

---



# Hydroto

Mechatronics

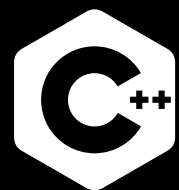
An interactive installation that plays the in-built kalimba, hand drum, and triangle by raindrops and water, producing harmonic musical experiences.

---

## GROUP WORK

### My contribution:

Interaction Design,  
Structural design,  
3-D printing, coding



Electrical



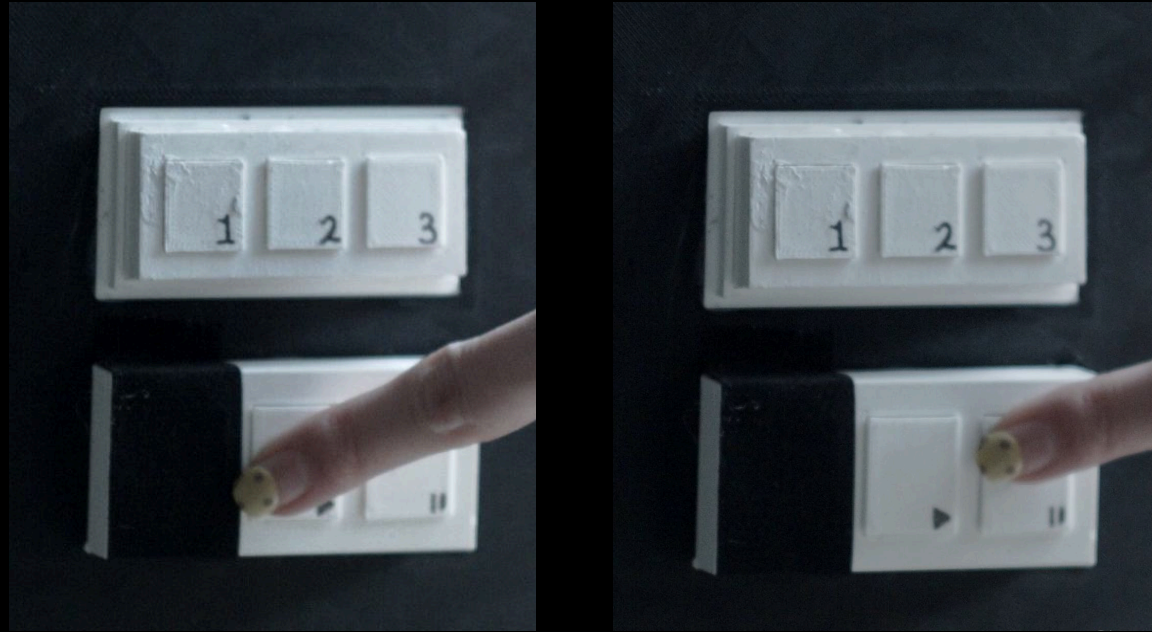
Mechanical





# The Experience

## Turn it on



Press the start button to start the music. Press the stop button to stop the music.

