

TERM 1

Unpacking Tech Systems

Machine Paradox: The Moody Elevator

Students/

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the **TOO HUMaN?** machine

We always expect machines to serve us, no matter the circumstances, the timing or the conditions. Have we ever wondered if they have feelings? Have we ever questioned their necessity to always deliver the work no matter what?

HUMaNIZING? the machine

what if the machine has free will?

What if the machine has **FEELINGS**?

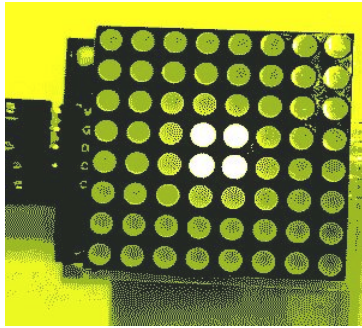
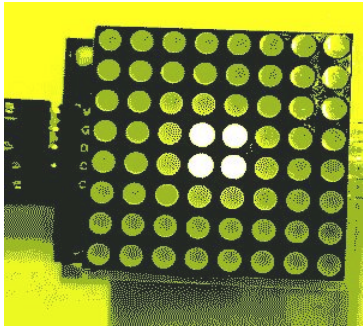
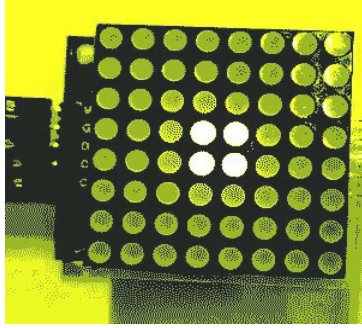
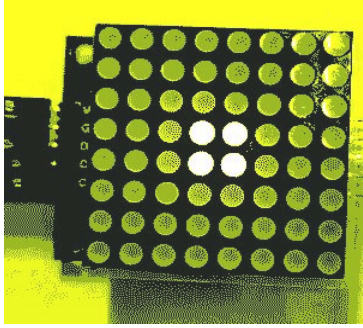
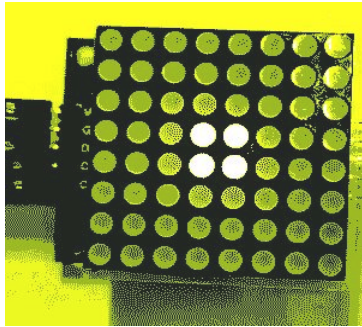
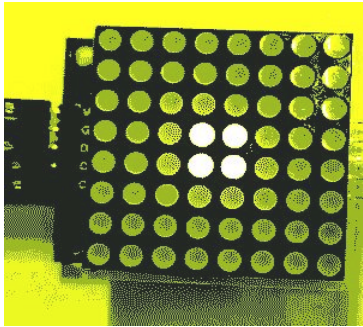
we never care about how
the machine feels...

the **MOODY** elevator

gets mad, gets
hyperactive,
cries, gets tired,
feels like dancing,
has bad days...

What if its feelings
would influence
the way it perform
its function?

MOODY
Free will !!!



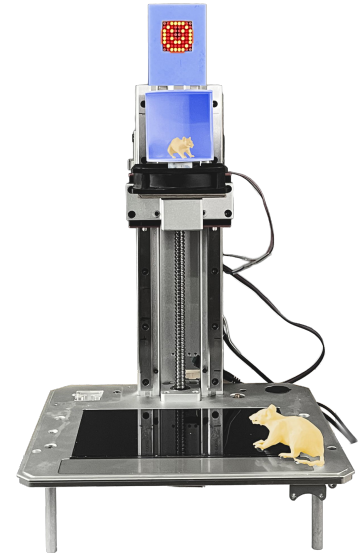
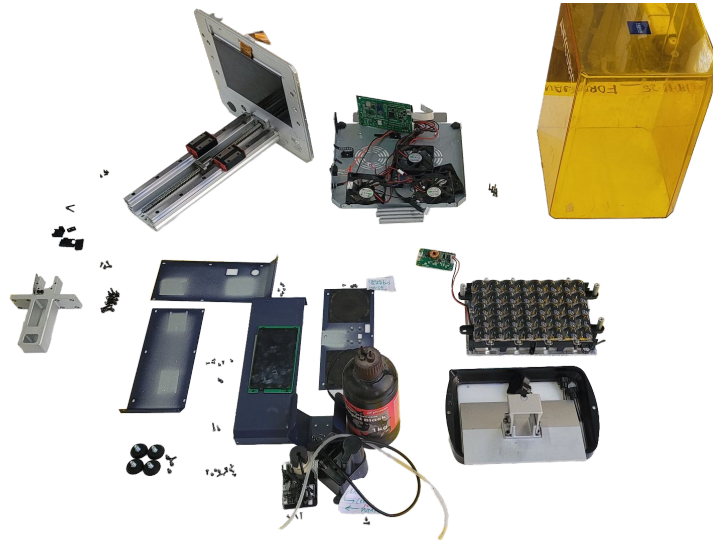
the MOODY elevator

