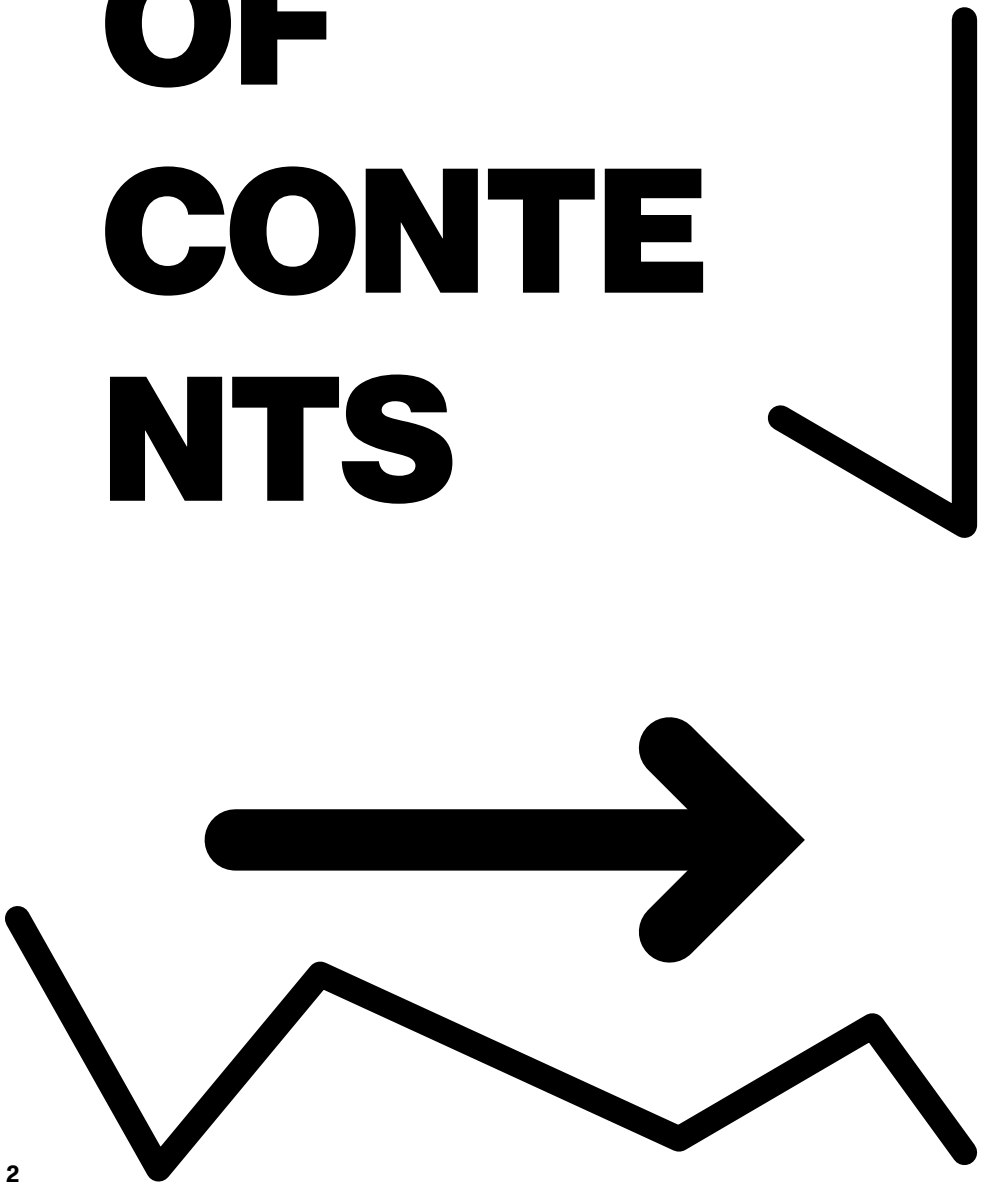
mood contagion

A THING BY
CODY TOTH

TAB-LE OF CONTE NTS



ABOUT

Mood contagion is the psychological phenomenon where emotions and attitudes spread from one person to another, much like a ripple effect.

A single smile can brighten an entire room, just as stress in a meeting can create tension among participants without a word being spoken.

