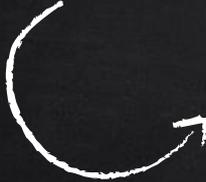




# DYNAMICS



DARYA DUBOUSKAYA

A DJ is shown in a dark, dimly lit environment, likely a nightclub or DJ booth. The DJ is wearing a red and yellow beanie, a black t-shirt with a white graphic, and large red headphones. They are leaning over a turntable, with their right hand resting on a vinyl record. The turntable is illuminated with blue light. In the background, there are various pieces of audio equipment, including a mixer, a monitor, and speakers. The overall atmosphere is focused and professional.

SIMPLICITY  
OF  
MUSIC



# STAGES



Ideation

Design

Assembly

1.

IDEATION &  
PROVE OF CONCEPT



Simplicity is the final achievement. After one has played a vast quantity of notes and more notes, it is simplicity that emerges as the crowning reward of art.

– Frederic Chopin

Single Player DJ MIX Sequencer

OFF

DARYA DUBOUSKAYA File

UPLOAD LOOP 0 << > >> ||

VOLUME

SPEED 1.

DARYA DUBOUSKAYA File

UPLOAD LOOP 0 << > >> ||

VOLUME

SPEED 1.

DARYA DUBOUSKAYA File

UPLOAD LOOP 0 << > >> ||

VOLUME

SPEED 1.

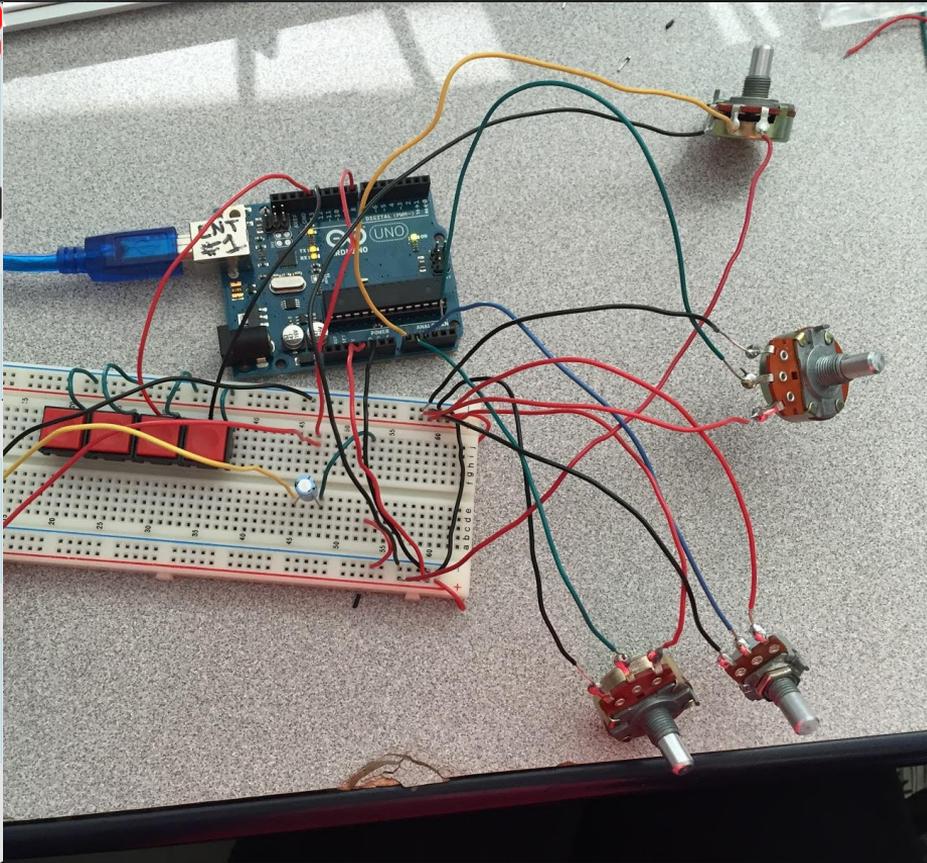
DARYA DUBOUSKAYA File

UPLOAD LOOP 0 << > >> ||

VOLUME

SPEED 1.

