

# SOUND SCAPE

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# Problem

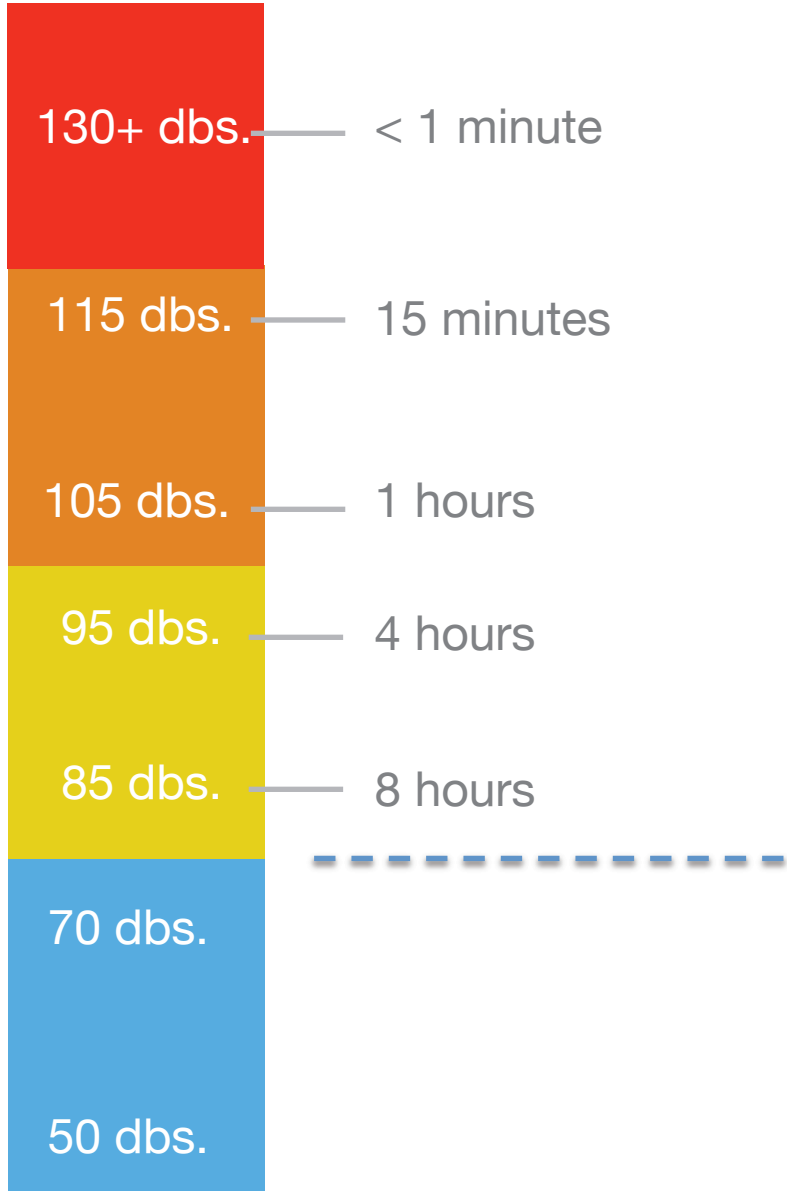
A lack of awareness about the long-term implications of noise exposure

**15%** of Americans between the ages of 20 and 69 experience hearing loss that may have been caused by **noise at work or during leisure activities.**

Studies on the health consequences of noise have indicated that noise **elevates heart rate, blood pressure, vasoconstriction, and stress hormone levels.**

Meditation produces **long-lasting changes** in brain activity.

Areas involved in **attention, working memory, learning, and conscious perception** are improved.



Noise exposure is **cumulative**;  
**Awareness** is key.



# Contextual Inquiry





**Very noisy** work environment

**Some control** over exposure levels



**Moderately noisy** work environment

**Lacks control** of his noise exposure



Dartmouth student who is exposed to **noisy social environments** multiple days per week

**Has control** over exposure levels

# Takeaways

Users **don't want an external device** that would inhibit normal work tasks

Generally aware of risks, **unaware of implications**

**Varying levels of control** over exposure

Interested in understanding **patterns of exposure** and knowing implications

# Tasks

# Measure and Record

Measure noise level at **frequent** and **regular** intervals throughout the day.

