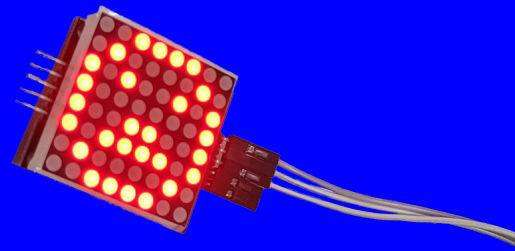

the TOO HUMaN? machine

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?

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HUMaNIZING? the machine

What if the machine has **FEELINGS**?

what if the machine has free will?

we never care about how the machine feels...

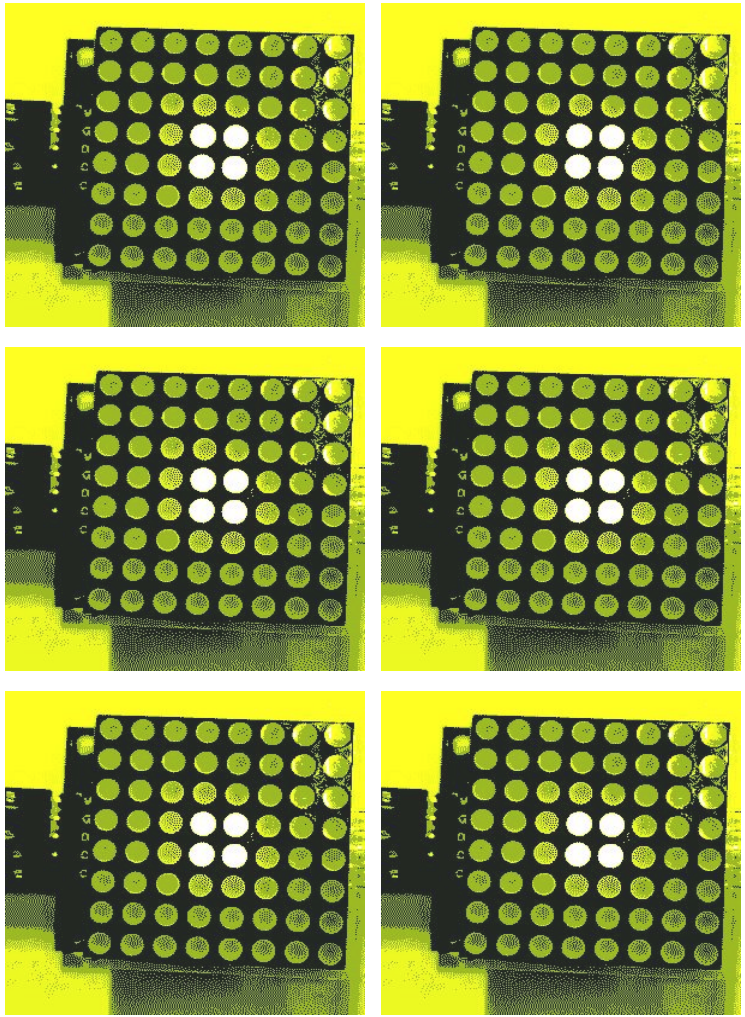
the *MOODY* elevator

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

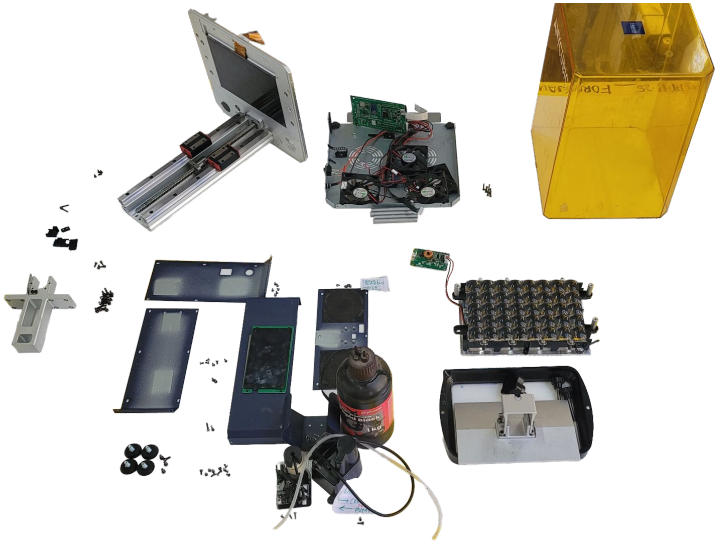
An emotional machine that lived the highs and lows of being owned by IAAC.

