



Vybz



Team Members

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Why Vybz?

With music being a vital part of today's culture, the Vybz speaker would allow its user to recognize the “vibe” or atmosphere of any space and adjust its sound output accordingly, without requiring any manual adjustment of the speaker’s volume. This will make social interactions free of disruptions and will preserve the atmosphere in a social environment.



Objectives

- Build a device that can self-adjust its volume output in response to an increase or decrease in the noise level of a room.
- Program a Raspberry Pi to analyze analog signals via microphone and separate different sound inputs.
- Design a “smart” sound system that does not require manual labor to adjust its output when the atmosphere of its surroundings changes.



Challenges

- Accessing the analog signal of the room via microphone
- Understanding and programming the Raspberry Pi to process a digital signal
 - Learning the basics of Python
 - Generating sound profiles via the Fast Fourier Transform
 - Accessing libraries for code that will be useful but outside our current skill level
- Establishing a communication between the Raspberry Pi and the output from the speaker
- Figuring out an effective demo that does not impede on other's projects
- Coding the Raspberry Pi to communicate with the speaker and alter its output



Budget

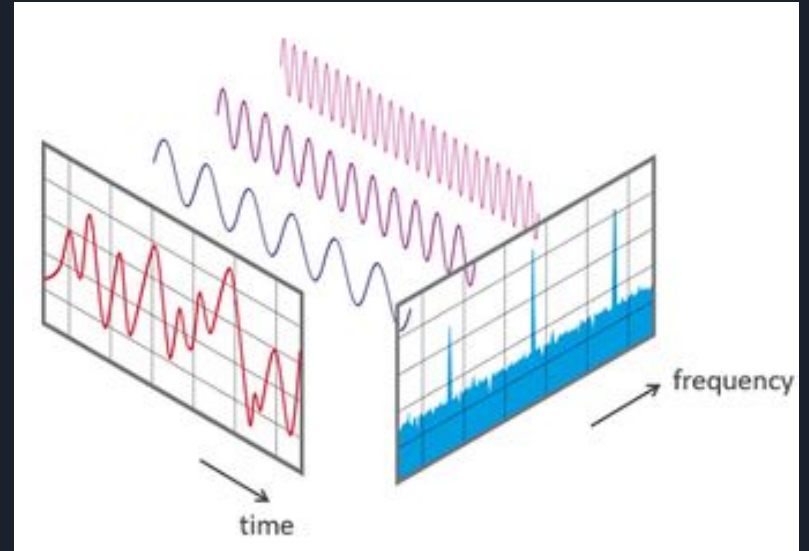
- Raspberry Pi (provided)
- A/D Converter - MCP3008 (\$3.75)
- USB Speakers (\$10.99)
- Microphone (\$9.99)

Total rudimentary cost: ~\$30

Progress



Configuration of the Raspberry Pi



Fast Fourier Transform Visual