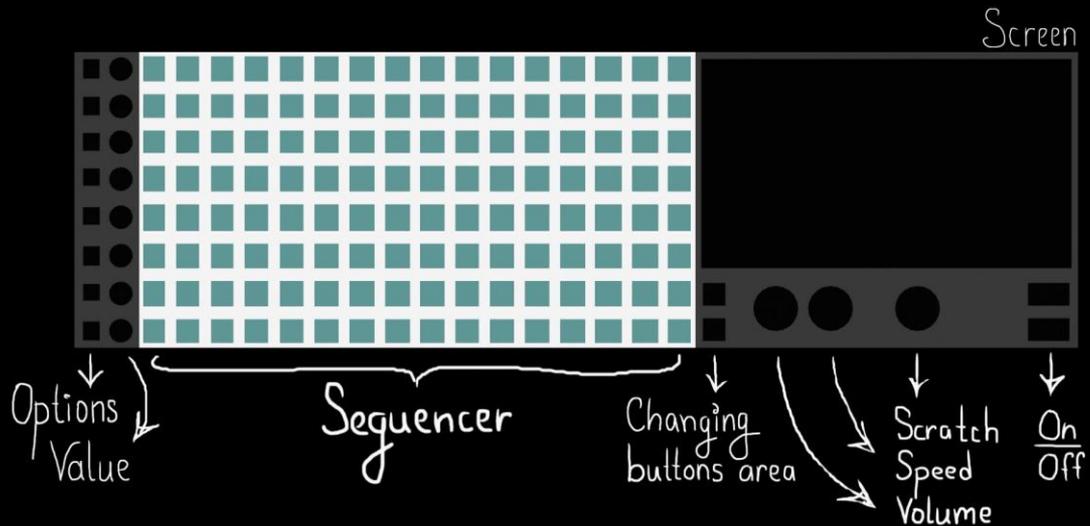
BPM 5 CLEAR ALL



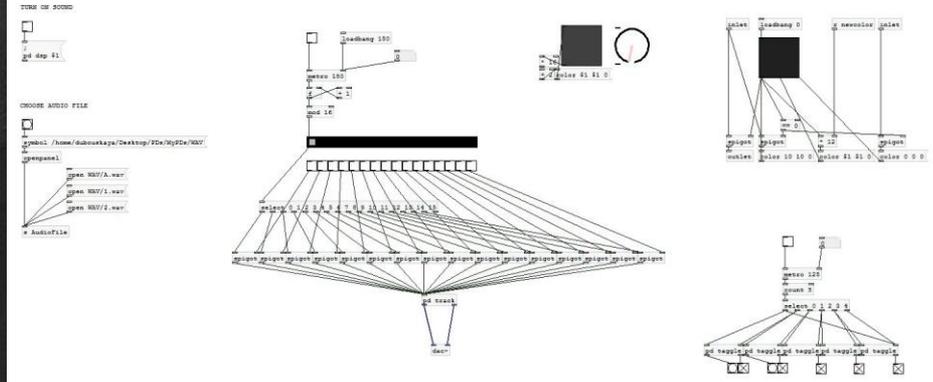
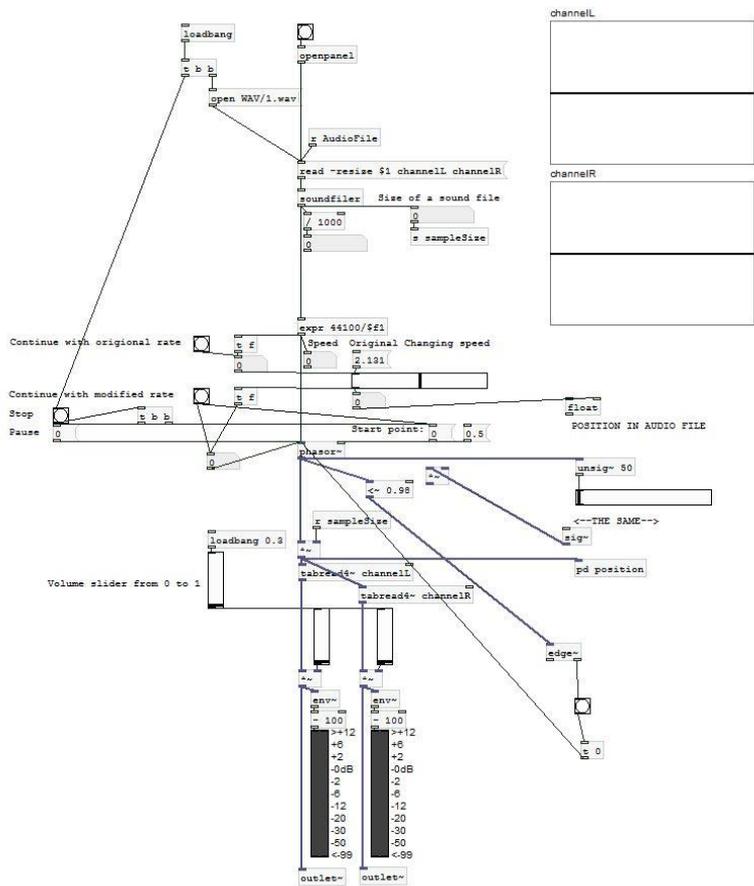
# Dynamics.

Project 'Dynamics' is a sound sequencer with additional effects. The sequencer has the RP implomented into the device which makes it independent from other systems.

- Simple interface
- Touchsreen
- Add your samples
- Simple functionality
- Sound effects
- Connect to Wifi







```

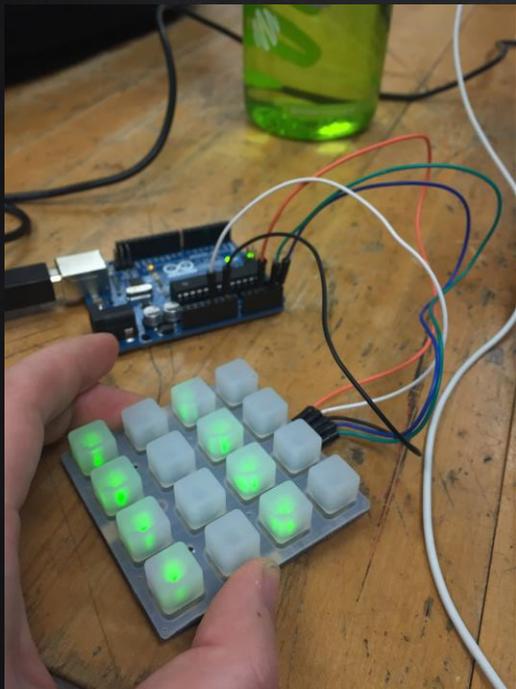
serial_num | Arduino 2:1.0.5+dfsg2-4
File Edit Sketch Tools Help

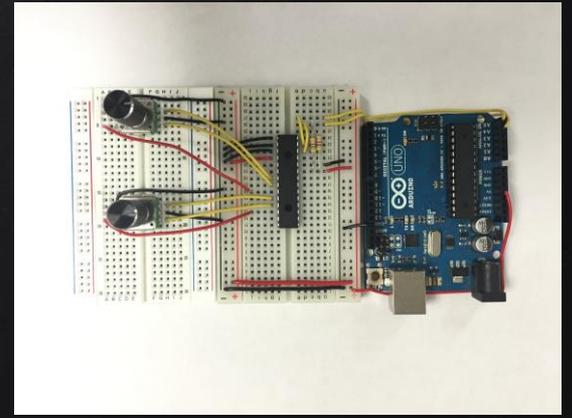
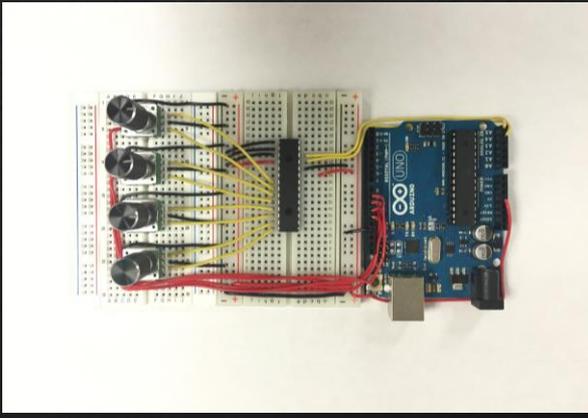
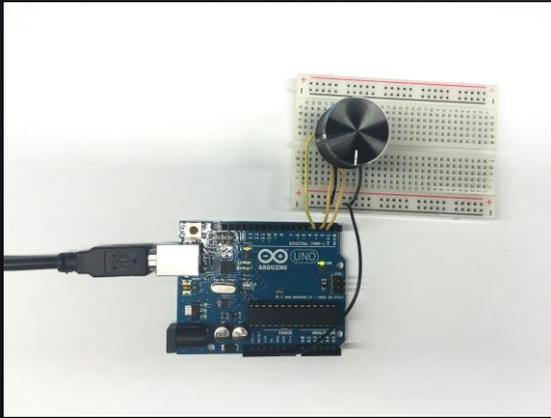
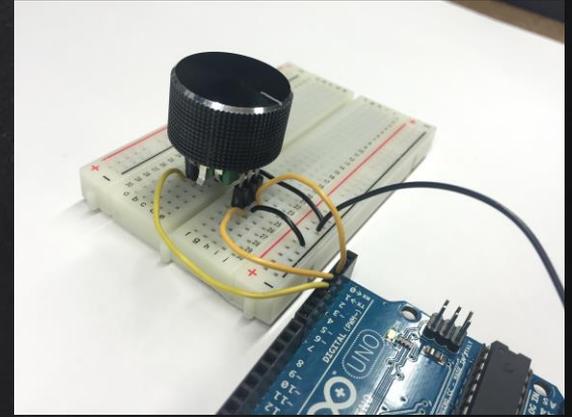
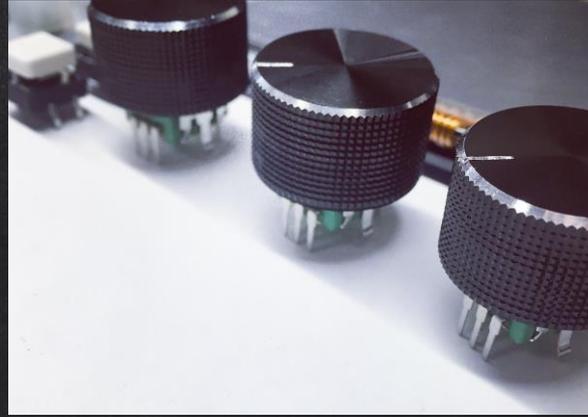
serial_num
int i = 0;
int step;
int get;

void setup() {
  Serial.begin(9600);
  pinMode(9, OUTPUT);
}

void loop() {
  step = 1 % 10;
  Serial.write(step);
  get = Serial.read();
  if (get == 1) {
    digitalWrite(9, HIGH);
  }
  if (get == 2) {
    digitalWrite(9, LOW);
  }
  delay(200);
}
Done uploading.
Binary sketch size: 2,394 bytes (of a 32,256 byte maximum)