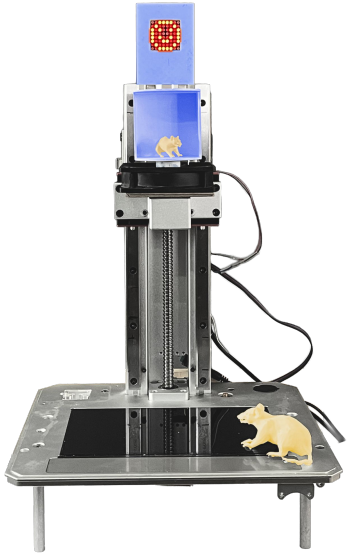
IAAC

you get BORN :) you WORK :o you TRANSFORM

-._____.-

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





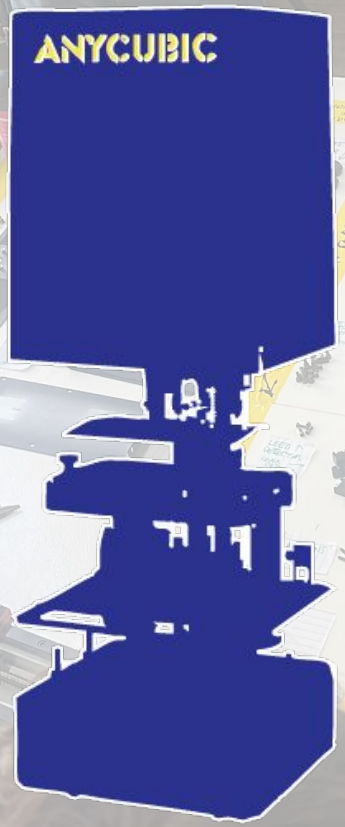
IAAC


ANYCUBIC
CASING
OUTSIDE
BASE PLATE
Z-AXIS
GOES UNDER

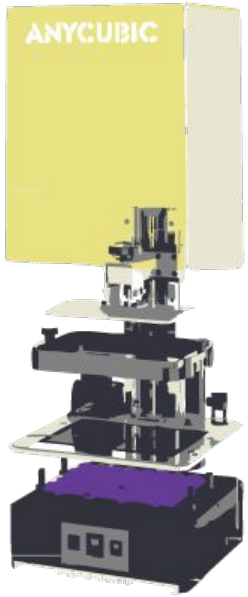

ANYCUBIC
CASING
BASE PLATE
Z-AXIS


ANYCUBIC
BASE PLATE
Z-AXIS

The Baseline



The Baseline



1 Area
- 1.1 Base Area
  - a Data input
  - b Control panel
  - c Power supply
  - j Resin vat
- 1.2 Screen & Resin Area
  - d Light source
  - e Exposure screen
  - f Screen protector
  - g Exposure screen
  - h Camera *optional*
- 1.3 Build Plate & Z-axis & Top Cover
  - i Smart resin filling
  - k Z-axis
  - l Removable top cover

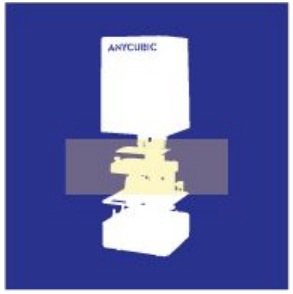
2 Typology
- 2.1 Electric-Hardware
- 2.2 Information-Digital
- 2.3 Mechanical

3 Reusability
- 3.1 1-5 & Notes

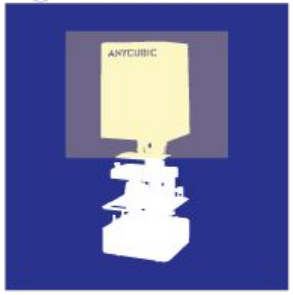
4 Location
- 4.1 Interior
- 4.2 Exterior

