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What is our project

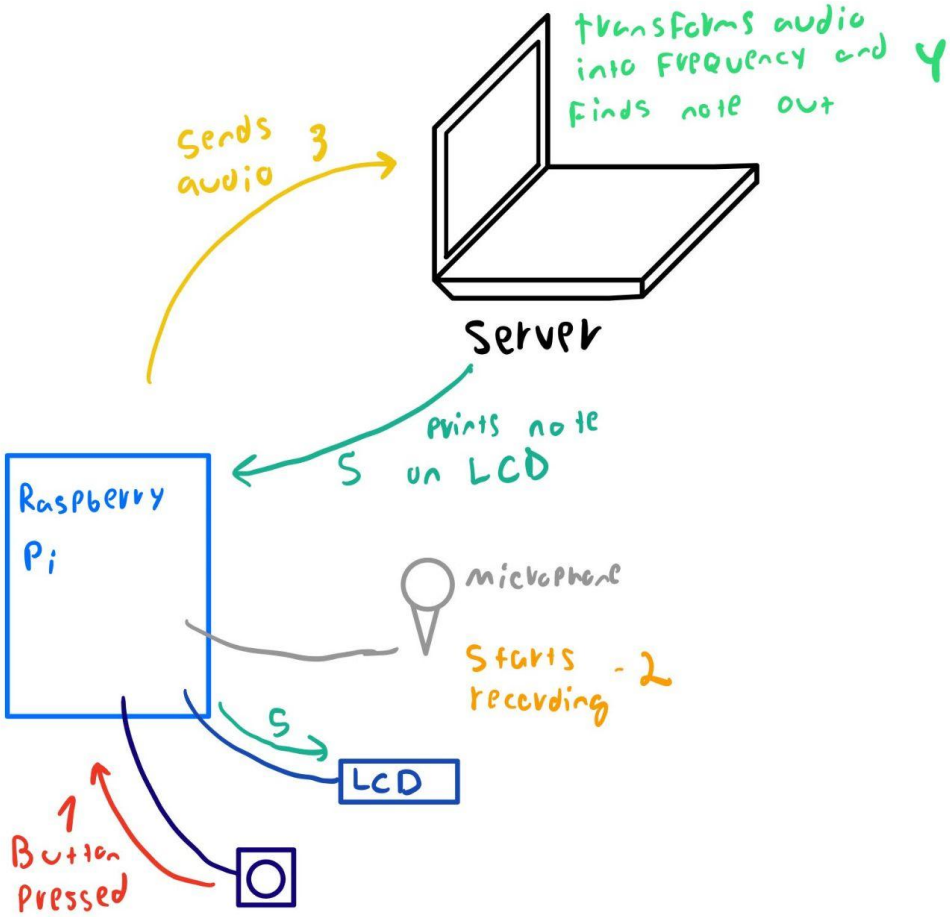
Our project is designed to determine what note a sound is in. It takes in data from the sound sensor and records it. After the sound has been recorded it is sent to our server where the server will calculate the FFT of the recorded sound. From there the average frequency of the FFT is found and this is what is used to determine what note the sound made. The note is then sent back to the rpi where it is to be printed out on the LCD screen.

Components

The components used are the LCD screen, a button, a computer, the raspberry pi and grove pi kit. Normally, a microphone would also be connected to the rpi to gather the audio to be analyzed, but in the demo we used a pre-sampled mp3 audio, because one was not available to us.

Limitations

The greatest limitation we had was our sound sensor itself. It has a very low sampling rate and it does not function like a microphone which records sound waves and not just sound level. What we have learned from this is if we ever want to create a better sound recognition system we will need to use a microphone which we did not have on hand. Instead we used our phone to record a short audio and used that instead of our sensor.


transforms audio into FREQUENCY and finds note out
4
Sends audio
3
Server
Prints note on LCD
5
Raspberry Pi
microphone
Starts recording
2
5
LCD
1
Button pressed