CSE 316 - Peripheral and Interfacing Lab

Mid Term - Project Report

Project Name: Building A Mini Piano Using Arduino

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1.Objective

The objective of this project is to build a mini piano with using some push buttons and an arduino uno.

2. Necessary Components

- Arduino Uno
- Pushbutton / Keypads
- Resistor
- Jumper Wires
- Speaker

3. How The Project Works

Arduino has a advance IO function of which is tone(). For this project we will use this tone() function of Arduino to generate tones. Using tone () function, we can generate square waves of different frequencies but with fixed duty cycle.

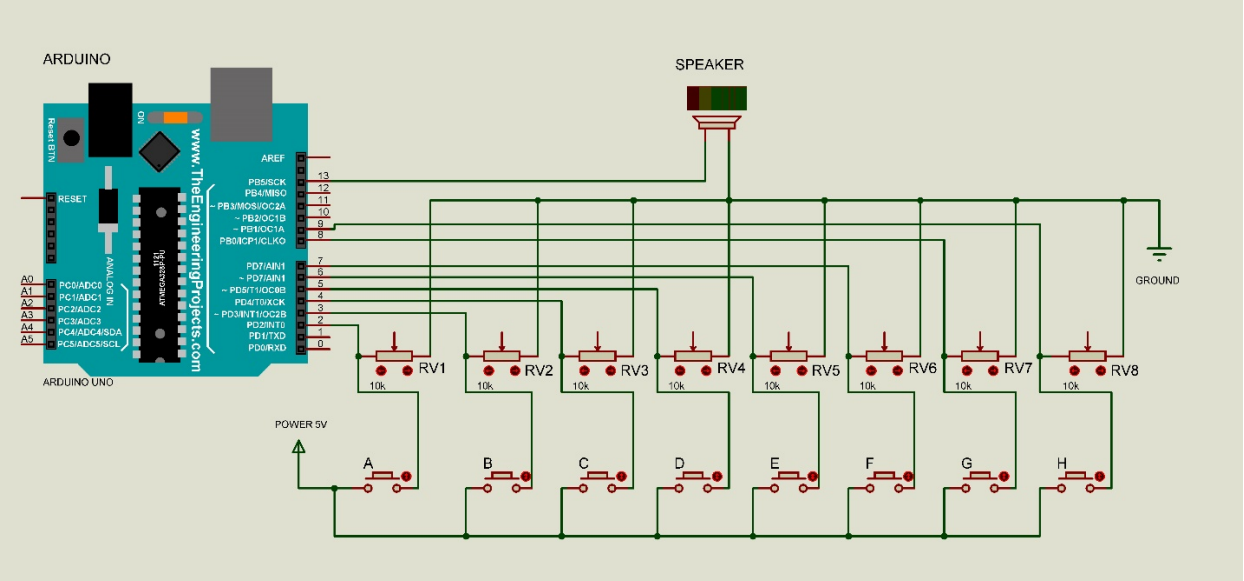
On this project an Arduino uno will be connected with a speaker and some buttons. Each Buttons works as input and the speaker works as output.

Each time when we press a button, Arduino will generate a specific frequency tone and play that tone trough speaker for a certain period.

4. Circuit Connection Setup

1. First, power and ground was connected to the through the Arduino.
2. Eight Push Buttons **A** to **H** are connected to Digital Pins 2 to 9 of the Arduino.They buttons works as input for the piano.
3. Each push button's one terminal connected to 5V DC power source and other terminal connected to digital pins of arduino with a 10k resistor which was also connected to ground.
4. Lastly, A DC Speaker's positive terminal is connected with Digital Pin 13 and negative terminal of that speaker is connected with ground. this speaker works as output.

Circuit Diagram Using Proteus



6.Arduino Code

The code for project is provided in the source file. [You can also find the project code on Here.]

7. Effects Of The Project

This Arduino based Piano project comes under the category of fun projects, this project doesn't have any real world applications (at least not directly) but can be used to understand certain features of Arduino.

-The End-