1.1 Base Area

1.2 Screen & Resin Area



1.3 Build Plate & Z-axis & Top Cover



LCD screen *(touch control)*
- a Data input
- 2.1 Electric-Hardware
- 3.1 1
- 4.2 Exterior

1.1

Base plate
Resin press
- f Screen protector
- 2.3 Mechanical
- 3.1 3
- 4.2 Exterior

1.2

Z-axis plate handle
Z axis dual guard rails
- i Smart resin filling
- k Z-axis
- 2.3 Mechanical
- 3.1 4
- 4.3 Mechanical

1.3

Resin press
Resin vat
- j Resin vat
- 2.3 Mechanical
- 2.1 Electric-Hardware
- 3.1 3
- 4.1 Interior

1.1

Base plate
Printing Platform
Exposure screen
- g Exposure screen
- 2.1 Electric-Hardware
- 3.1 3
- 4.1 Interior
- 4.2 Exterior

1.2

Base plate
- j Resin vat
- k Z-axis
- 3.1 5
- 4.2 Exterior

Resin Bottle *(attached to the pump)*
- j Resin vat
- 3.1 2
- 4.1 Interior

1.1

Light source
(Parallel matrix with LED lights)
LED power converter
(Photon X inverter V0 0.3)
- d Light source
- 2.1 Electric-Hardware
- 2.1 Electric-Hardware
- 3.1 5
- 4.1 Interior

1.2

Proximity sensors: safety sensor
- 2.1 Electric-Hardware
- 3.1 4
- 4.1 Interior

1.3

Smart resin filling Pump
- j Resin vat
- 2.1 Electric-Hardware
- 3.1 3
- 4.1 Interior

1.1

Motherboard
(with USB adapter , wifi adapter, power supply)
- 2.2 Information-Digital
- 3.1 2
- 4.1 Interior

1.2

Proximity sensors: Axis sensor
- 2.1 Electric-Hardware
- 3.1 4
- 4.1 Interior

1.3

Casing(s)
- c Power supply
- 2.3 Mechanical
- 3.1 3
- c Power supply

1.1

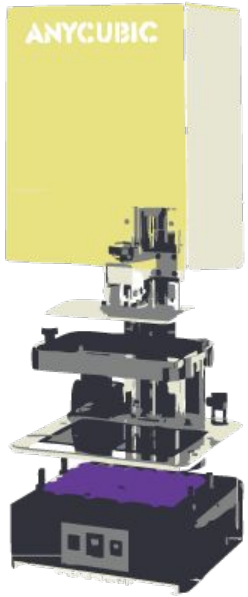
Cooling fans
Fans screws (2.5 mm)
- 2.3 Mechanical
- 3.1 5
- 4.1 Interior

1.2

Removable top cover
- l Removable top cover
- 2.3 Mechanical
- 3.1 4
- 4.2 Exterior

1.3

The Baseline



1 Area
- 11 Base Area
  - a Data Input
  - b Control panel
  - c Power supply
  - j Resin vat
- 12 Screen & Resin Area
  - d Light source
  - e Exposure screen
  - f Screen protector
  - g Exposure screen
  - h Camera *optional*
- 13 Build Plate & Z-axis & Top Cover
  - i Smart resin filling
  - k Z-axis
  - l Removable top cover

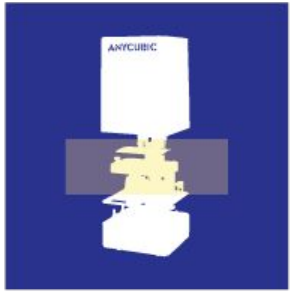
2 Typology
- 21 Electric-Hardware
- 22 Information-Digital
- 23 Mechanical

3 Reusability
- 3.1 1-6 & Notes

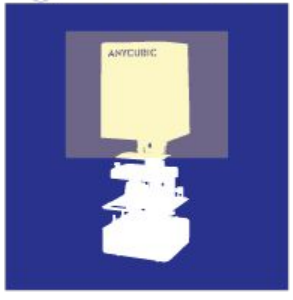
4 Location
- 4.1 Interior
- 4.2 Exterior