```



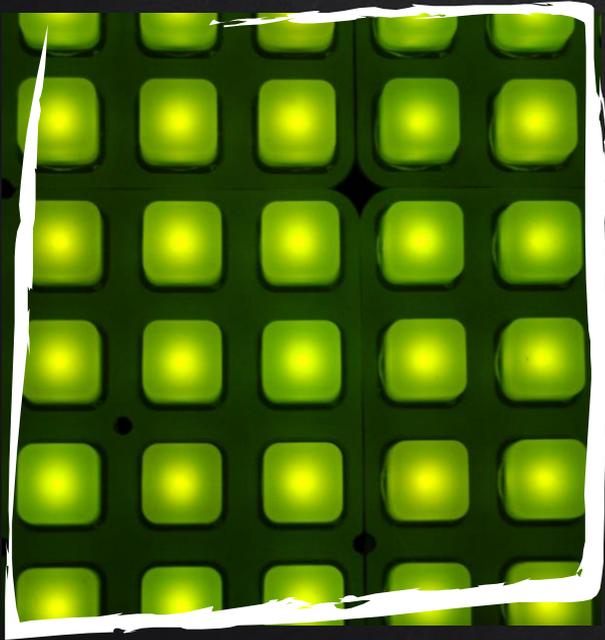


2.

