Team Name:

Aventador

Team Members:

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Project Title: The Vehicle Sound Analyzer

General Idea of Our Group:

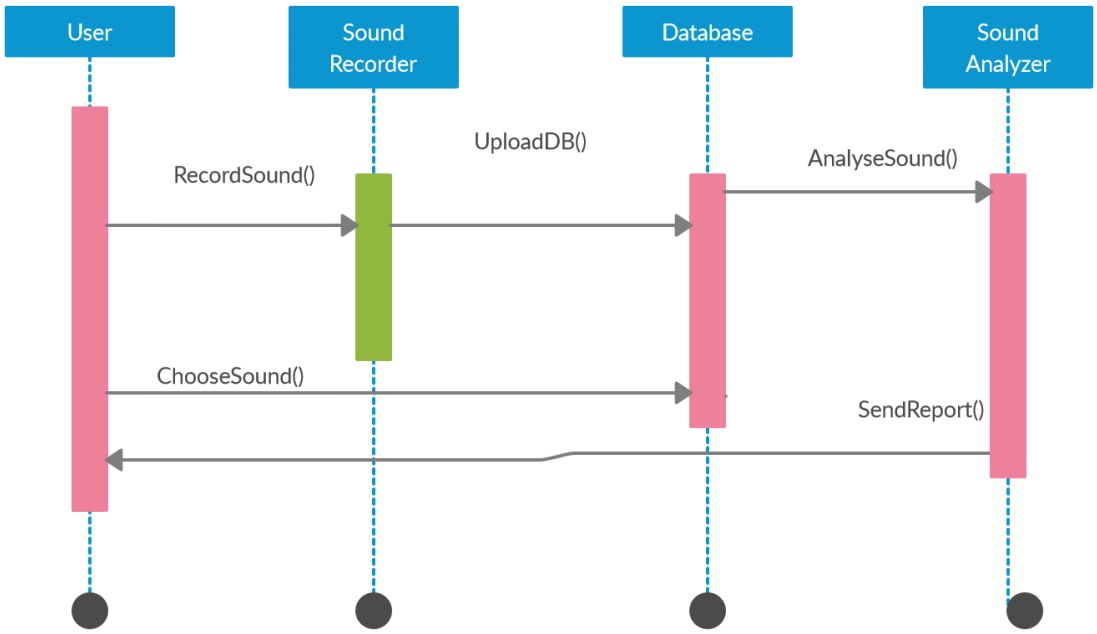
Basically, the project will target on vehicle sound and analyze the noise level for each type of vehicle. For example, the car with a high horsepower engine such as LS-3 will produce larger noise than the car with a low horsepower engine such as an i-VTEC. Besides carbon pollution, the noise pollution is another thing we need to be aware of for policy makers.

We will write a simple user interface app through MIT App Inventor 2 to collect sounds from different vehicles including cars, motorbikes, and trucks. The sound data acquitted will be sent to the Django server we set in advance.

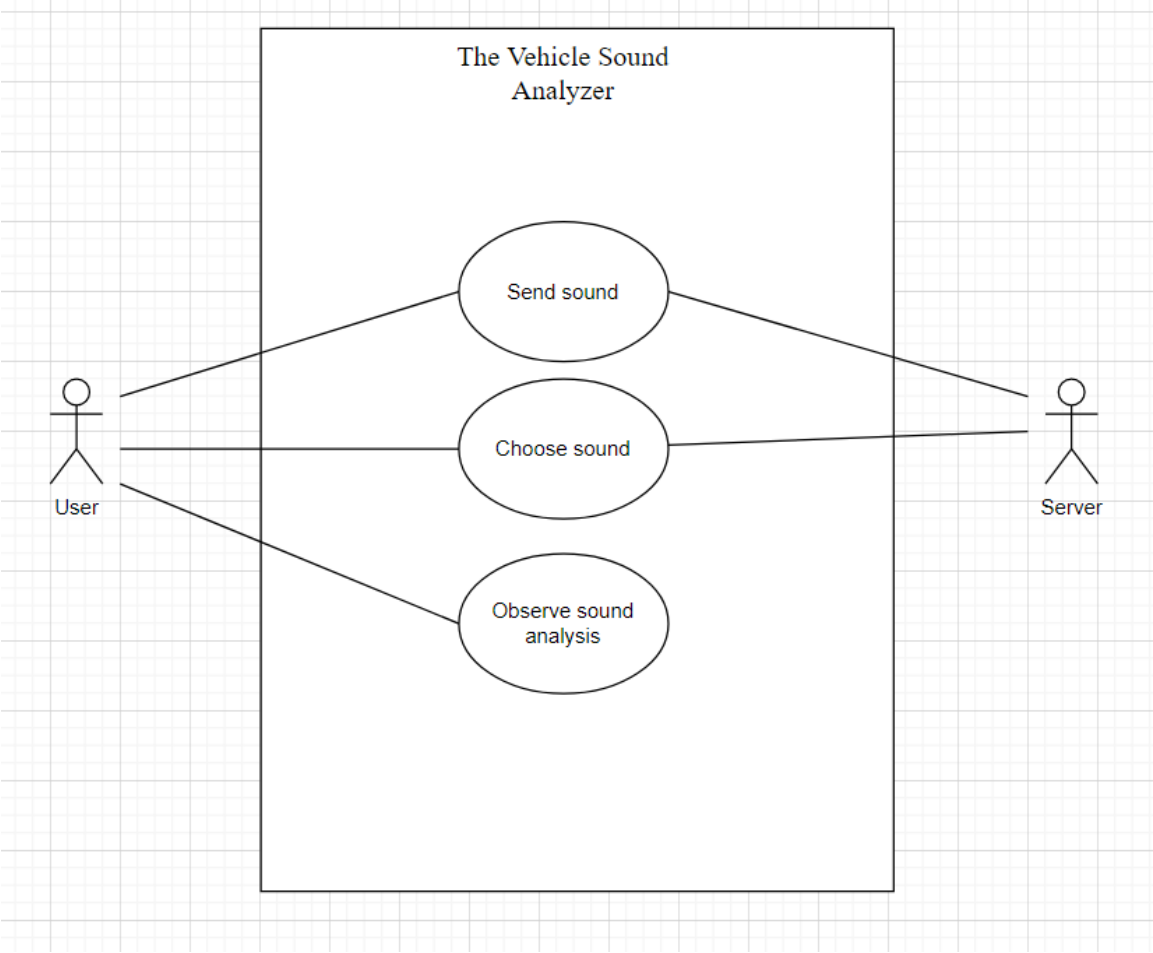
The server accepted the sound will start analyse the sound file and produce a report containing length of file, sampling frequency used (at least twice the frequency of sound), file type, file size, maximum detected frequency, SNR ratio in Decibel, sound waveform picture and the spectrogram of the sound.

The report will be sent back to the mobile app after processing. While the app will warn the user to stay away from the vehicle that produces high decibel sound.

Use sequence diagrams:


User
Sound Recorder
Database
Sound Analyzer
RecordSound()
UploadDB()
AnalyseSound()
ChooseSound()
SendReport()

Use Case diagram:



Proposed user interface: Apps from MIT App Inventor 2