# Display Current “Soundscape”

Display the **current** noise level and report safe exposure time.

# Display Data Over Time

Display noise exposure data over an **extended timescale** (day/month/year).

Indicate **patterns in behavior**.

# Adapt Behavior

Make effort to **minimize risky exposure** and  
**maximize “zen time”**.

# Integrate crowd-sourced data

Gain **environmental awareness** using data  
from user base.

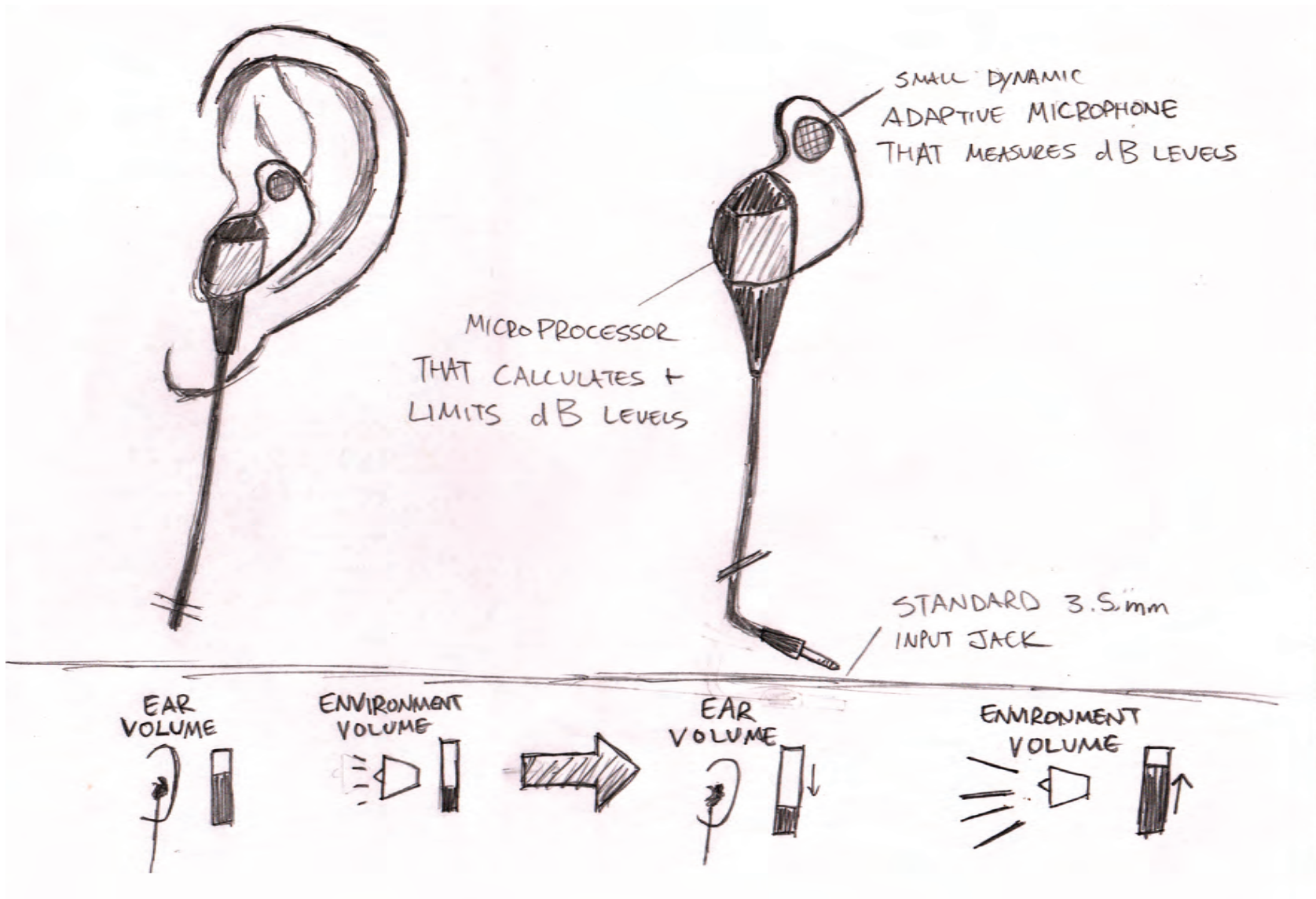


# Analysis + Implications

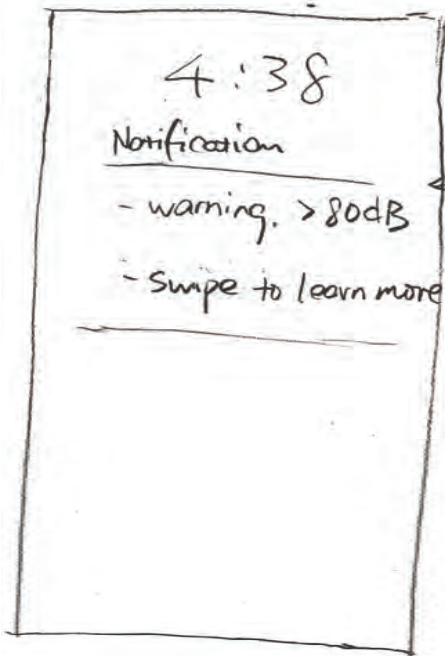
Analyze noise data and communicate the **long-term effects** of exposure.

