

Music Through Drawing

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Concept

When I first starting thinking about the concept for my NIME I noticed that I wanted to do something involving my hands such as playing the piano or building with legos. However, after trying to think about a unique concept I realized that another activity I like to do that involved my hands was drawing. As a result, I decided to create a NIME that involved making music through my movements while drawing.



Concept

To do this, I decided to use a drawing tablet to create the artwork and use some sensors that can detect my position while using the tablet. Based on my position, speed and the way that I am creating the linework it will affect the pitch of the note I am playing and the type of sound that is created.



How It Works

For my NIME I will need to use:

- Arduino Uno
- Breadboard
- Connecting Wires
- At least two ultrasonic distance sensors
- Wacom Tablet/Pen
- Software that is capable of communicating with wacom tablet and arduino (max program)



How It Works



- The wacom tablet will determine when the pen comes into contact with the surface and the distance sensors will detect how far away or close the pen is to determine the range of notes.
- Two of the buttons on the side of the tablet when pressed will temporarily raise the note by half a step or lower the note by half a step (for sharps and flats).



- Alternatively the same could be accomplished with the two buttons on the side of the pen.



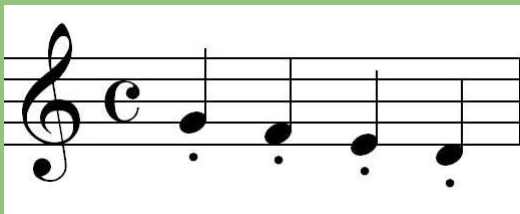
How It Works

- To trigger the sound while drawing, when the pen comes into contact with the tablet notes will be played based off of how far it is from both of the sensors.
- From left to right the notes C, D, E, F, G, A, and B will be played and from up to down the octave will change.

Ect . . .	C	D	E	F	G	A	B
1 Octave Higher	C	D	E	F	G	A	B
Middle C	C	D	E	F	G	A	B
1 Octave Lower	C	D	E	F	G	A	B
Ect . . .	C	D	E	F	G	A	B

How It Works

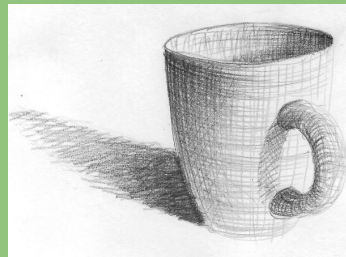
- I will most likely base the sample sound off of my trumpet or from video game music.
- I might make the type of sound alter in based something such as if the eraser part is used or the style of drawing (Example: Staccato notes played while stippling).

