Electronic piano report

**Introduction:**

The electronic piano is based on the Arduino and the capacitive touch sensor. The sensor will send the digital signal to the Arduino board and then the piezo will make the different frequency sounds. Compared with the piano notes, it is C4, D4, E4, F4, G4.

**Component used:**

Arduino x1

Capacitive touch sensor x5

Piezo x1

**Circuit:**

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**Code:**

|  |
| --- |
| void setup() { |
|  | Serial.begin(9600); |
|  | pinMode(12,OUTPUT); |
|  | } |
|  |  |
|  | void loop() { |
|  | int dol=digitalRead(2); |
|  | int re=digitalRead(3); |
|  | int mi=digitalRead(4); |
|  | int fa=digitalRead(5); |
|  | int so=digitalRead(6); |
|  | int la=digitalRead(7); |
|  | int xi=digitalRead(8); |
|  | if(dol==1) //do |
|  | { |
|  | digitalWrite(12,HIGH); |
|  | tone(12,261,300); |
|  | } |
|  | if(re==1)//re |
|  | { |
|  | digitalWrite(12,HIGH); |
|  | tone(12,294,300); |
|  |  |
|  | } |
|  | if(mi==1)//mi |
|  | { |
|  | digitalWrite(12,HIGH); |
|  | tone(12,330,300); |
|  |  |
|  | } |
|  | if(fa==1)//fa |
|  | { |
|  | digitalWrite(12,HIGH); |
|  | tone(12,350,300); |
|  |  |
|  | } |
|  | if(so==1)//so |
|  | { |
|  | digitalWrite(12,HIGH); |
|  | tone(12,392,300); |
|  | } |
|  | // if(la==1) |
|  | // { |
|  | // digitalWrite(12,HIGH); |
|  | // tone(12,440,100); |
|  | // |
|  | // } |
|  | // if(xi==1) |
|  | // { |
|  | // digitalWrite(12,HIGH); |
|  | // tone(12,494,100); |
|  | // |
|  | // } |
|  | delay(500); |
|  | } |

**Code description:**

I input 6 digital signal to Arduino board. One is piezo and the other are capacitive touch sensors. The piezo will make the different frequency sounds based on which sensor you touched. The frequency value is from the internet and the first senor I assigned means C4 in piano notes. The last senor means G4. The reason why I didn’t assign from C4 to B4 is that when I connect more than one capacitive sensor to the Arduino board. The board will lose the power supply. It seems like the power for Arduino board can only supply 5 capacitive touch sensor. Therefore, I comment the rest of the code, it doesn’t mean these code are wrong.

**Demo:**

[*https://www.youtube.com/watch?v=RquFlk5rMOs*](https://www.youtube.com/watch?v=RquFlk5rMOs)

**Appendix:**

Piano notes frequency

**A screenshot of a cell phone

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**Reference:**

<http://pages.mtu.edu/~suits/notefreqs.html>

<http://kayarvizhy.com/2016/08/touch-sensor-buzzer/>