ECE 153B Project Proposal: Snore Detector and Corrector

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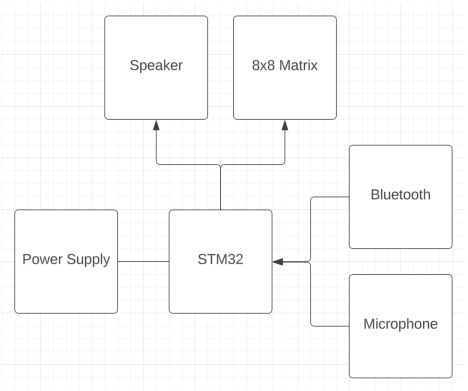
Overview/Goal/Purpose

The Snore Detector and Corrector's purpose is to detect your roommate's snoring and provide the user with the options to correct this behavior, in the form of flashing lights, loud noises, or both. The user may activate snore countermeasures through their phone, promptly waking the offender and ideally reducing snoring through any means necessary. It will also be able to auto-detect and suppress snoring using an onboard microphone.

Peripherals
Microphone
HC-05 Bluetooth Chip
Speaker
8x8 Matrix

Serial Interface Protocols
UART bluetooth
I2C

Block Diagram



Responsibility List

Website - Jacob
Hardware interfacing research - Liam
Software setup - Both
Hardware Integration - Liam
Testing - Both

Software Structure

Microphone
Connect the microphone to the STM32 board. Have signals trigger interrupt when sound level threshold is exceeded to prompt Bluetooth Module and termite for user input. (Or set up automatic response mechanism).

HC-05 Bluetooth Module
Create a UART connection between the HC-05 Bluetooth module and the STM32 board. Signals will be received through termite, similar to Lab 4.

8x8 Matrix
Connect the 8x8 Matrix to the STM32 board. Initialize external LEDs to be activated by termite/bluetooth module prompt or microphone threshold.

Speaker
Connect the speaker to the STM32 board. Initialize speaker to play when prompted by command through termite/bluetooth module.