An emotional machine that lived the highs and lows of being owned by IAAC.

you get **BORN** :) you **WORK** :o you **TRANSFORM**



*An emotional machine lived the highs and lows of being owned by **IAAC**.*



Iaac



ANYCUBIC

CASING OUTSIDE

BASE PLATE

BASE PLATE

Z-AXIS

THIS GOES WITH

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

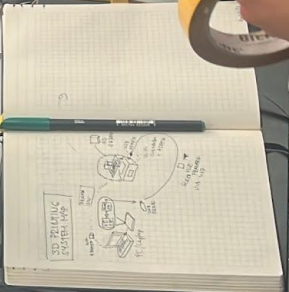
BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE





ANYCUBIC

RESIN 50

CASING

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

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BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

BASE PLATE

Z-AXIS
THIS GOES WITH
BASE PLATE

GOES UNDER



The Baseline



The Baseline



1 Area

- 11 Base Area
 - a Data input
 - 21 Control panel
 - 31 Power supply
 - 1 Resin vat
- 12 Screen & Resin Area
 - d Light source
 - e Exposure screen
 - f Screen protector
 - g Exposure screen
 - h Camera sensor
- 13 Build Plate & Z-axis & Top Cover
 - i Smart resin filling
 - k Z-axis
 - 1 Removable top cover

2 Typology

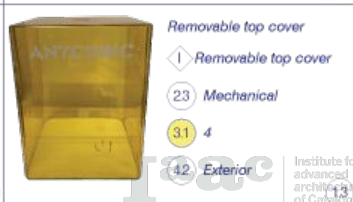
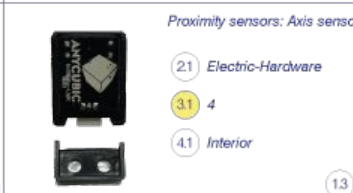
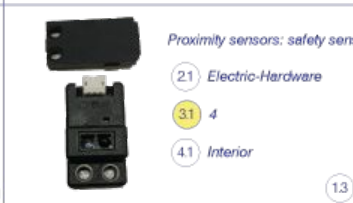
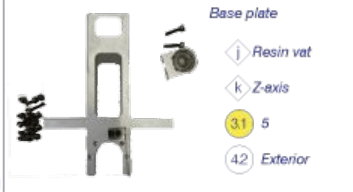
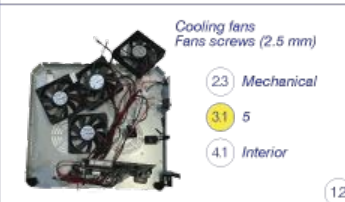
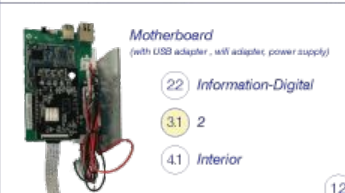
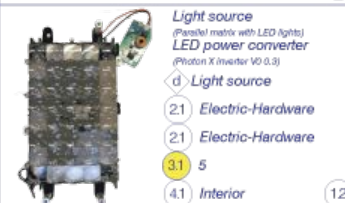
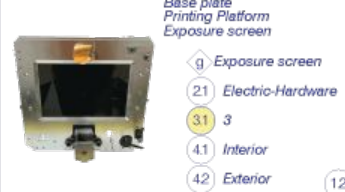
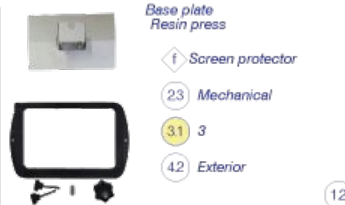
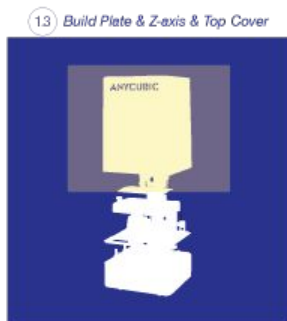
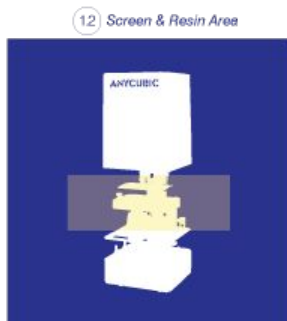
- 21 Electric-Hardware
- 22 Information-Digital
- 23 Mechanical