**Designs**

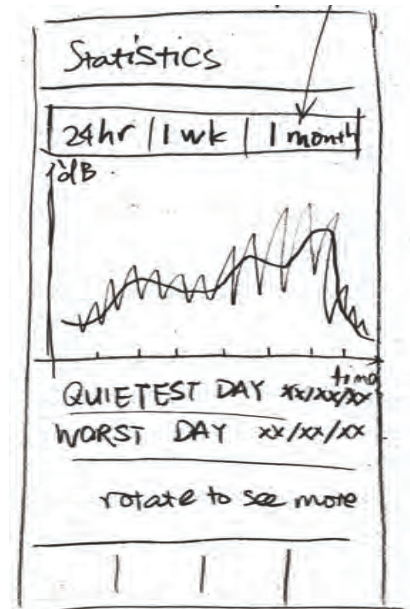
# Design #1



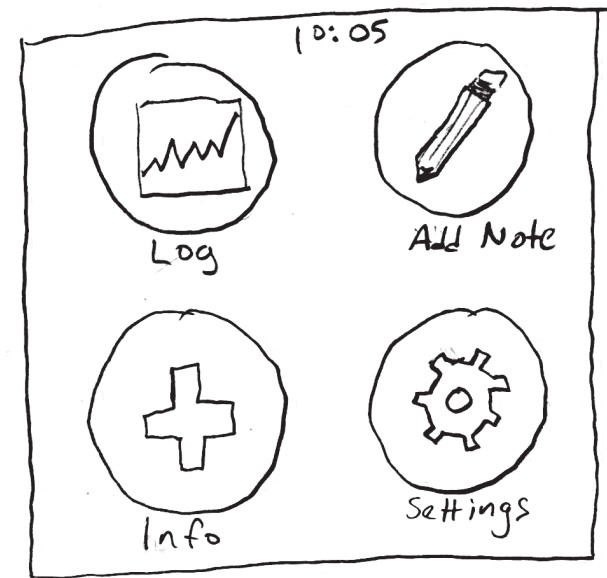
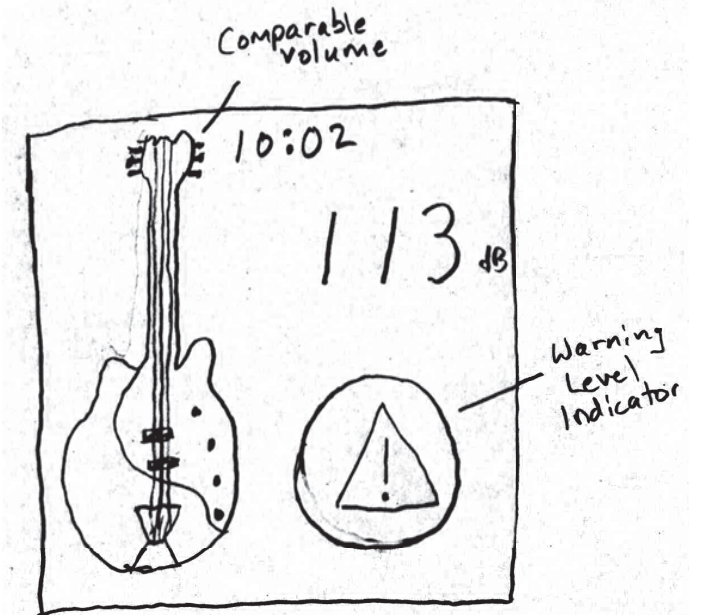