11 Base Area

12 Screen & Resin Area



13 Build Plate & Z-axis & Top Cover



LCD screen *(touch control)*
- a Data input
- 2.1 Electric-Hardware
- 3.1 1
- 4.2 Exterior

11

Base plate
Resin press
- f Screen protector
- 2.3 Mechanical
- 3.1 3
- 4.2 Exterior

12

Z-axis plate handle
Z axis dual guard rails
- i Smart resin filling
- k Z-axis
- 2.3 Mechanical
- 3.1 4
- 4.3 Mechanical

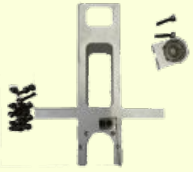
13

Resin press
Resin vat
- j Resin vat
- 2.3 Mechanical
- 2.1 Electric-Hardware
- 3.1 3
- 4.1 Interior

11

Base plate
Printing Platform
Exposure screen
- g Exposure screen
- 2.1 Electric-Hardware
- 3.1 3
- 4.1 Interior
- 4.2 Exterior

12



Base plate
- j Resin vat
- k Z-axis
- 3.1 5
- 4.2 Exterior

Resin Bottle *(attached to the pump)*
- j Resin vat
- 3.1 2
- 4.1 Interior

11

Light source
(Parallel matrix with LED lights)
LED power converter
(Photon X inverter V0.0.3)
- d Light source
- 2.1 Electric-Hardware
- 2.1 Electric-Hardware
- 3.1 5
- 4.1 Interior

12

Proximity sensors: safety sensor
- 2.1 Electric-Hardware
- 3.1 4
- 4.1 Interior

13

Smart resin filling Pump
- j Resin vat
- 2.1 Electric-Hardware
- 3.1 3
- 4.1 Interior

11

Motherboard
(with USB adapter , wifi adapter, power supply)
- 2.2 Information-Digital
- 3.1 2
- 4.1 Interior

12

Proximity sensors: Axis sensor
- 2.1 Electric-Hardware
- 3.1 4
- 4.1 Interior

13

Casing(s)
- c Power supply
- 2.3 Mechanical
- 3.1 3
- c Power supply

11

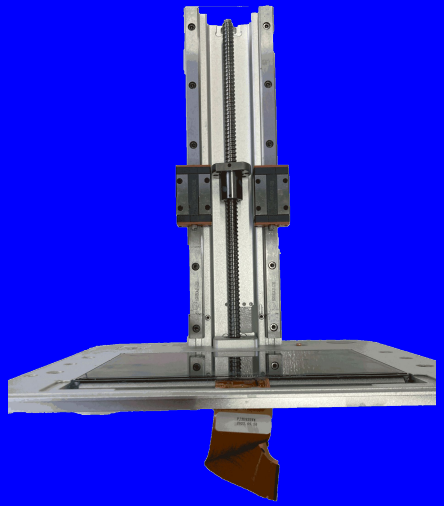
Cooling fans
Fans screws (2.5 mm)
- 2.3 Mechanical
- 3.1 5
- 4.1 Interior

12

Removable top cover
- l Removable top cover
- 2.3 Mechanical
- 3.1 4
- 4.2 Exterior

13

Components

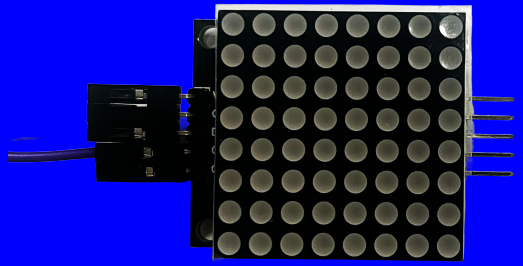


Z-axis rail

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

Cooling fans

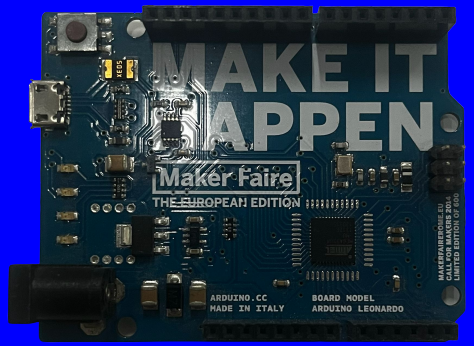
Responsible for a clockwise rotation of our elevator box-



LED light

Expressing emotions and state-of-mind of the machine

Components



Control panel

Responsible for channel in commands and power circuit.

