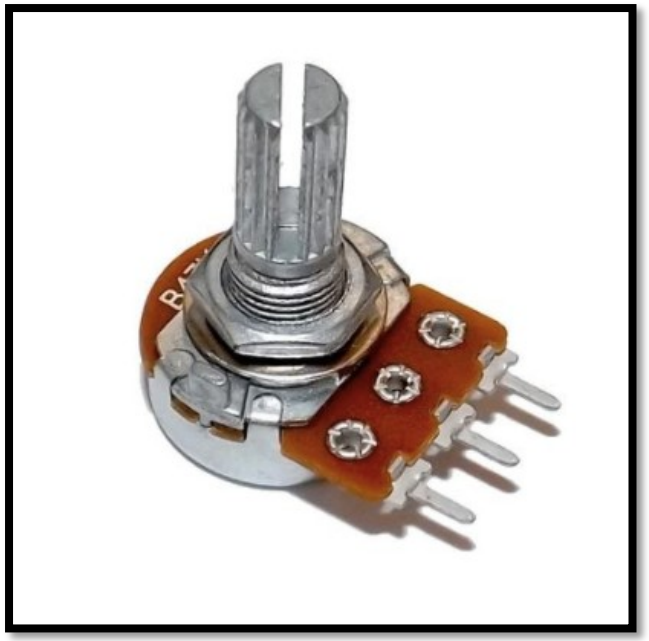
When the button pressed,
Sounds occur

03 Proposed system – Overall system architecture



LCD

Print the tone
When we
Press button



Variable Motor

Adjust the output value of
LCD

03 Proposed system – Sketch code

Sound & Print a note (if lcd is full, erase all output on screen)

```
//When the lcd screen is full, erase all the output on the screen.
if(cnt == 4){
  delay(100);
  lcd.clear();
  cnt=0;
}

//When Do_button is pressed
if(Do == HIGH){
  //To print note in lcd
  lcd.print("Do-");
  //To send note in Serial
  Serial.println('C');
  //Output sound to Piezo
  tone(47,522,500);
  delay(500);

  //When Do_button is not pressed
  if(Do == LOW){
    noTone(47);
  }
  //Count the number of note displayed on the LCD
  cnt++;
}
```

Read the notes and the length of the notes in the file then enter them into a

```
for i in melody: # read i from melody and output a note
                 #to the length of the note

  if is_digit(i): #if i is digit, change note
        speed = float(i)
        # print(speed)
        if speed >= 1.0:
            if speed >= 2:
                key_press_once("6")
            else:
                key_press_once("5")
            # print("4분음표")
        elif speed < 1.0:
            # print("8분음표")
            key_press_once("4")
    else: #if i is word, output note
        note.append(i)
        key_press_once(i)
        if count == 0:
            control_down()
            count = 1
```

04 Project Result - Video

https://youtu.be/GAPQ8E9BB4k

05 Special points of our proposed system

Pros

01

Convert the Contents of Button to Sheet music

02

Check the notes immediately

Cons

01

It can only be implemented within one octave

06 Conclusion and future work

Conclusion

Team 5 creates **“MusePiano”**
that can easy and quick to translate the code into sheet music

Future Work

1.function of raising and lowering octaves

2. Now, we have to set the meat manually
But we will make it possible to change automatically

07 Member Role

Team member	Work	Contribution(%)
Gu Bon Wook (202035305)	Idea design and feedback Check progress Coding & Making hardware Make a ppt	**25%**
Park Jae Hyeok (202035335)	Idea design and feedback Writing plan report Making hardware & Coding Edit the Video Presentation(final)	**25%**
Lee Ha Jeong (202035375)	Idea design and feedback Writing plan report Purchase of supplies Coding & Making hardware Take a video	**25%**
Lee Ji Heon (20184735)	Idea design and feedback presentation(middle) Coding & Making hardware Upload the video	**25%**

Thank you