DESIGN

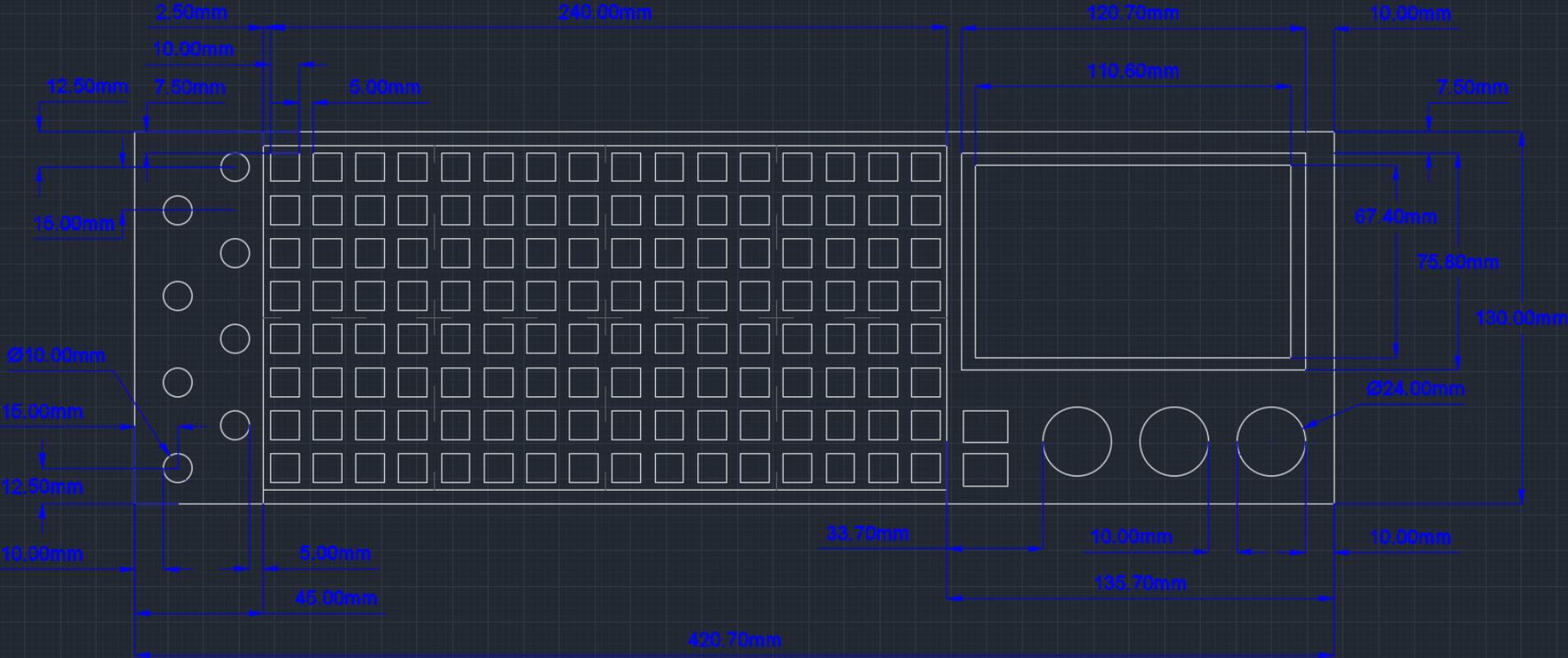


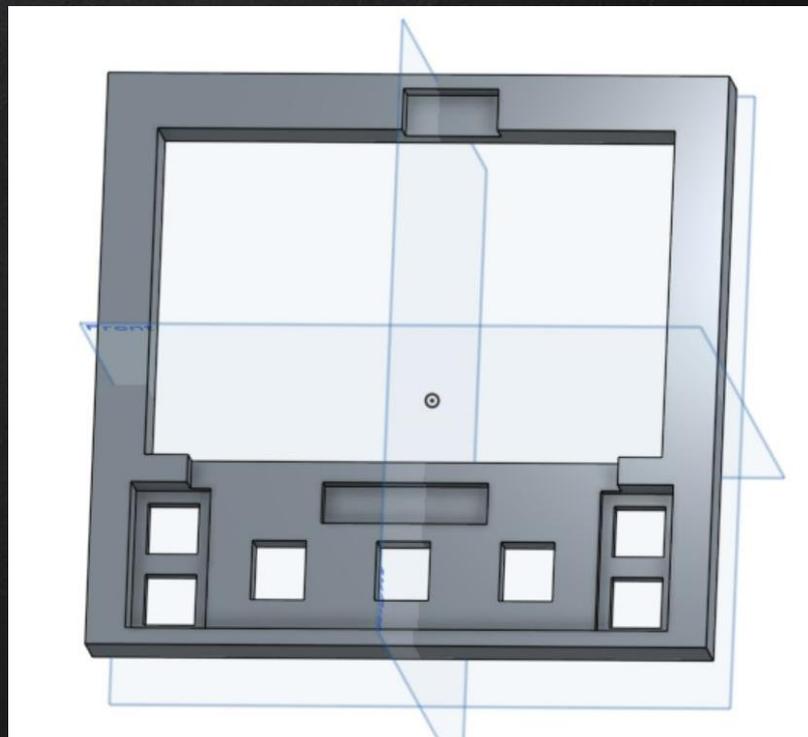
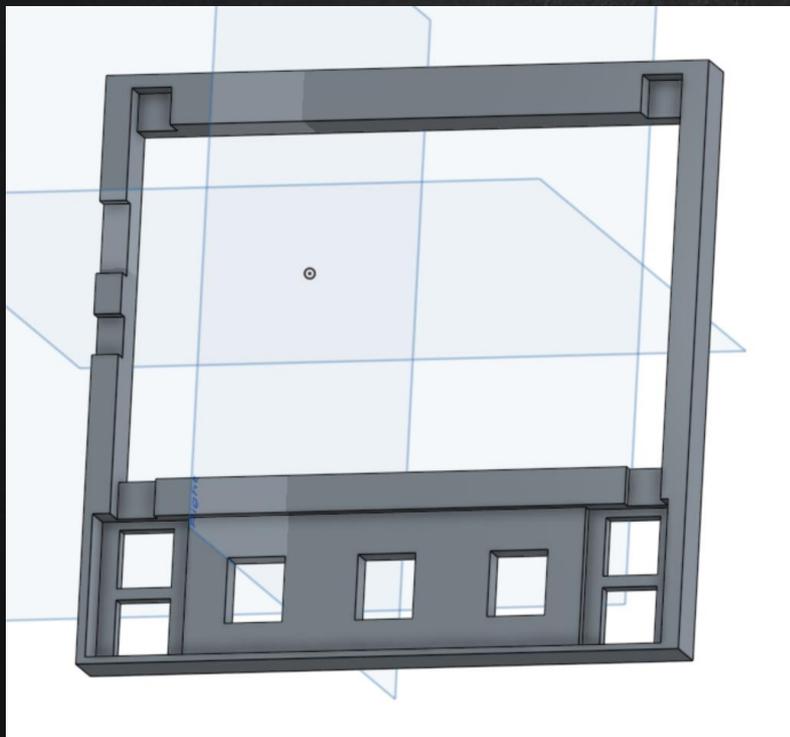
## PROCESS