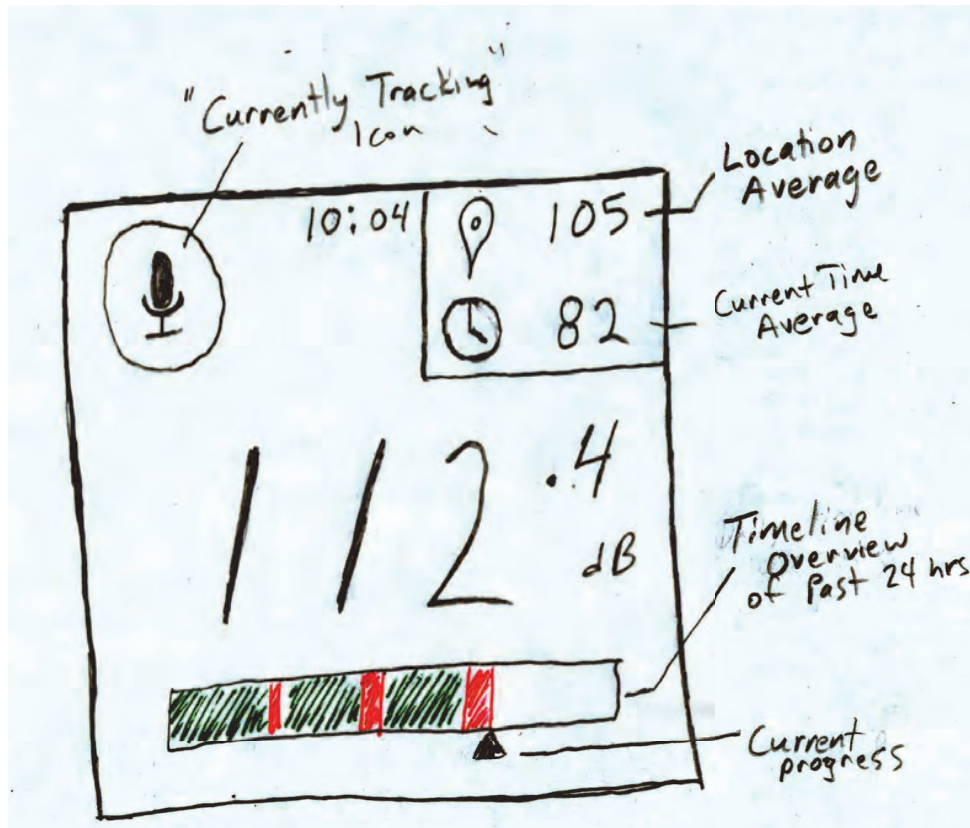
# Design #2:



when > 80 dB  
swipe to learn more  
show more related  
info on screen.