3 Reusability

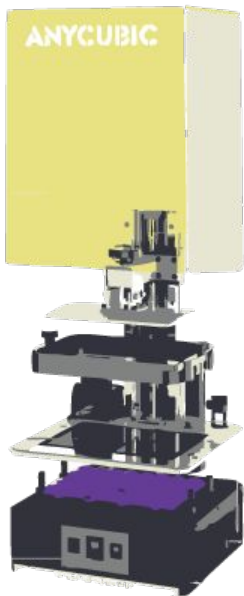
- 31 1-6 & Notes

4 Location

- 41 Interior
- 42 Exterior



The Baseline



1 Area

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2 Typology

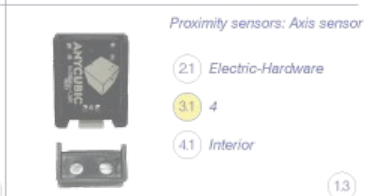
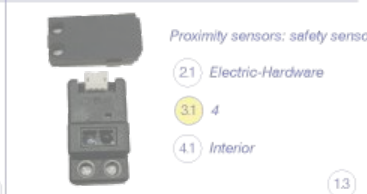
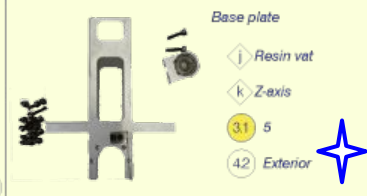
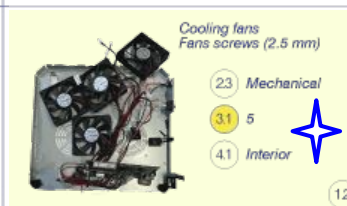
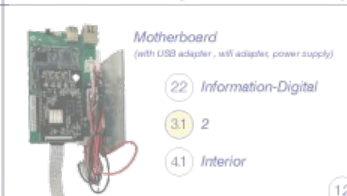
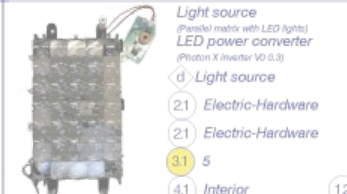
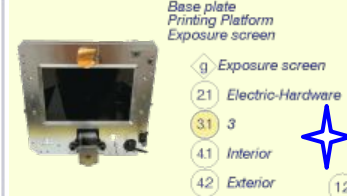
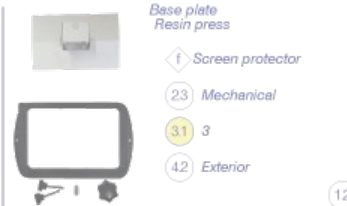
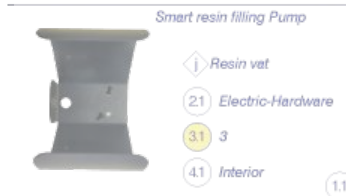
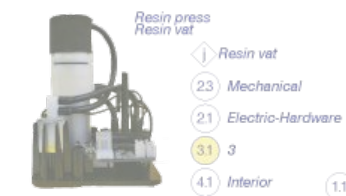
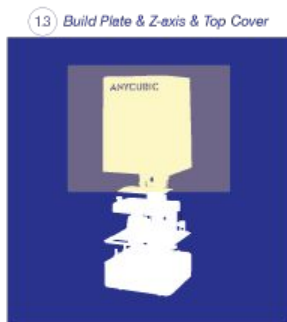
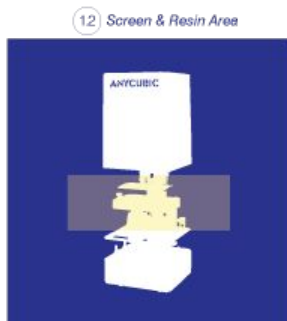
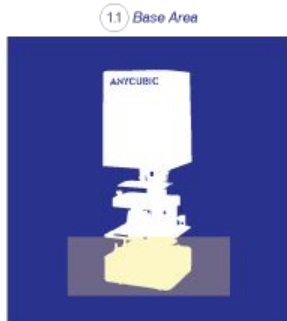
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3 Reusability