This transfer of emotion occurs through facial expressions, tone of voice, body language, and even unconscious mimicry, with mirror neurons in the brain playing a crucial role in reflecting the emotions of others. Understanding how moods spread allows

individuals to be more intentional about the emotional atmosphere they create and absorb in different environments,. My goal here is to symbolize this mood.

CONTEXT

It is fascinating that we cannot see mood yet can deeply feel its presence — it reveals the invisible but powerful ways we are connected to one another. Unlike tangible objects, mood exists in a non-physical space — it is sensed rather than observed, absorbed rather than explicitly communicated. This highlights the subconscious nature of human perception, where we intuitively pick up on emotional cues through body language, vocal tone, and energy in a room. The fact that mood spreads without words or conscious effort suggests that human emotions function almost like an unseen frequency, subtly shaping interactions, decisions, and collective experiences. This intangibility also raises compelling questions about how we might one day visualize, measure, or even design environments that intentionally regulate mood contagion, much like we control temperature or lighting in physical spaces.

People have been affecting each other for as long as we have spoken. Is this a sociological phenomena that we have yet to account for within the concern of design space and design theory? I can imagine how this could interplay in architecture, how spaces could be designed around limiting the mood contagion or exemplifying it. In the process of exploring what mood contagion is, I started a series of artefacts — envisioning what I can design to allow these moods to be tangible.

1. TENSOR

Using TensorFlow to recognize mood was an important stepping stone because it helped us see how emotions spread in shared spaces. Since people naturally pick up on each other's feelings—whether at work, in public, or online — having an AI system that tracks mood patterns could give us a better understanding of these shifts. The goal was to explore whether technology could help people become more aware of the emotional atmosphere around them and how they might be influencing it. At the same time, it raised big questions about privacy and control. If companies or institutions used this kind of technology, they could track and even manipulate emotions for profit or influence. By including this in the project, we weren't just trying to visualize mood contagion — we also wanted to spark a discussion about how AI and emotional data are being used in today's world.

```
[fuckoff@fuckoffs-MacBook-Pro ~ % pip3 list
Package                 Version
----------------------- -----------
absl-py                 2.1.0
astunparse              1.6.3
attrs                   24.2.0
certifi                 2024.8.30
cffi                    1.17.1
charset-normalizer      3.4.0
contourpy               1.3.0
cycler                  0.12.1
flatbuffers             24.3.25
fonttools               4.54.1
gast                    0.6.0
google-pasta            0.2.0
grpcio                  1.67.1
h5py                    3.12.1
idna                    3.10
jax                     0.4.35
jaxlib                  0.4.35
keras                   3.6.0
kiwisolver              1.4.7
libclang                18.1.1
Markdown                3.7

PROBLEMS 1  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

Downloading ml_dtypes-0.5.0-cp313-cp313-macosx_10_13_universal2.whl (753 kB)
                                        753.3/753.3 kB 19.0 MB/s eta 0:00
Using cached namex-0.0.8-py3-none-any.whl (5.8 kB)
Downloading optree-0.13.0-cp313-cp313-macosx_11_0_arm64.whl (308 kB)
Using cached packaging-24.1-py3-none-any.whl (53 kB)
Using cached rich-13.9.4-py3-none-any.whl (242 kB)
```