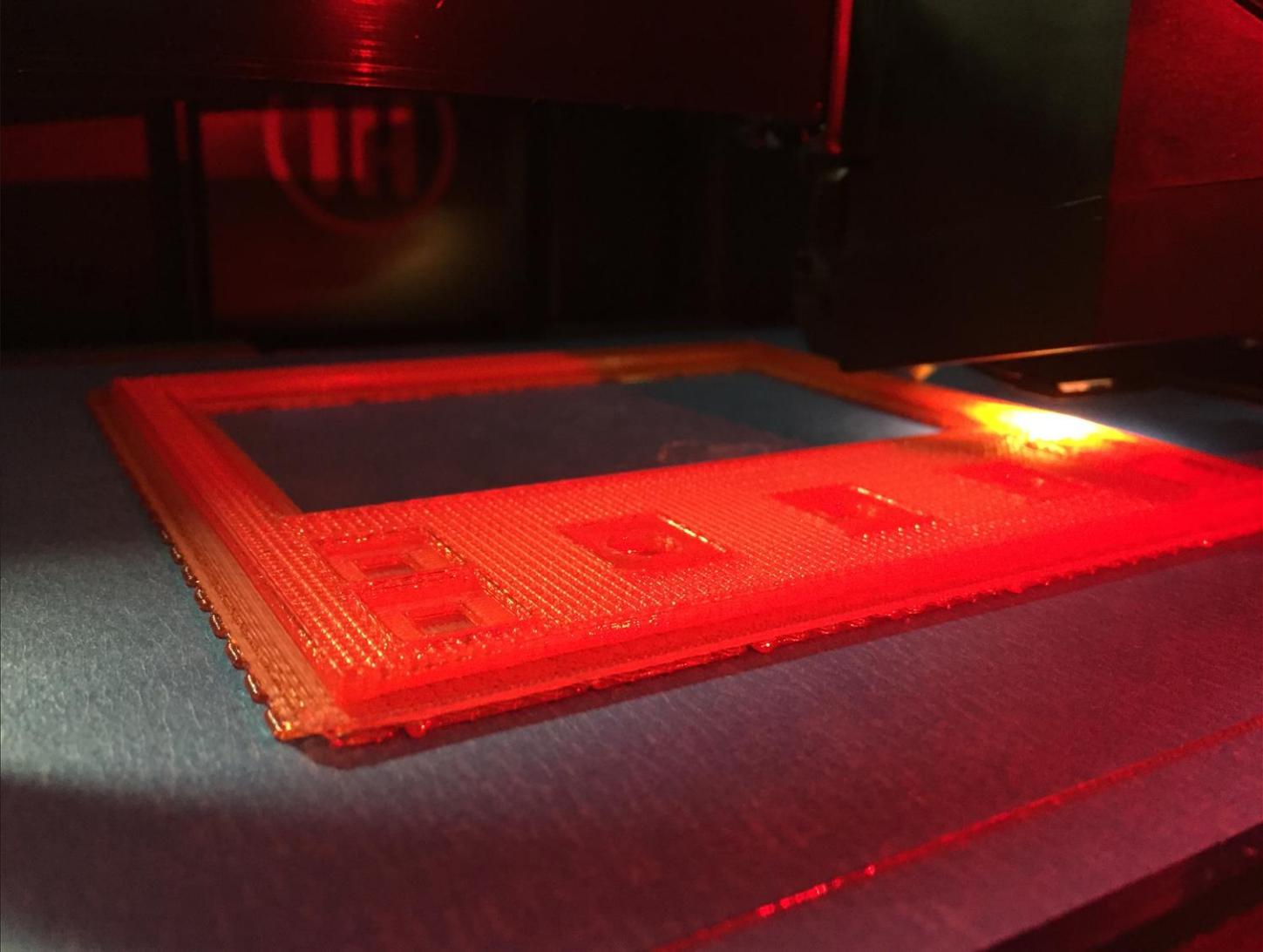


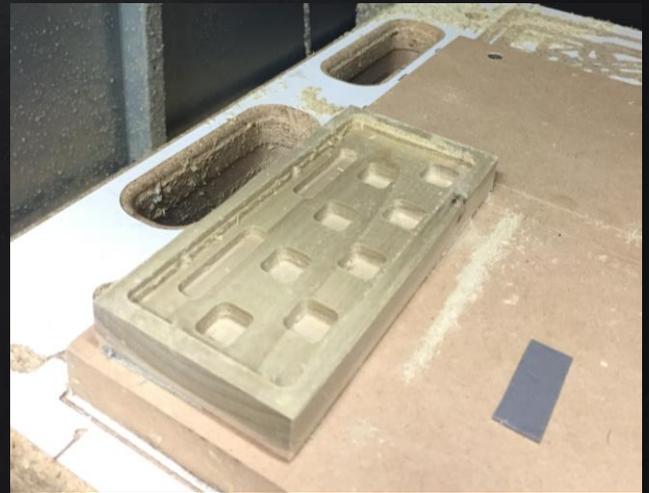
- X 2D Modeling [AutoCAD]
- X 3D Modeling [Maya, OnShape, Rhino]
- X Circuit Board Design
- X 3D Printing
- X CNC Cutting
- X Laser Cutting
- X PCB Board Cutting