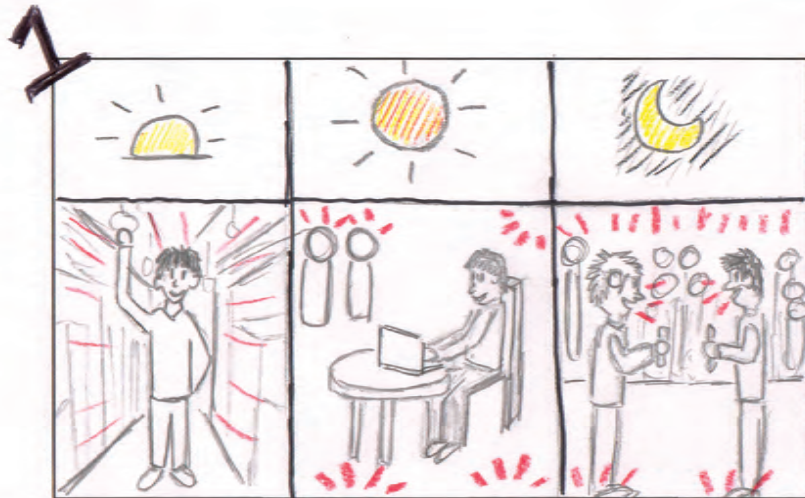


# Design #3

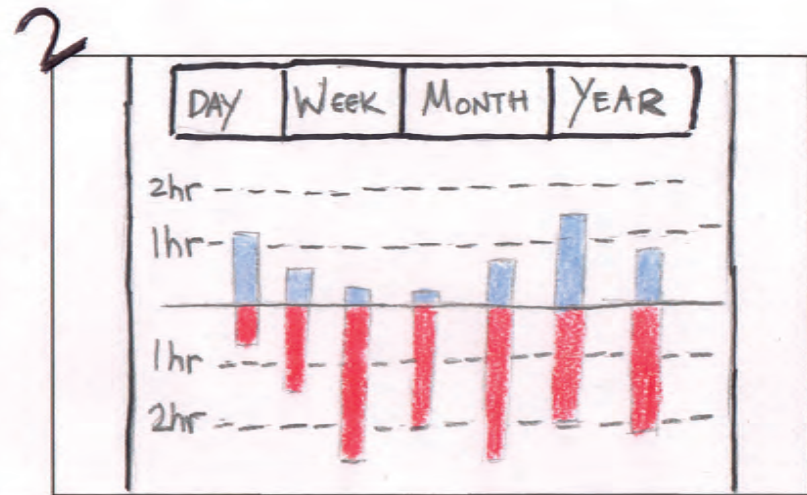


# Storyboards

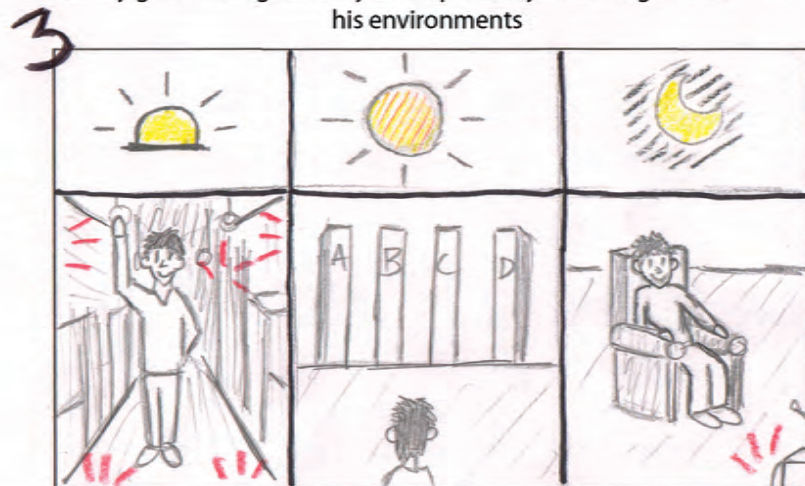
# Tracking Zen



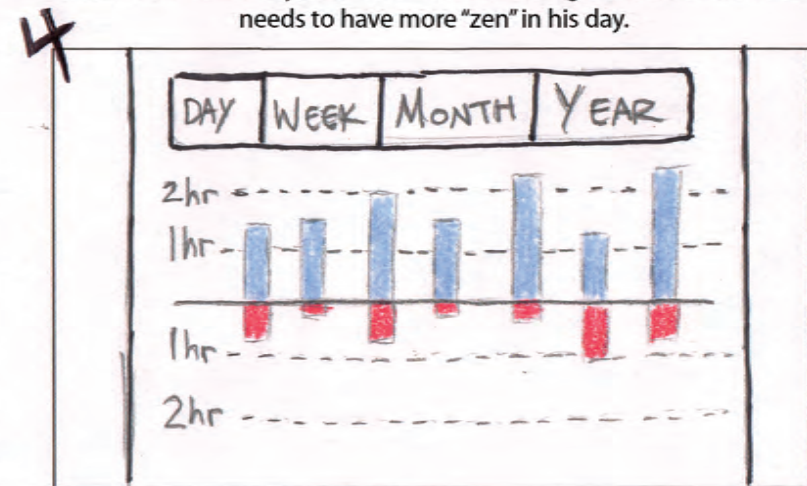
Jimmy goes through his day while passively recording the sound of his environments



At the end of the day, he checks the data he's gathered and sees he needs to have more "zen" in his day.

