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CS4950

Homework Design Document

**Contexts**

Train: sitting down on a loosely filled train.

The loop consists of sounds from a subway train with intermittent background noise and announcer speaking. I utilized text to speech to sonify all of the notifications that happens in a train since the user has plenty of resources to concentrate on the information provided.

Running: running throughout a city with lots of people walking around.

I combined a loop of city background noise and a loop of a woman running to create the background noise. I also added a synthesized siren sound to emulate loud vehicles passing by. Since the user should devote most resources to staying safe while exercising/in a state of exhaustion, I only used text to speech sonification for the text messages and voicemails of the highest priority. All other notifications uses a dynamically sonified frequency as explained below where the higher the frequency the more important the message.

* Tweet: 329.63 - 10\*priority + (20\*(favorites/1000000))
* Email: 493.88 - 10\*priority
* Voicemail and missed call: 554.37 - 10\*priority
* Text message: 440.0 - 10\*priority

Party: at a party with lots of conversations.

I used a loop with background conversation to emulate a party context. In this case, voicemails and missed calls are sonified since phone call related notifications are usually the most important. Otherwise, all other notifications are sonified with the following scheme where the higher the frequency the more important the message.

* Tweet: 329.63 - 5\*priority + (20\*(favorites/1000000))
* Email: 493.88 - 10\*priority
* Voicemail and missed call: 554.37 - 10\*priority
* Text message: 440.0 - 10\*priority

Lecture: teacher is very focused on lecturing and engaging the students.

I used a clipping from a lecture I recorded two years ago for my studying purposes as the background. In this context, tweets and emails are not sonified at all while the only notifications that get sonified are the top priority voicemails, missed calls, and text messages. I use a frequency generator for text messages and text to speech for voice mails and missed calls. However, in this context the app only sonifies the senders name.

**Mixing:** to avoid overwhelming the user with many sonifications all at once, I used a priority queue to process each notification. Each notification is sonified only if there is no audio being outputted by the device currently. I did this so that there would be no overlap of information.

Other features:

* The user can effectively mute or terminate the sonification during any context by pushing the “Power” button. The power button has sounds for turning on and off.
* User can freely alternate between eventstreams
* Batter and connection test:
  + If the battery is above low power and connection is okay or strong, it will respond with a positive sound.
  + If battery is in low or close to dead, it will respond with a negative sound.
  + If connection is poor, it will respond with a negative sound.
* Each event type can be toggled on or off. The text below each button corresponds to the current status of the event type. True is for on, false is for off.

The links for my sounds are below:

Train:

<https://freesound.org/people/Zabuhailo/sounds/193742/>

Running:

<https://freesound.org/people/InspectorJ/sounds/398159/>

<https://freesound.org/people/arnaud%20coutancier/sounds/271323/>

Party:

<https://freesound.org/people/Pastabra/sounds/366194/>