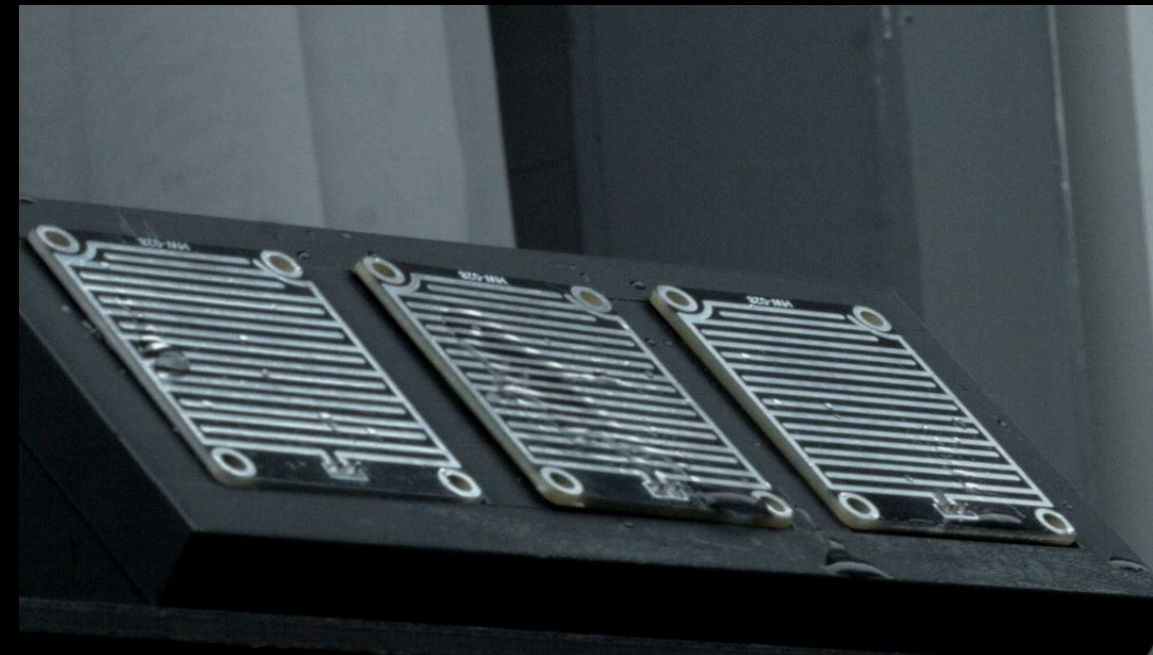


The music will play at very slow speed at the very start because the sensor boards are untouched.

## Play with Hand & Rain

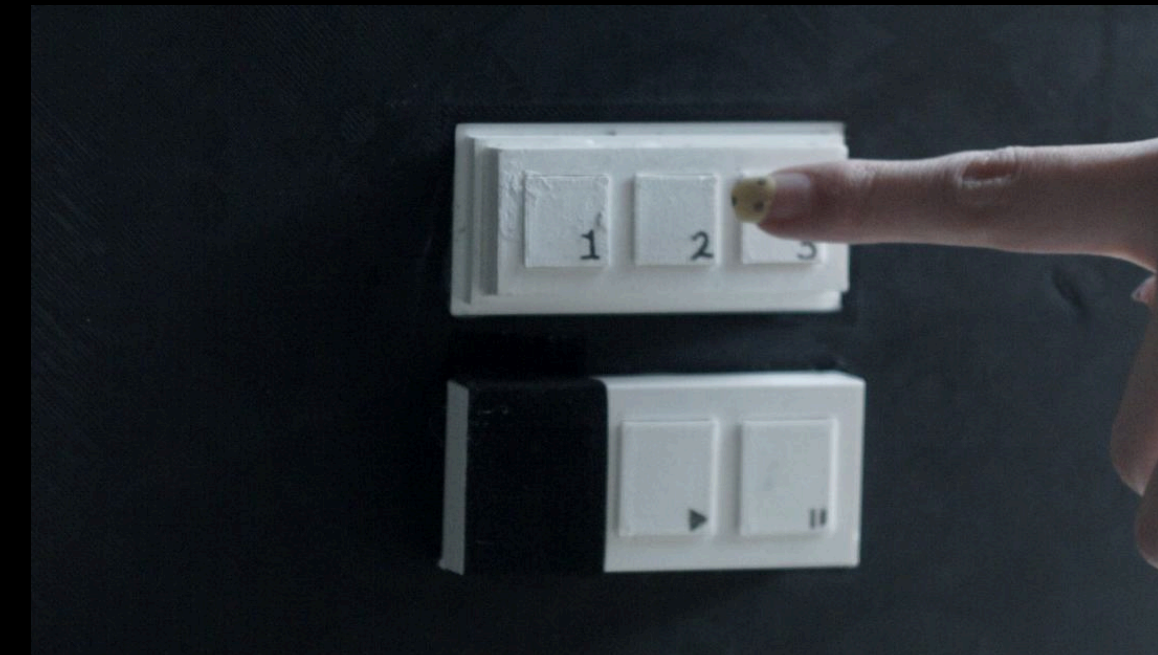


Use you hands to explore the rhythm and notes, enjoy the music generated under your touch.