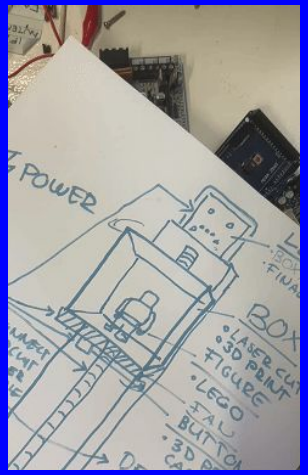
3D printed box

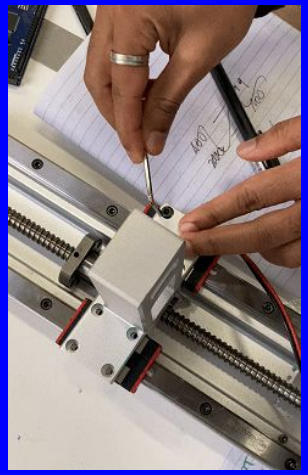
Serves as an elevator box turning around.

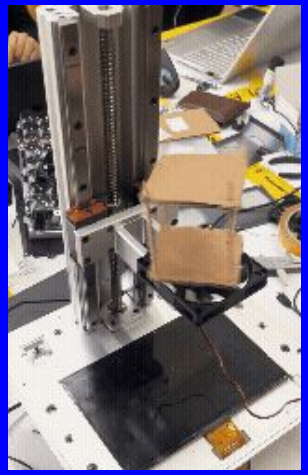
3D printed rat

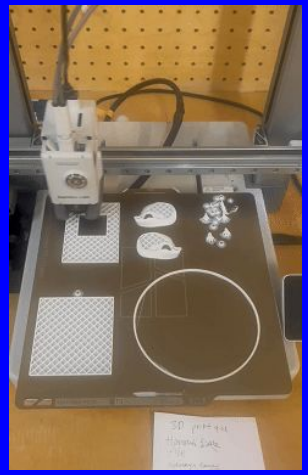
Serves as a test subject

Concepting *Production* **Test** *Finalize*

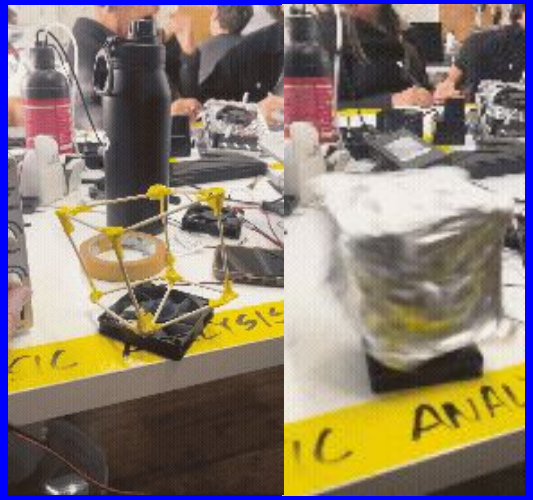






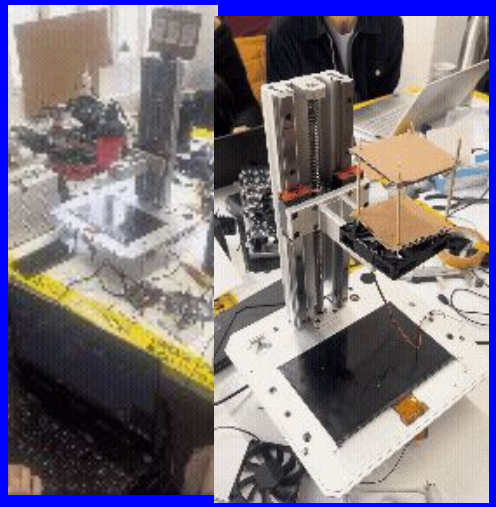


Prototypes



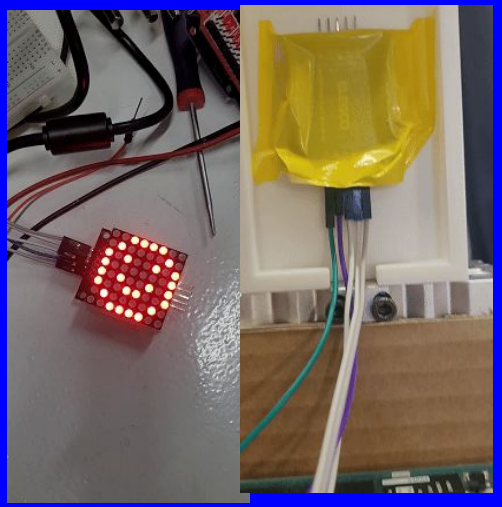
Elevator Box
Testing for spinning fan

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.



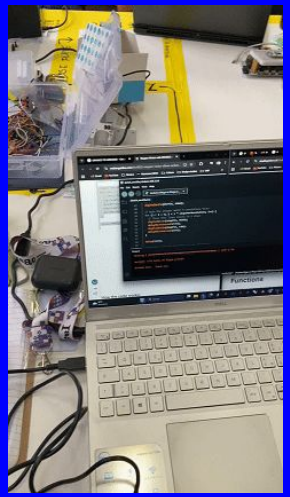
Emotion display
Testing for shifting emotional states

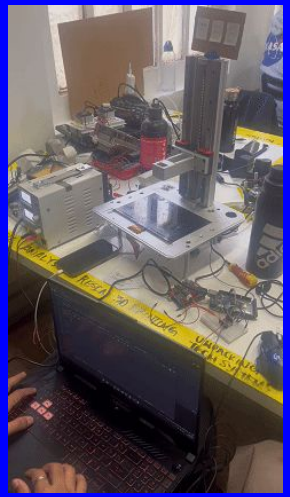
We tested two screens OLED and LED module and chose the latter for its aesthetics. Next, we tested 4 emoticons in the 8×8 LED module. It was a challenge to get the emotions with the constraints of 8 pixels. Later we tested a buzzer to show melodies (beeps) that match the emotions.

Prototypes

not failing just