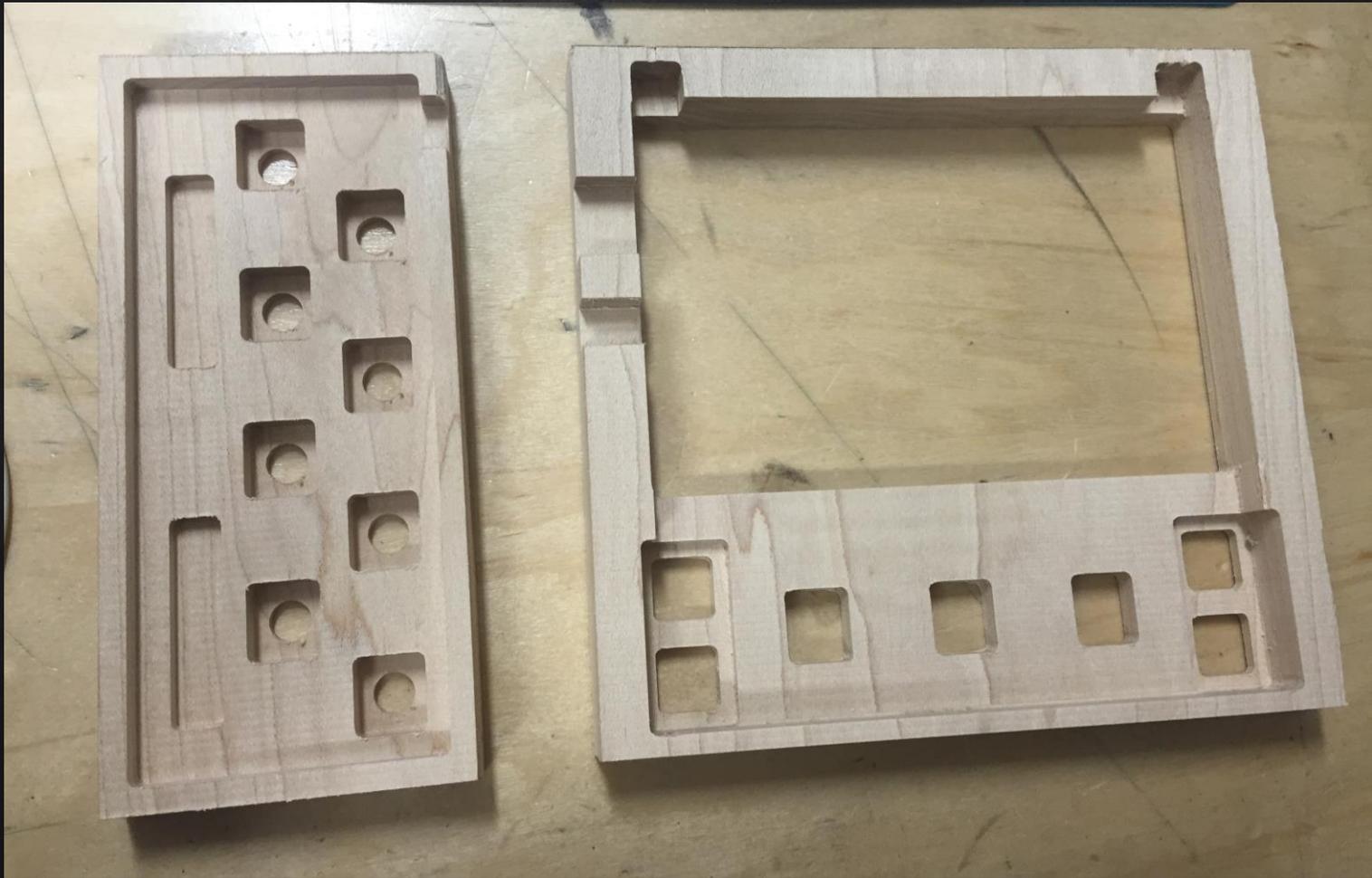
# TOP VIEW

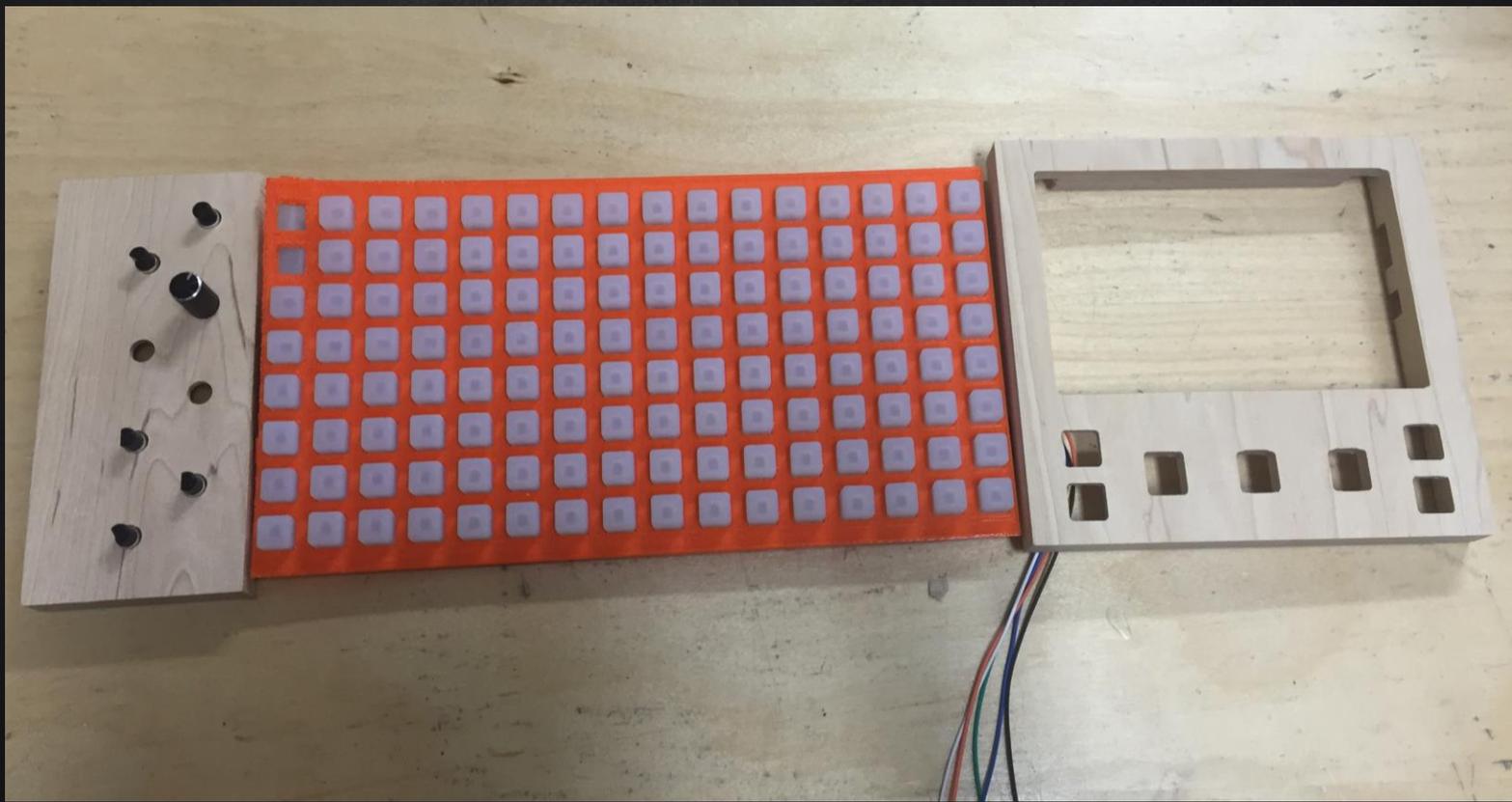


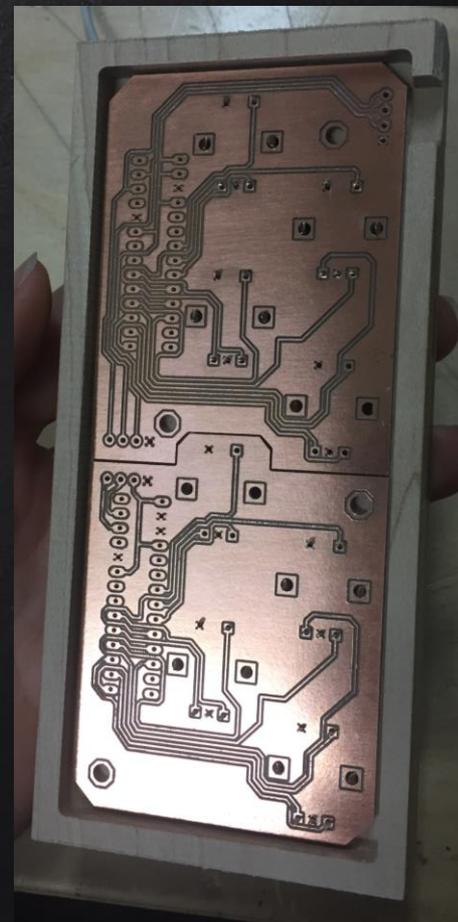
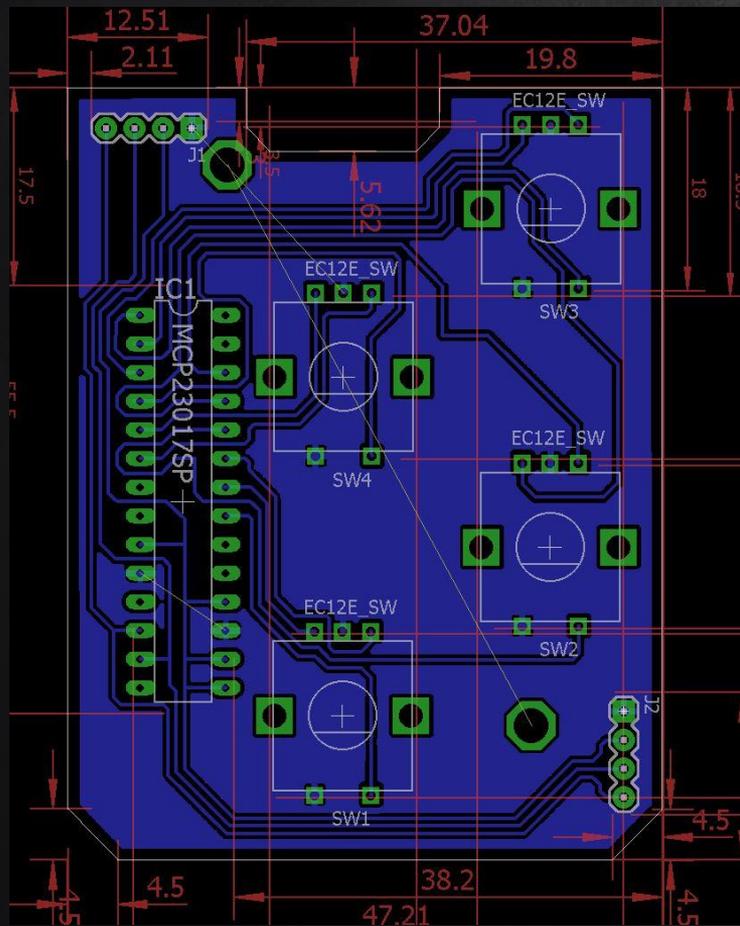