To recognize mood using TensorFlow in Python, I used a a pre-trained deep learning model; in this case FER-2013. Running in python, as seen above, TensorFlow and Keras were used to load a model trained on an emotional data set. The script would take an image (video frame,) preprocess it (resize, normalize), and then pass it through the model to classify the emotion (happy, sad, neutral, annoyed at the forms sent by the university). For real-time analysis, OpenCV captured the frames from my webcam, and TensorFlow processed them continuously to detect the mood patterns.

```
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rich                    13.9.4
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soupsieve               2.6
sympy                   1.13.3
tensorboard             2.18.0
tensorboard-data-server 0.7.2
tensorflow              2.18.0
termcolor               2.5.0
tf_keras                2.18.0
torch                   2.2.2
torchvision             0.17.2
tqdm                    4.67.0
typing_extensions       4.12.2
tzdata                  2024.2
urllib3                 2.2.3
Werkzeug                3.1.2
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wrapt                   1.16.0
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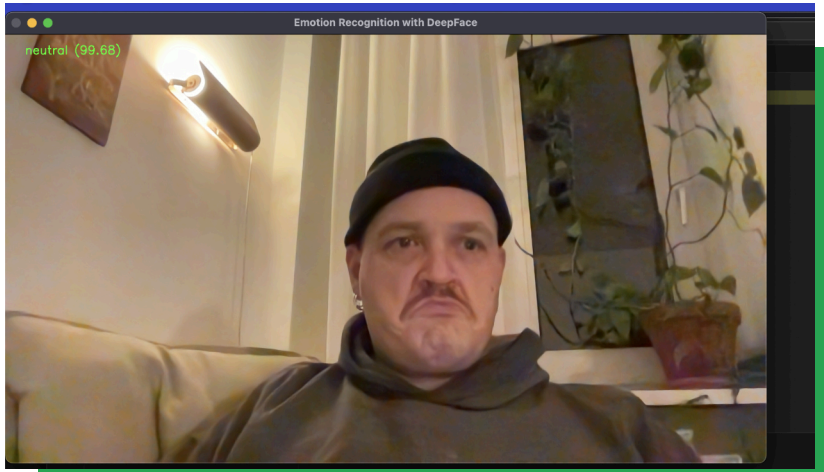


2. HAPTIC

Understanding and visualizing human emotion is a complex challenge, yet it holds the potential to deepen our awareness of collective moods in shared spaces. This project explores the use of AI and user input to create a dynamic "mood radar," encouraging self-reflection and mindfulness in everyday environments.

To visualize how mood forecasting might look in a real-world application, I created a wireframe mockup. The interface includes an interactive dashboard where users can input their emotional state, with a real-time "mood radar" displaying collective emotional trends over time.

SELECT ONE ~

APATHETIC

ANGRY

SAD

HAPPY

EXCITED

REMORSE

AVERAGE MOOD

YESTERDAY

+5/7 ------- good

TODAY

+0 -------- medium

TOMORROW

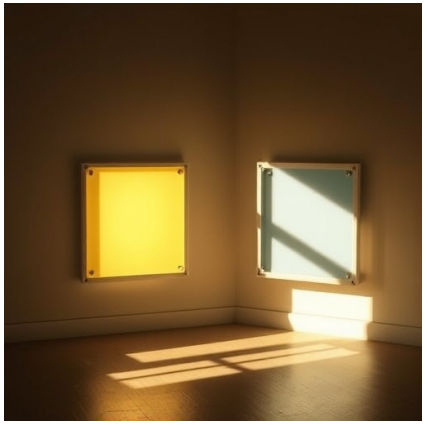
-12 -------- fucked

ciao

3. GEN'D