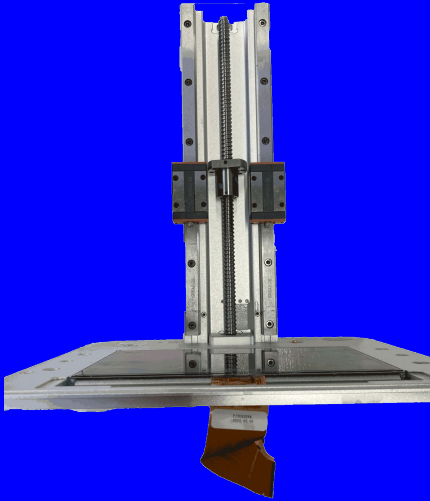
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Components



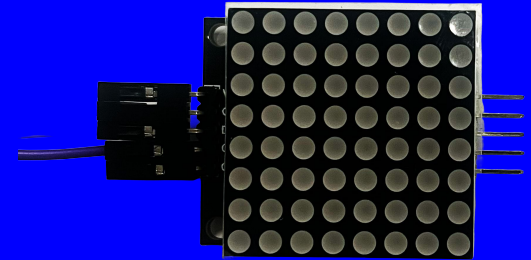
Z-axis rail

Responsible for the up-and-down movement of our elevator box.



Cooling fans

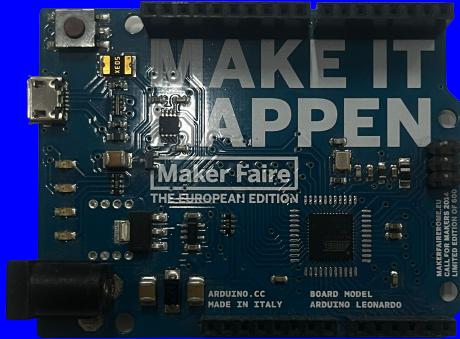
Responsible for a clockwise rotation of our elevator box-



LED light

Expressing emotions and state-of-mind of the machine

Components



Control panel

Responsible for channel in commands and power circuit.



3D printed box

Serves as an elevator box turning around.



3D printed rat

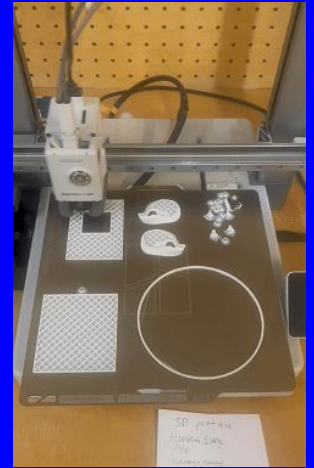
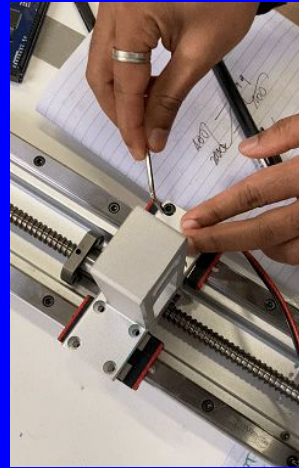
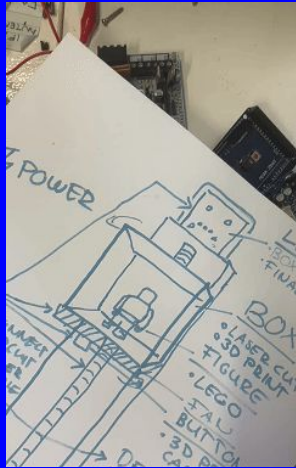
Serves as a test subject