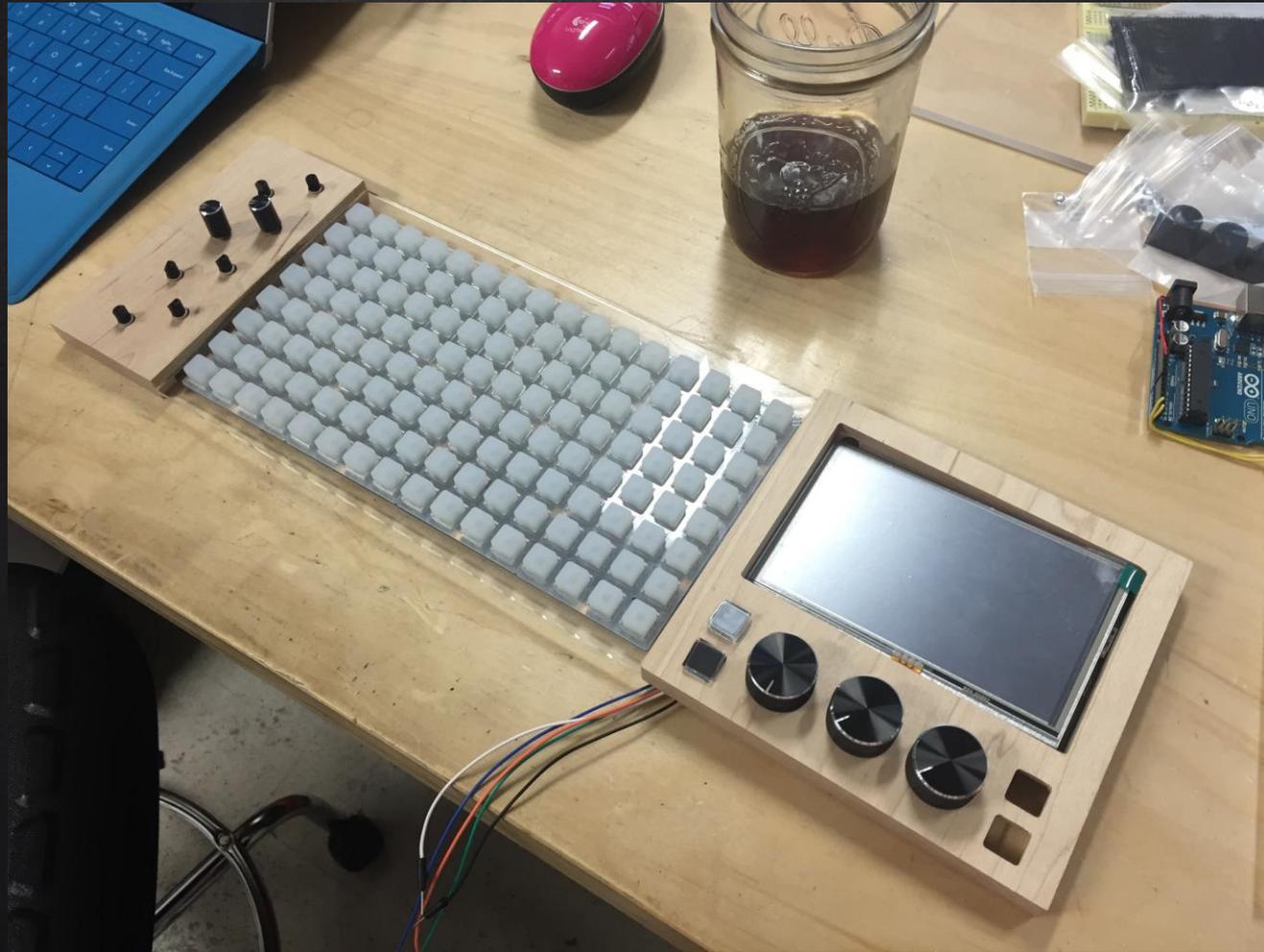


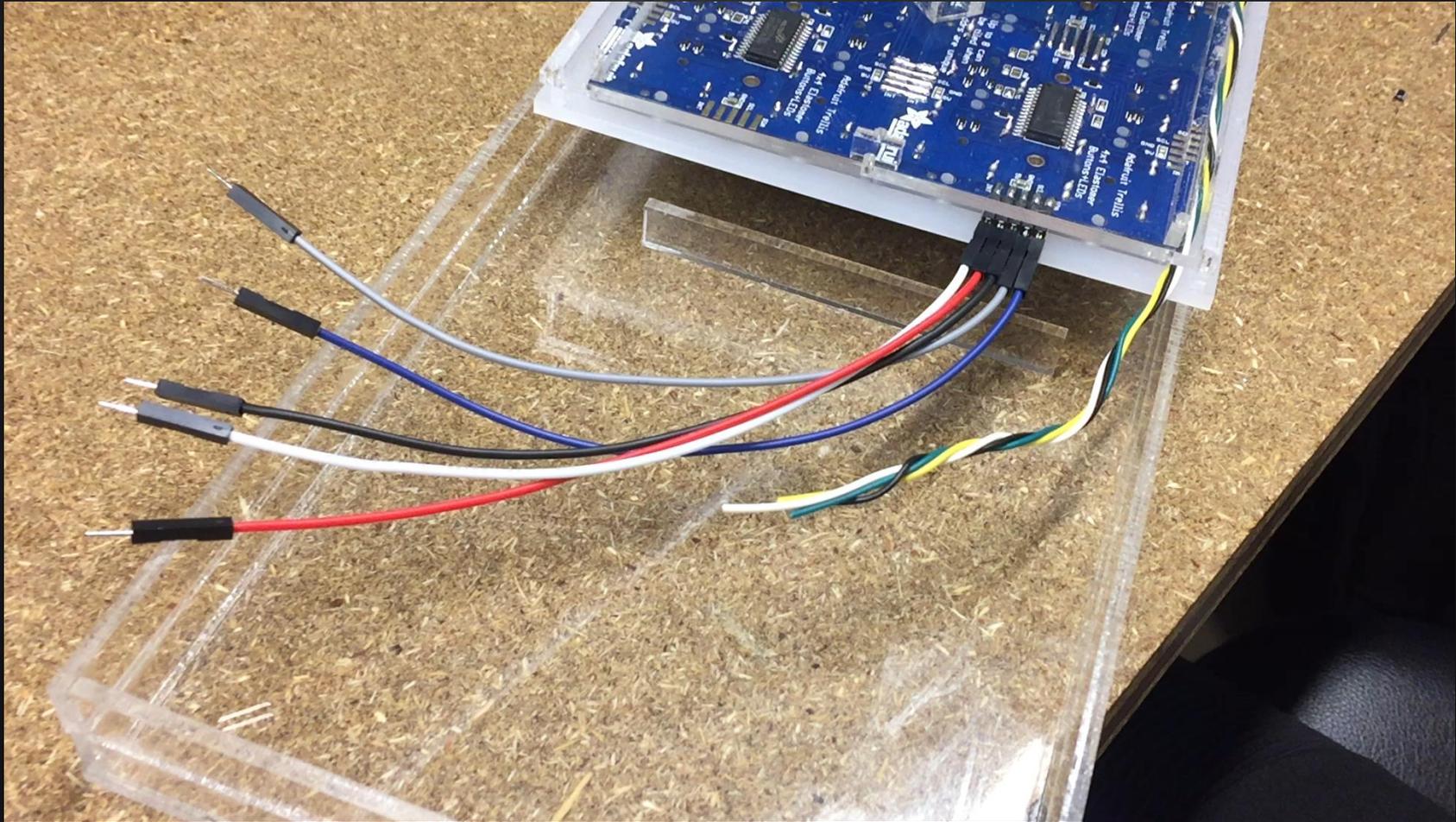




3.

ASSEMBLY









# DEBUGGING AND IMPROVEMENTS

1. Raspberry Pi 3 & Ubuntu MATE 16.04
2. VNC and Display settings
3. MCP23017 noise
4. Power
5. Bluetooth
6. Connection of all components
7. Interface
8. Application





# BUDGET

COMPONENT	AMOUNT	PRICE	TOTAL
Silicone Elastomer 4x4 Button Keypad - for 3mm LEDs	8	\$4.46	\$35.68
Adafruit Trellis Monochrome Driver PCB for 4x4 Keypad & 3	8	\$8.96	\$71.68
Diffused Green 3mm LED (25 pack)	3	\$3.00	\$9.00
Raspberry Pi 3	1	\$41.99	\$41.99
Class 10 Micro SDXC Card	1	\$29.72	\$29.72
Transcend USB 3.0 Card Reader	1	\$6.95	\$6.95
5 inch HDMI TFT Screen with Touchscreen	1	\$39.99	\$39.99
Illuminated Pushbutton - 10 mm Square	1	\$5.72	\$5.72
Rotary Encoders	11	\$4.00	\$44.00
Knobs	11	\$3.00	\$33.00
MCP23017 chip	3	\$6.49	\$19.47
Teensy	1	\$30.95	\$30.95
Lithium Ion Battery Pack - 3.7V 6600mAh	2	\$29.50	\$59.00
Charger	1	\$20.00	\$20.00
Power leveler	2	\$7.45	\$14.90
White Transparent Acrylic Sheet 1/8" 12x12	1	\$5.66	\$5.66
White Acrylic Sheet 1/4" 12x24	1	\$9.58	\$9.58
Maple wood	3ft	\$17.50	\$17.50
PCB Boards	1	\$5.60	\$5.60
Glue	1	\$2.00	\$2.00
Solder	1	\$1.00	\$1.00
Cables (power, etc..)	5	\$3.00	\$15.00
Wood Finish	1	\$3.00	\$3.00
	<b>%15 contingency:</b>		<b>\$75.51</b>
	<b>Total:</b>		<b>\$596.90</b>

COMPONENT	AMOUNT	PRICE	TOTAL
Silicone Elastomer 4x4 Button Keypad - for 3mm LEDs	12	\$4.46	\$53.52
Adafruit Trellis Monochrome Driver PCB for 4x4 Keypad & 3	12	\$8.96	\$107.52
Diffused Green 3mm LED (25 pack)	8	\$3.00	\$24.00
Raspberry Pi 2	1	\$35.32	\$35.32
Raspberry Pi 3	1	\$41.99	\$41.99
Class 10 Micro SDXC Card	1	\$29.72	\$29.72
Transcend USB 3.0 Card Reader	1	\$6.95	\$6.95
HDMI 5" 800x480 Display Backpack - With Touchscreen	1	\$75.00	\$75.00
5 inch HDMI TFT Screen with Touchscreen	1	\$39.99	\$39.99
Illuminated Pushbutton - 10 mm Square	1	\$5.72	\$5.72