You guessed it, this idea was generated with the help of AI. The modern confession chamber serves as a conceptual space that actualizes the profound dynamics of sharing and catharsis. Rather than existing as a mere functional artifact designed for direct interaction, it manifests as an installation piece where significance emerges not from its utility, but from the thematic and philosophical discourse it evokes. Its true essence lies in its ability to provoke introspection, challenge conventional boundaries of disclosure, and embody the transformative power of unburdening the self within a constructed environment.

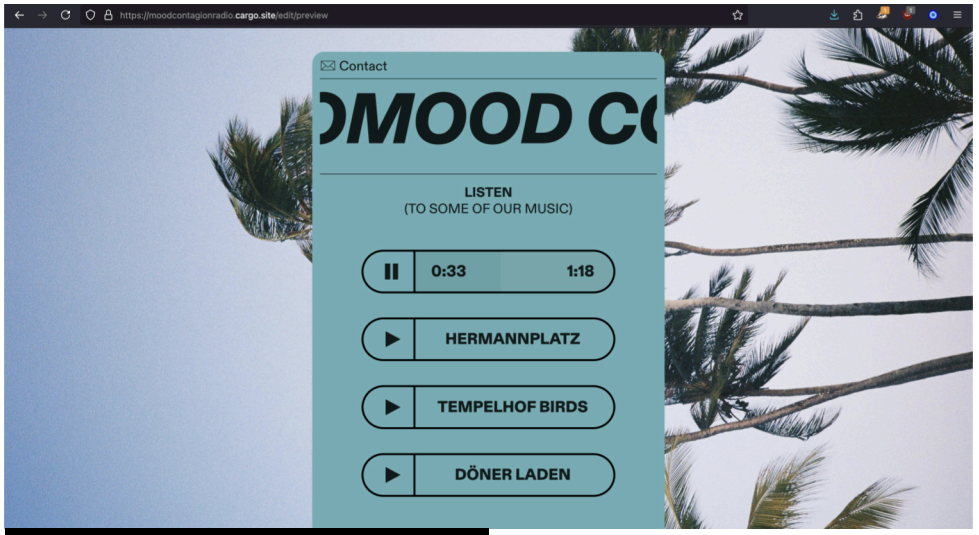
A modern confession booth can realize mood contagion by facilitating an immersive emotional exchange between participants, allowing their moods to influence and synchronize with one another. Mood contagion occurs when individuals unconsciously mimic and absorb the emotions of those around them, a process driven by verbal cues, facial expressions, and tone of voice. In a new age setup, where each participant is possibly both confessing and listening, emotions such as guilt, relief, anxiety, or even joy can spread dynamically among them. As one person expresses their feelings, the intensity of their emotions — whether through a trembling voice, deep sighs, or even silence — can resonate with the others, leading to a shared emotional experience. If one participant expresses vulnerability or distress, the others may unconsciously mirror these feelings, deepening the collective emotional atmosphere. Alternatively, if a confession leads to catharsis or laughter, a shift in mood can occur, uplifting the group and demonstrating the contagious nature of emotional states.



The closed and intimate nature of something like a multi-way confession chamber further amplifies this effect, as there are no external distractions to dilute the emotional exchange. Through this dynamic, a multi-way confession booth becomes more than just a space for individual confessions—it transforms into an emotional ecosystem where moods are transferred, shared, and intensified through interpersonal interaction.

RADIO

RADIO MOOD CONTAGION is an online radio, with mood correct music made from everyday sounds - 24/7, forever. Think of this like a robot DJ that listens to sounds, turns them into dreamy music, and streams them online so anyone can hear.



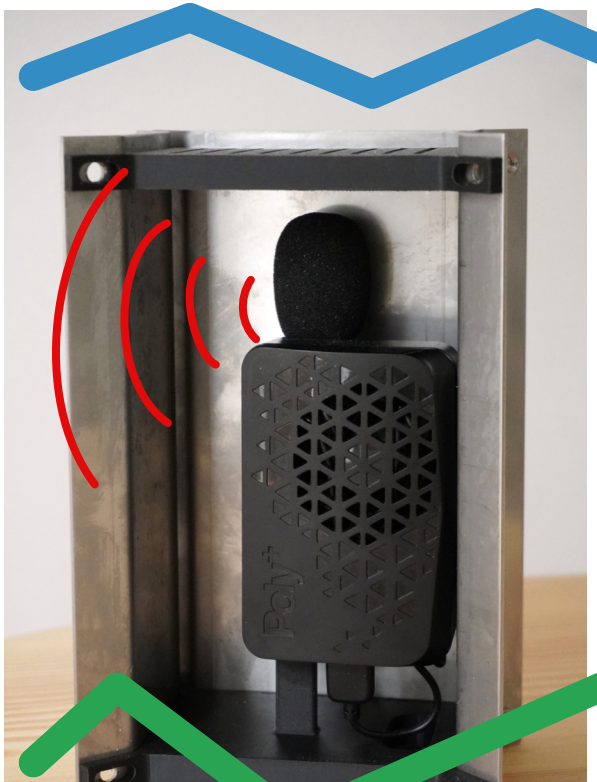
Sound influences mood in a space by shaping perception, emotional response, and physiological state. A room with long reverberation and echo, like a cathedral, can evoke awe or introspection, while a dry, acoustically dampened space may feel intimate or isolating. High-pitched, sharp sounds can create tension or alertness, whereas low, warm frequencies tend to feel calming and grounding. Continuous noise, such as background chatter or mechanical hums, can lead to stress or distraction, whereas controlled ambient sound — like soft music or nature sounds — can enhance relaxation and focus.