Concepting

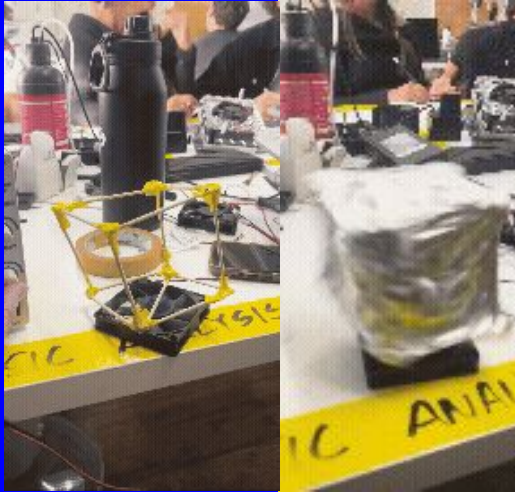
Production

Test

Finalize

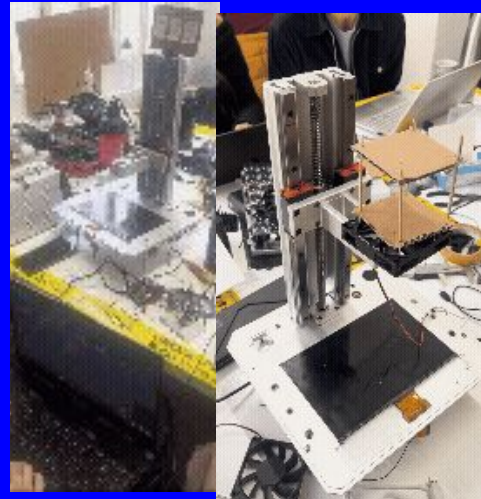


Prototypes



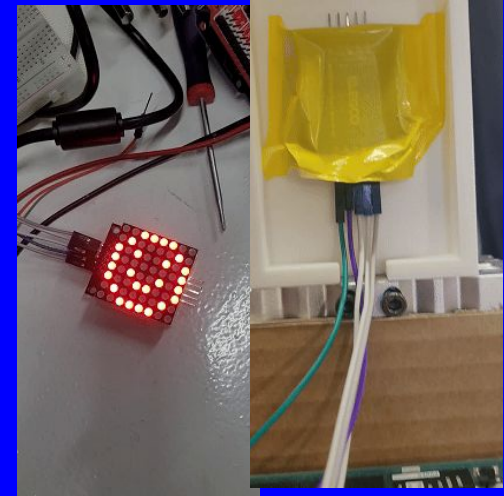
Elevator Box
Testing for spinning fan

We had to test how much weight the fan can move, also the size of the elevator box needs to be proportional so have a range of visible movement in the z-axis rail. This informed the design of the 3D printed elevator



Z-axis rail
Testing for movement

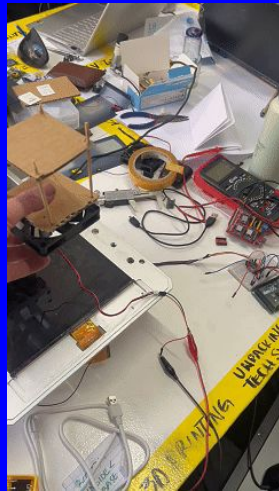
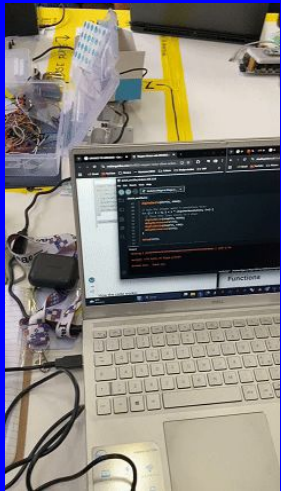
We tested the direction of movement for specific states of emotion. We programmed happy= up, sad=down, angry=up + down and party= spinning. We added a final button to control the change of emotion.



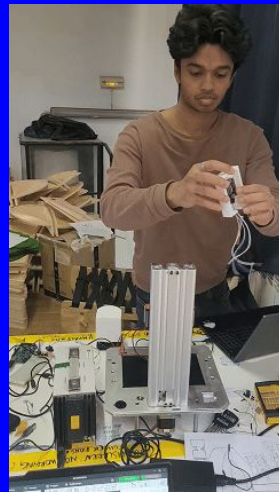
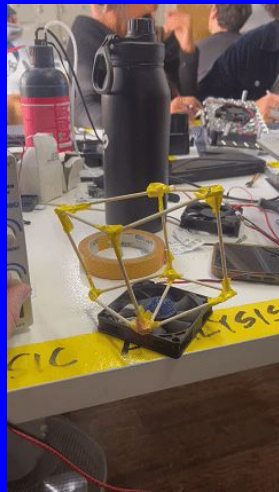
Emotion display
Testing for shifting emotional states

We tested two screens OLED and LED module and chose the latter for its aesthetics. Next, we tested 4 emoticons in the 8x8 LED module. It was a challenge to get the emotions with the constraints of 8 pixels. Later we tested a buzzer to show melodies (beeps) that match the emotions.