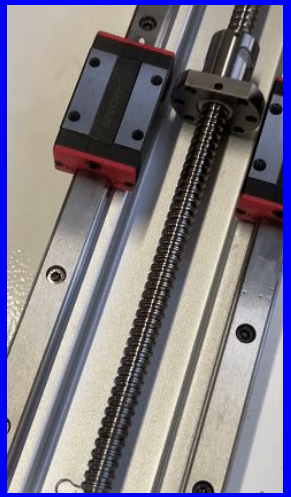
LEARNING!!!

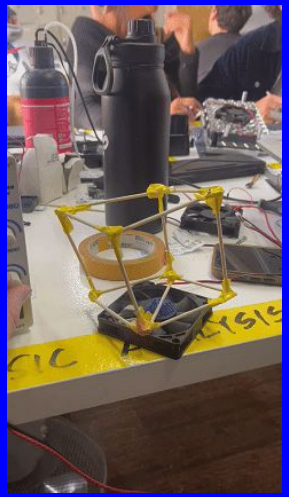




sketch_nov20a.ino

```ino
//our main code // ---------- Pin Setup ----------
const int stepPin = 9;
const int dirPin  = 8;

// ---------- Motion Parameters ----------
// Motor: 1.8° stepper → 200 steps/rev
float stepsPerRev = 200;

// Your leadscrew pitch:
float leadScrewPitch = 4;   // <-- YOU SAID 2 mm per revolution

// Microstepping: 1 = full step, 2 = half, 4 = 1/4, 8 = 1/8, 16 = 1/16, etc.
int microsteps = 1; // adjust based on your DRV8825 M0/M1/M2 pins

void setup() {
  pinMode(stepPin, OUTPUT);
  pinMode(dirPin, OUTPUT);




  Serial.begin(19200);
  Serial.println("Enter Z distance in mm (positive = up, negative = down):");
}

void loop() {
  if (Serial.available()) {
    float distanceMM = Serial.parseFloat();

    // Steps per mm calculation (for 2mm pitch)
    float stepsPerMM = (stepsPerRev * microsteps) / leadScrewPitch;

    long totalSteps = abs(distanceMM * stepsPerMM);