We however do not have the ability to change all spaces, especially public ones where our body is legally or physically unable to meet the criterion for rendering a space more comfortable, or meeting our needs. We can however adapt, or at least be aware of such phenomenon, and in my case I will be changing ordinary sounds into a live-stream of the collective mood.

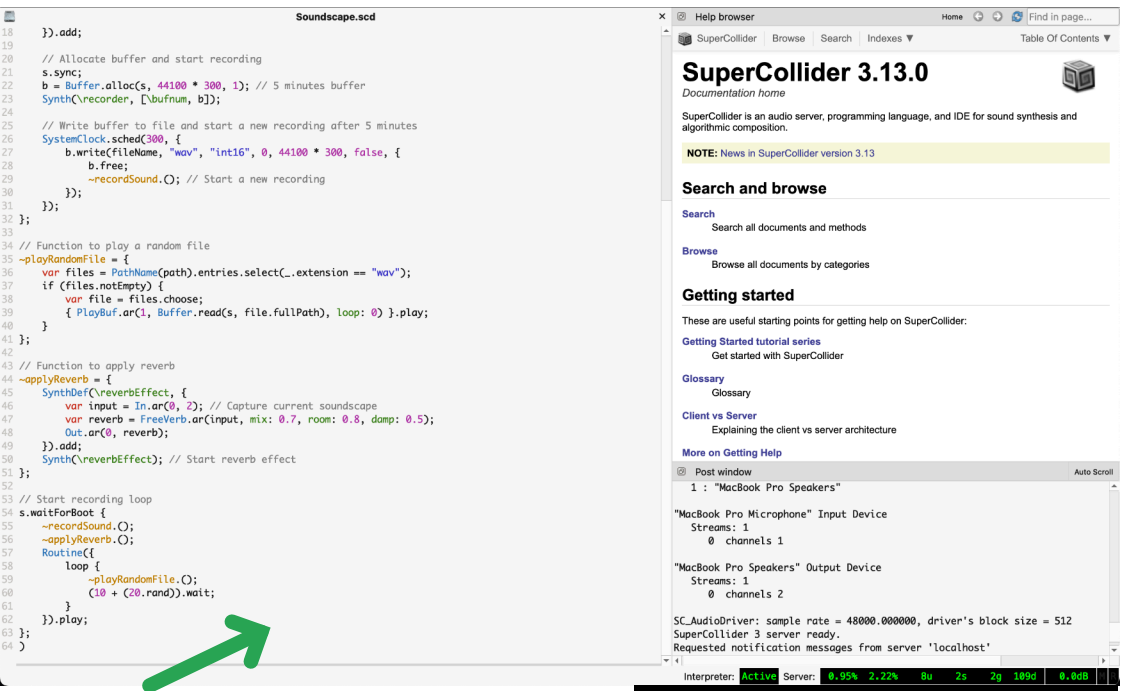
How does it work?

Auralizing sound from a public space into music involves capturing environmental noises and transforming them into structured, harmonic compositions. This is achieved through real-time processing using using a microphone that collects the ambient sounds such as footsteps, voices, wind, or traffic.

These raw sounds can then be analyzed for their frequency, rhythm, and intensity, and mapped onto musical scales using digital signal processing algorithms to then sort the sounds. The sounds that are recorded are collected every 45 seconds, and saved. These files are called one at a time, up to 9 files which are layered with time delays to create an orchestra of sounds. One in, on out, with the most recent files being played from the buffer.



How does it music?



SuperCollider is a powerful programming language for real-time audio synthesis and algorithmic composition. It lets you create and manipulate sounds using SynthDefs (sound blueprints) and patterns to generate evolving, dynamic music.

By applying techniques such as pitch shifting, time stretching, and harmonic filtering, everyday noise can be restructured into melodies, chords, or rhythmic patterns. Additionally, this generative music systems can interpret changes in sound density and amplitude to create dynamic compositions that shift in response to the space's activity. This process not only reveals the hidden musicality of public spaces but also enhances the emotional and sensory experience of those within it, fostering a deeper awareness of how sound interacts with architecture, movement, and social behavior.

The music created above is then sent online to be streamed as a radio station with the help of Icecast 2 running on Raspberry Pi. The goal of this artefact is to see the ever evolving soundscape of the world around us, and how reality effects our mood.