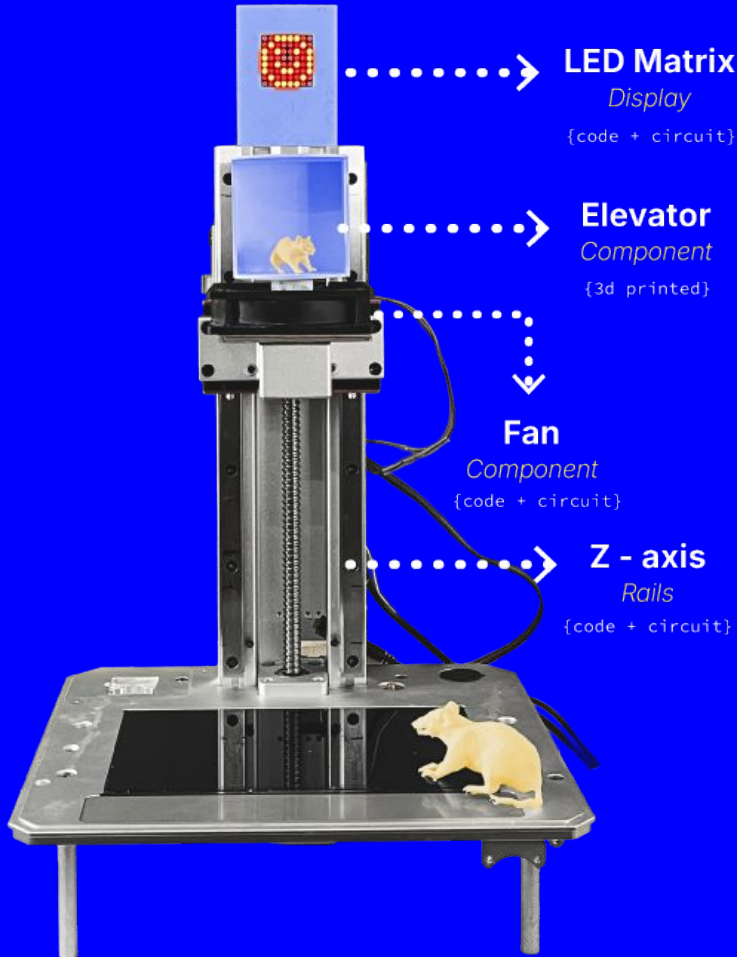
not failing just
LEARNING!!!



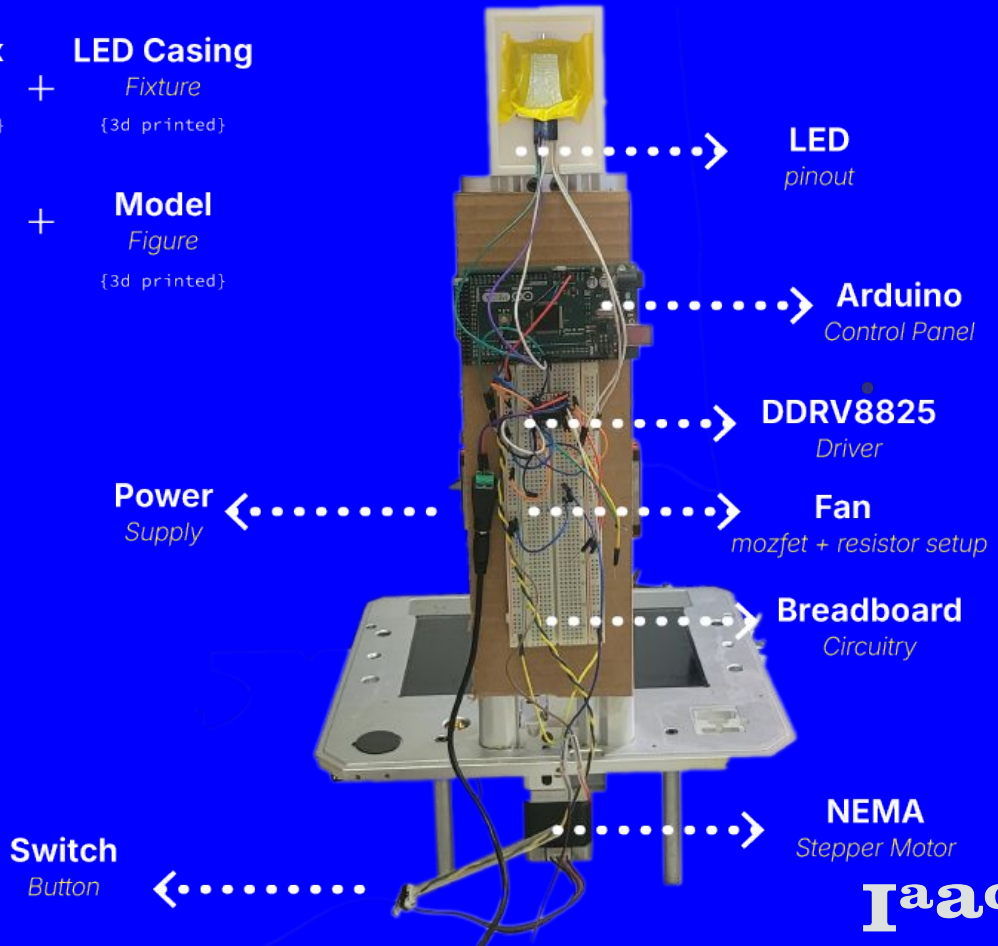
```
sketch_nov20a.ino
1 //our main code // ----- Pin Setup -----
2 const int stepPin = 9;
3 const int dirPin = 8;
4
5 // ----- Motion Parameters -----
6 // Motor: 1.8" stepper = 200 steps/rev
7 float stepsPerRev = 200;
8
9 // Your leadscrew pitch:
10 float leadScrewPitch = 4; // ← YOU SAID 2 mm per revolution
11
12 // Microstepping: 1 = full step, 2 = half, 4 = 1/4, 8 = 1/8, 16 = 1/16, etc.
13 int microsteps = 1; // adjust based on your DRV8825 M0/M1/M2 pins
14
15
16 void setup() {
17   pinMode(stepPin, OUTPUT);
18   pinMode(dirPin, OUTPUT);
19
20
21
22   Serial.begin(19200);
23   Serial.println("Enter Z distance in mm (positive = up, negative = down):");
24 }
25
26 void loop() {
27   if (Serial.available()) {
28     float distanceMM = Serial.parseFloat();
29
30     // Steps per mm calculation (for 2mm pitch)
31     float stepsPerMM = (stepsPerRev * microsteps) / leadScrewPitch;
32
33     long totalSteps = abs(distanceMM * stepsPerMM);
34 }
```