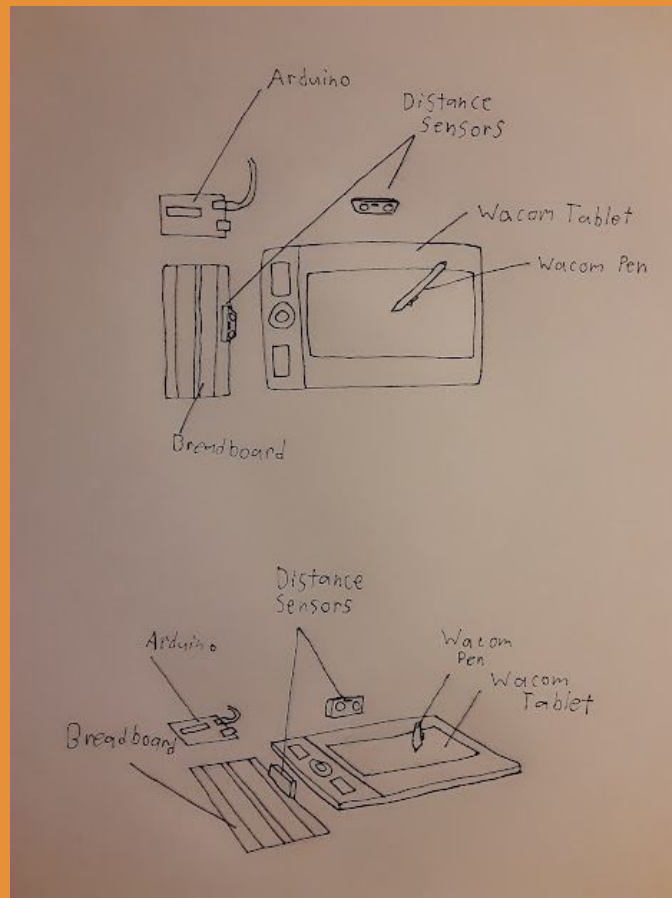


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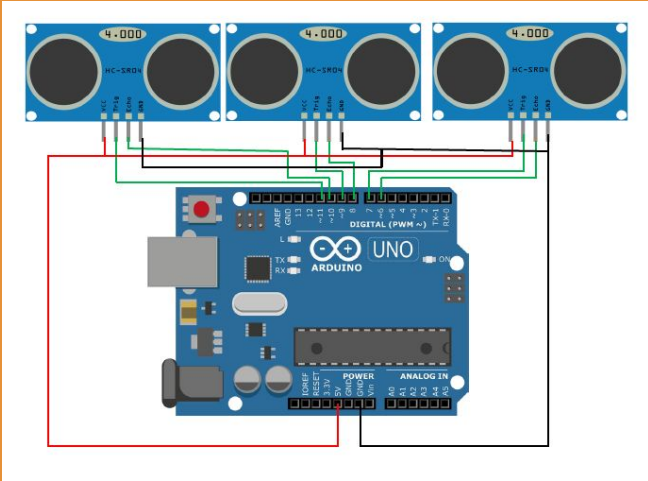
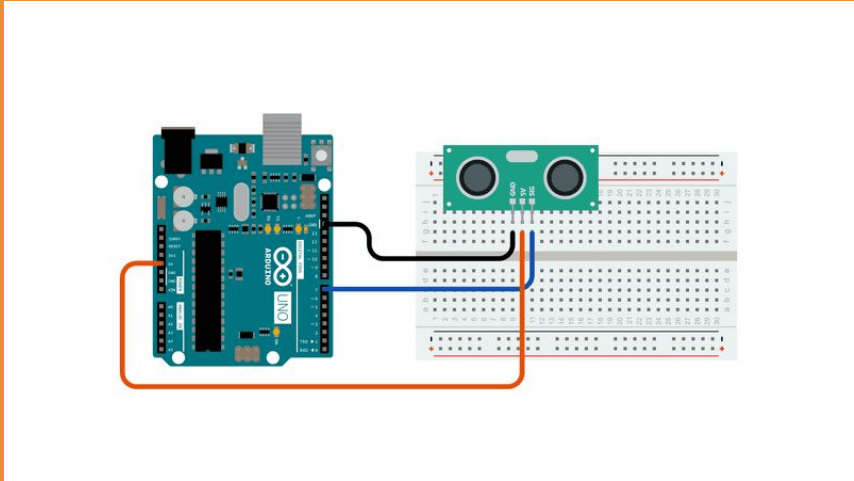


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Drawing of NIME



Examples of Similar Circuits

Scheduling

- By class 8 or 9, I should have purchased the components and downloaded the sample sound (I already own the wacom tablet).
- By class 10 or 11, I want to have mapped out the notes onto the wacom tablet.
- By class 12, I want to have figured out how to program two of the buttons to raise or lower a note to imitate sharps and flats.
- By class 13, I want to make any finishing touches that I need or add new ideas if I can.
- By class 14, I want to be finished with a final video of my project.

How My Video Will Look:

- I will do three short music segments.
- One that shows the general basics of my NIME, one where a specific melody is played while I'm drawing, and one where I draw and see what happens with the music.

Link to Video Example:

<https://www.youtube.com/watch?v=Z7oJXcWslng>