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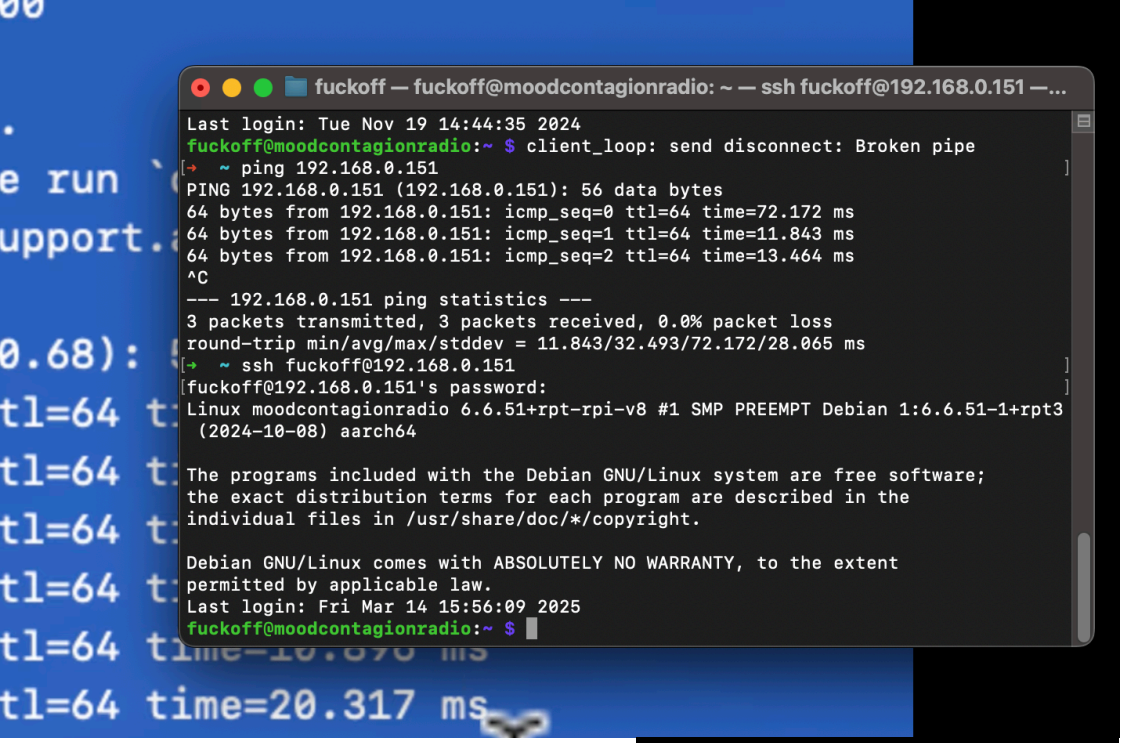
ARDUINO TURNS EVERYTHING ON

SUPERCOLLIDER LISTENS TO YOU

ICECAST CASTS THE MUSIC ONLINE



How does this relate to the common mood?

RPi

The installation process for this was a bit tedious, as you have to configuere quite a bit — it involved setting up a raspberry pi with Linux, then installing SuperCollider via apt, setting up synth definitions, and configuring it to react to microphone input or generate evolving textures. Next, I installed Icecast, which acts as a streaming server, broadcasting the SuperCollider audio as an online radio station. I also needed to use DarkIce, a lightweight tool that captures the SuperCollider output and streams it to Icecast. Once configured, Icecast provides a streaming URL that can be embedded into a website, allowing anyone to tune in. The system runs autonomously, creating a continuous, evolving audio experience that reflects the environment it's placed in. Linux was set up to launch all these programs at startup with a cron job (Command Run on Notice) and as long as it has an internet connection, theoretically it can be set up to monitor sounds anywhere.***

***Probably limited heavily by WIFI and power.

The visualization of the common mood is brought together by the soundscapes created in the place that this artifact inhabits. The generative music serves as a reflection of the environment, capturing its energy, rhythm, and subtle shifts over time. As the sounds evolve in response to the space, they become an auditory representation of the collective atmosphere, offering an immersive way to experience and interpret a location beyond just its visual and physical elements.

This musical interaction allows us to reflect not only on the state of the physical space we embody but also on the choices we make about where we spend our time. Every location has its own sonic identity, shaped by its acoustics, ambient noise, and human presence. By tuning into these evolving compositions, we become more aware of how our environments influence us—both emotionally and mentally. In this way, the artifact transforms passive listening into an act of mindfulness, deepening our connection to the spaces we inhabit and the moods they evoke.

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