```





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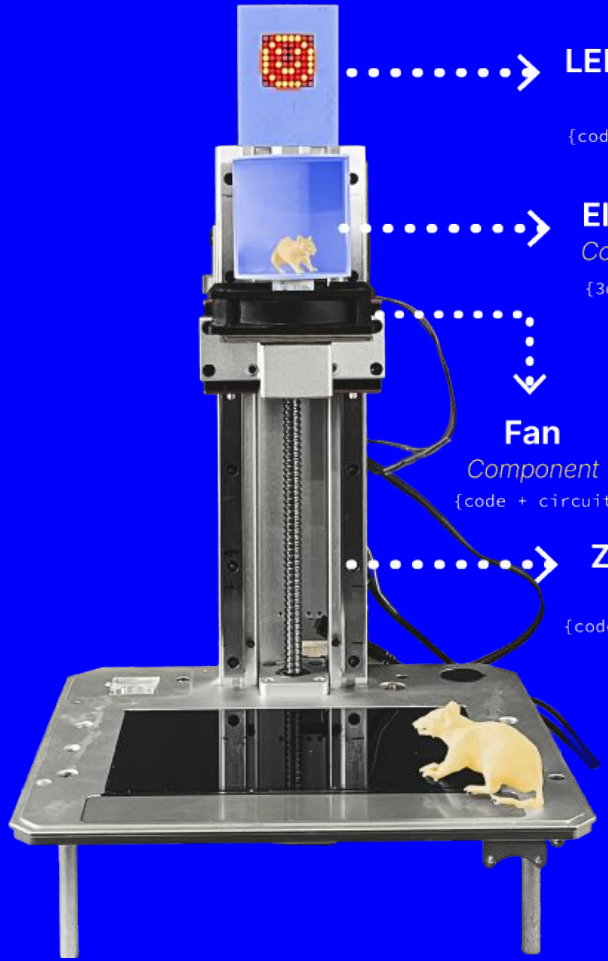
Front View *(up)*



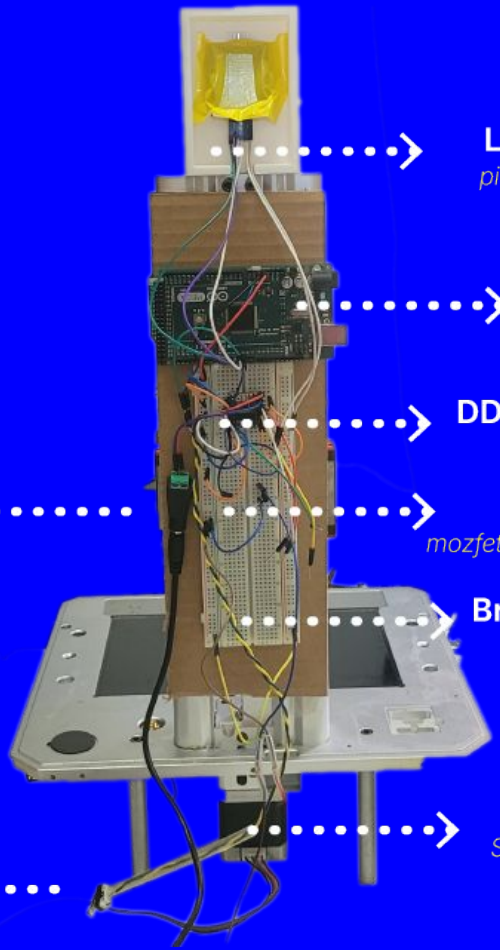
LED Matrix *Display* {code + circuit} + **LED Casing** *Fixture* {3d printed}