Following the rhythm of rainfall, the music will speed up when the rainfall becomes heavier. and slow down when rainfall dissapears.

## Explore Variety



Explore different combination and chords by pressing the 1,2,3 buttons.



The notes of kalimba and hand drum change, creating variety of music, accompanied by the change of rhythm of music: single notes, duplets, triplets, or a slight “Ding” of the triangle.

## Enjoy



Enjoy the calming and smoothing experience to relieve your stress and accompany by the sound of nature at your workplace, in your bedroom, wherever you like.



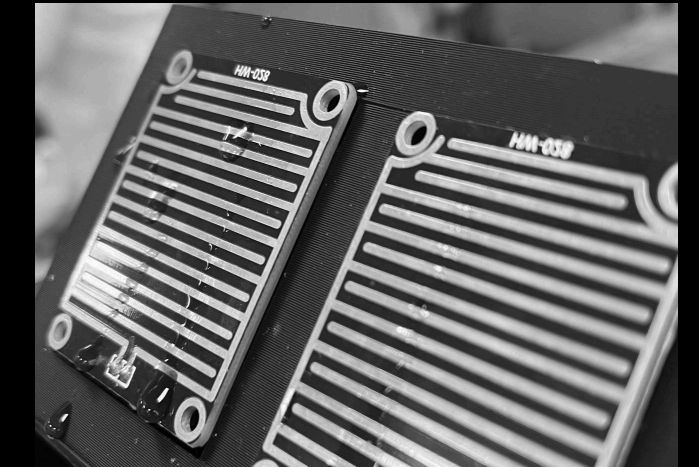
# How does it work?

The combination of Kalimba, hand drum, and triangle emphasizes soothing and peaceful sounds. Servo and DC motors allows delicate control of the note played.

And the sensors and buttons allow users to interact and play music with the natural rhythms.

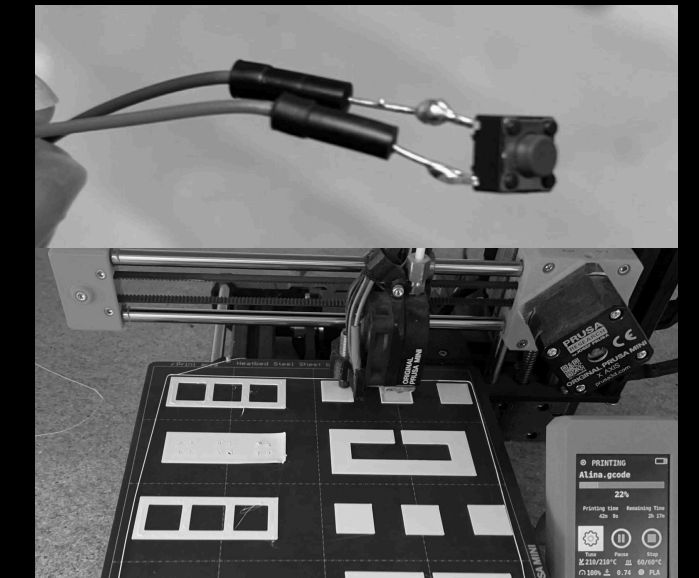
## Sensing

The pattern of raindrop on the three sensors direct the note, and speed determines the tempo.



## Controlling

Different chord selection produce music with different emotions and atmospheres.



## Playing

Notes selected by spinning of servo motor, and hit by DC motor.