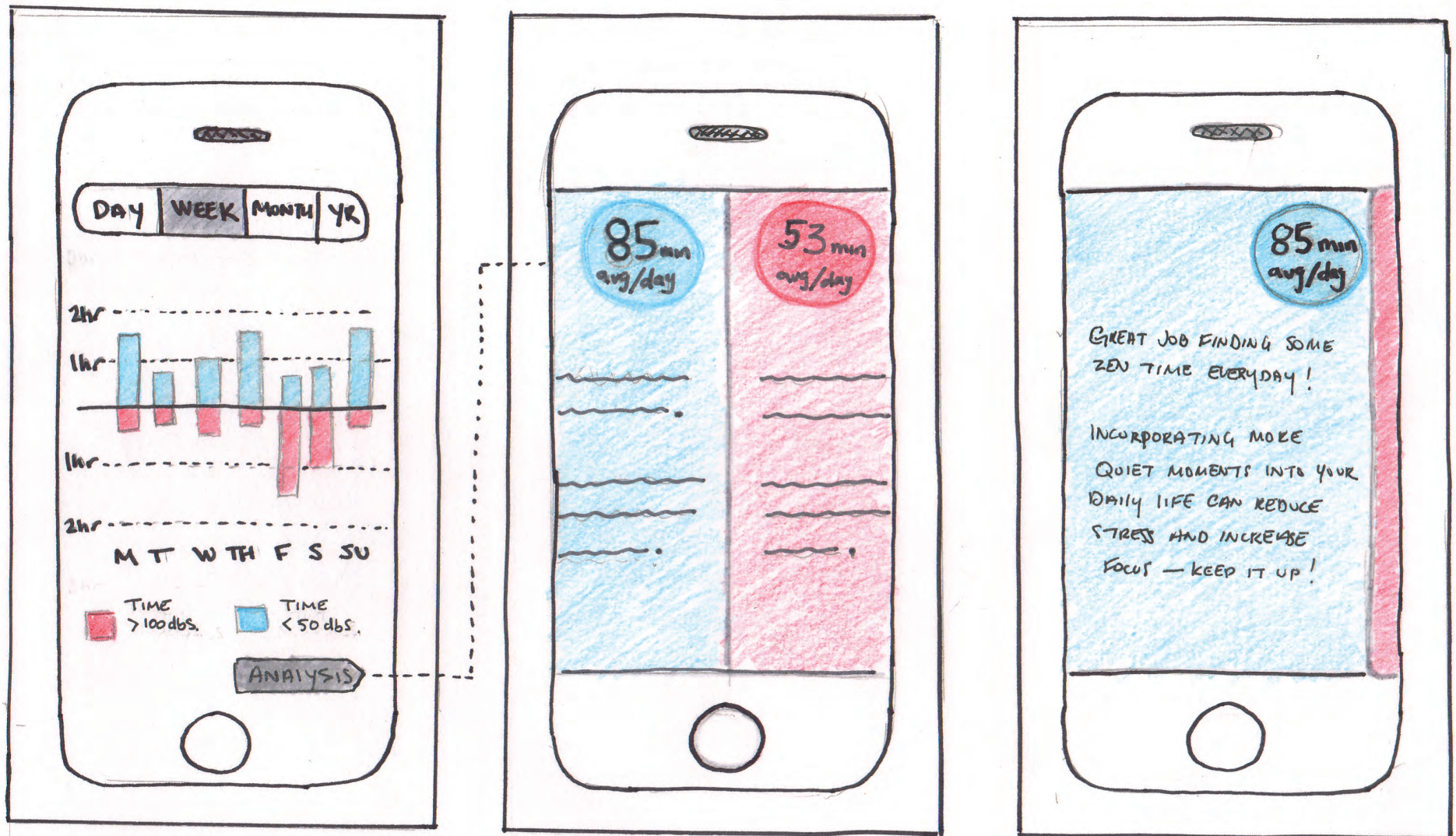


Jimmy makes some adjustments the next day in his routine to lessen the amount of noise he encounters.



He is happy to see that his efforts to reduce the noise in his environment have paid off!

# Exposure Analysis





**Questions?**