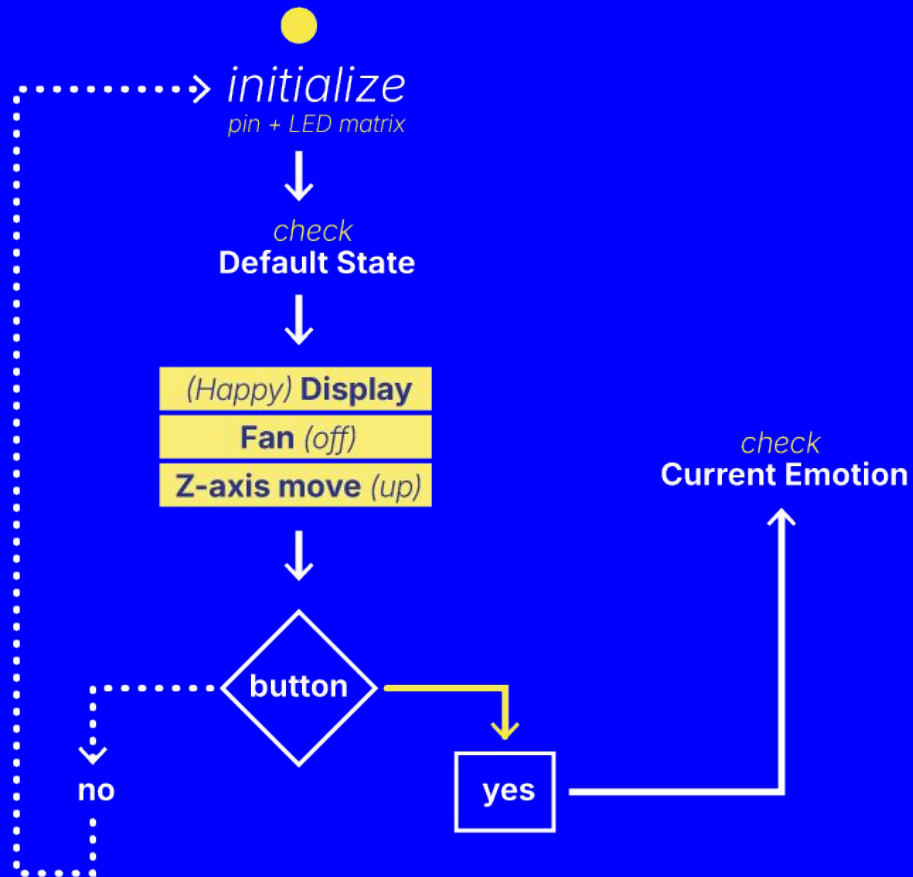


Front View (up)