Elevator *Component* {3d printed} + **Model** *Figure* {3d printed}

Fan *Component* {code + circuit}

Z - axis *Rails* {code + circuit}

Back View *(up)*



LED *pinout*

Arduino *Control Panel*

DDRV8825 *Driver*

Power *Supply*

Fan *mozfet + resistor setup*

Breadboard *Circuitry*

NEMA *Stepper Motor*

Switch *Button*

initialize

pin + LED matrix

check

Default State

(Happy) Display

Fan *(off)*

Z-axis move *(up)*

button

no

yes

check

Current Emotion

(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**

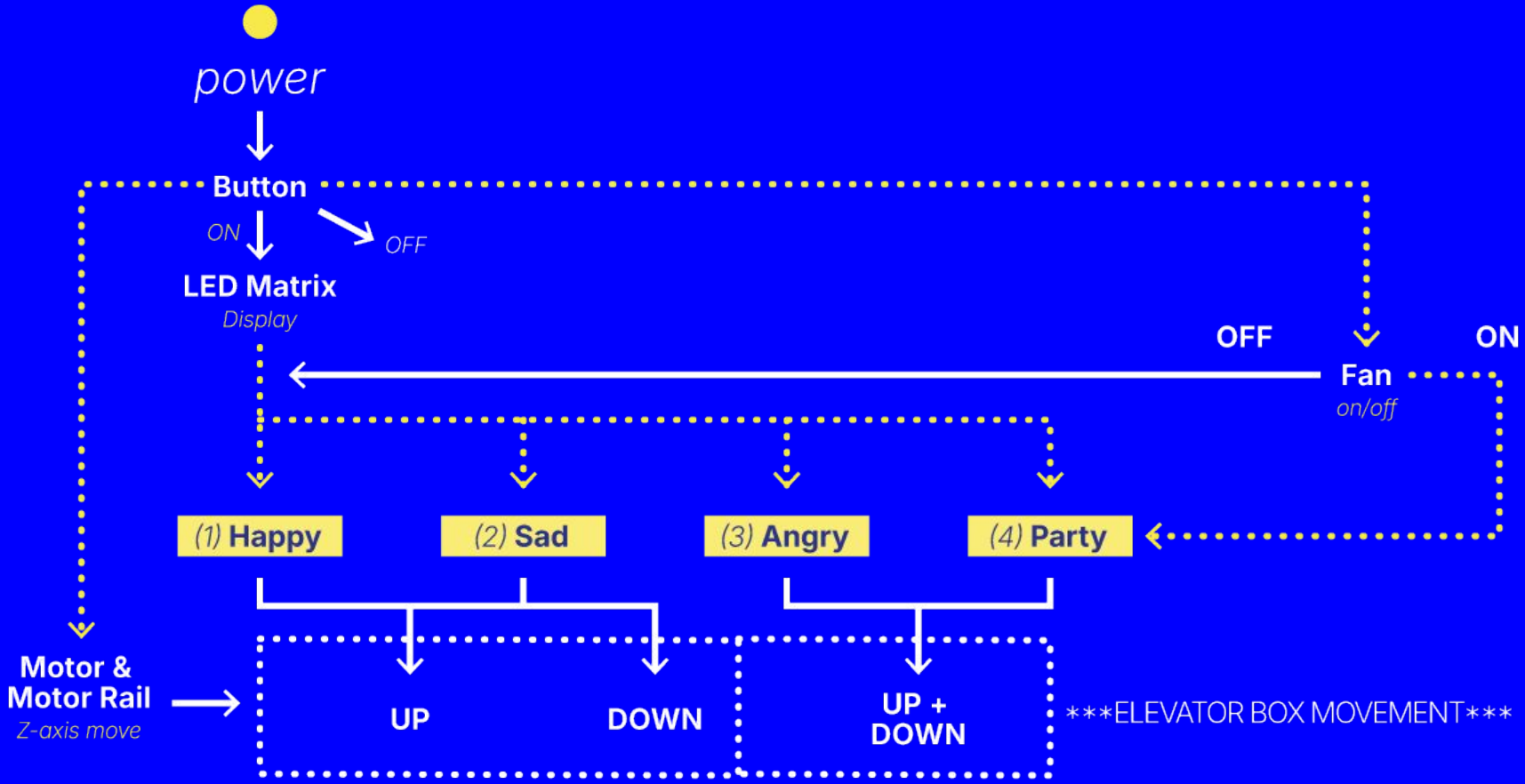
(P) Party

change H

(off) **Fan**

(H) **Display**

(u) **Z-axis move**



THANKS!

IAAC