Back View (up)





(H) Happy



change S

(off) Fan

(S) Display

(d) Z-axis move

(S) Sad



change A

(off) Fan

(A) Display

(u&d) Z-axis move

(A) Angry



change P

(on) Fan

(P) Display

(NO) Z-axis move

(P) Party

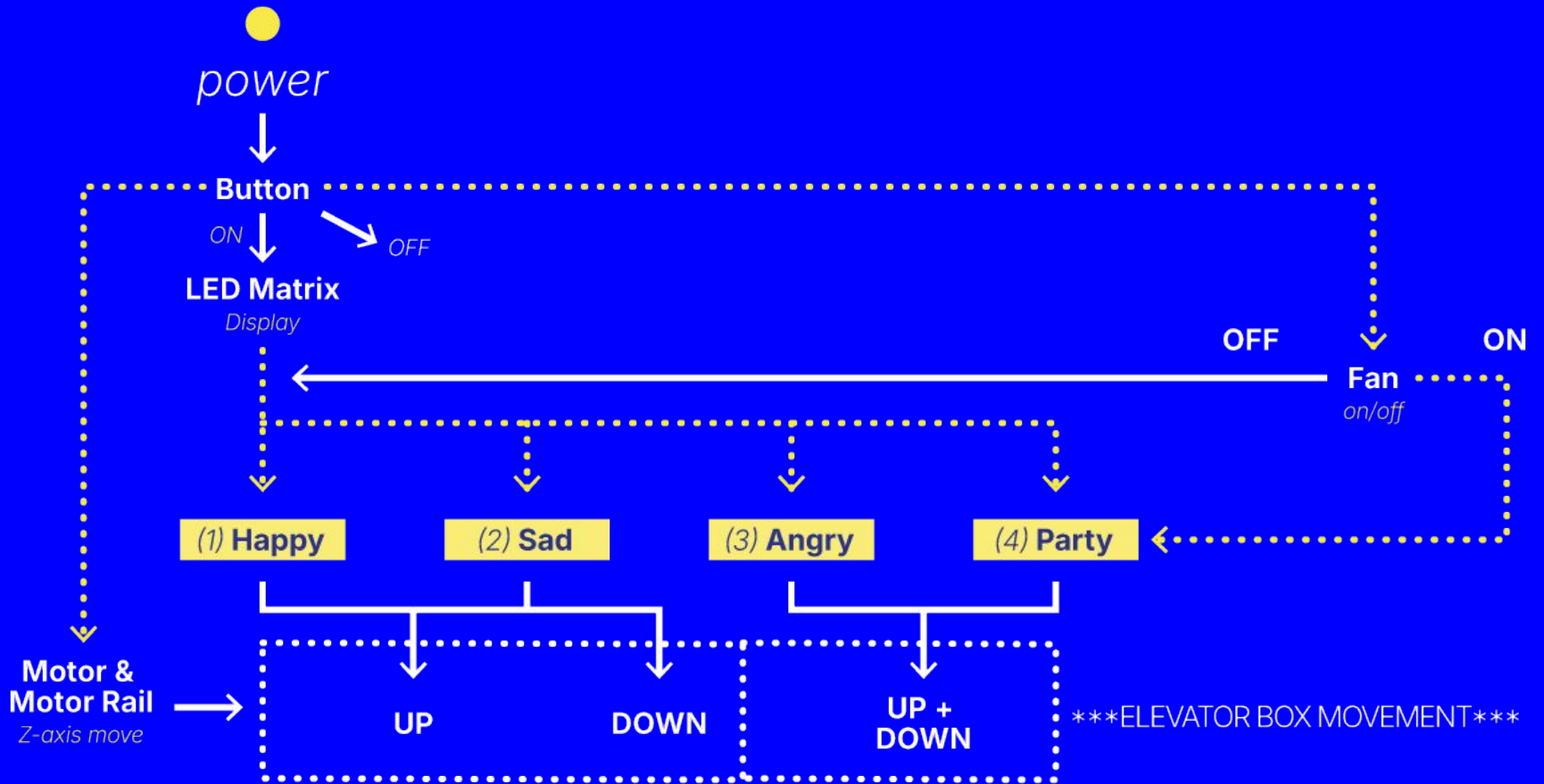


change H

(off) Fan

(H) Display

(u) Z-axis move





ANYCUBIC

laac



Armin

Ale

Mel

Rishi

Swarna

Iaac



THANKS!