Rotary Encoders	12	\$4.00	\$48.00
Knobs	12	\$3.00	\$36.00
MCP23017 chip	3	\$6.49	\$19.47
Teensy	1	\$30.95	\$30.95
Lithium Ion Battery Pack - 3.7V 6600mAh	2	\$29.50	\$59.00
Charger	1	\$20.00	\$20.00
Power leveler	2	\$7.45	\$14.90
White Transparent Acrylic Sheet 1/8" 12x12	1	\$5.66	\$5.66
White Acrylic Sheet 1/4" 12x24	1	\$9.58	\$9.58
Clear Acrylic Sheet 1/8" 48x20	1	\$0.00	\$0.00
Poplar wood	3	\$0.00	\$0.00
Maple wood	6ft	\$35.00	\$35.00
PCB Boards	3	\$0.00	\$0.00
Glue	1	\$0.00	\$0.00
Solder	1	\$0.00	\$0.00
Cables (power, etc..)	5	\$0.00	\$0.00
Wood Finish	1	\$0.00	\$0.00
	<b>%15 contingency:</b>		<b>\$104.74</b>
	<b>Total:</b>		<b>\$803.03</b>



## FUTURE OF THE DYNAMICS

Application  
SoundCloud  
Spotify  
GUI  
Bluetooth  
~ Node.js

Uniqueness of the idea.

Online live collaboration  
Computer preinstalled  
Wifi connection  
Connection to  
SoundCloud  
Control through VNC

Patient  
Maker's Fair  
Kickstarter  
Market



## LEARNED

- X Raspberry Pi 2, 3
- X Circuit boards design and printing [Eagle, PCB Boards, Othermill]
- X Ubuntu
- X Pure Data
- X OnShape 3d modeling
- X Laser Cutting, Types of Plastic, assembly
- X Electrical components:  
rotary encoders, touchscreen, LED push buttons, teensy, MCP23017.
- X CNC Cut, Rhino, types of tools and wood.
- X Design of the devices
- X Serial Communication
- X VNC

## SUPPORT

Big Thank You to:

- X Technical Adviser and mental support: Kevin Patton
- X Technical Support: Zeven Rodriguez
- X Brooklyn Research
- X Family and Friends



THANKS!

You can find me at  
DUBOUSKAYA.COM  
darya@dubouskaya.com



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## THIS IS A SLIDE TITLE

X Here you have a list of items

X And some text

X But remember not to overload your slides with content

You audience will listen to you or read the content, but won't do both.



Bring the attention of your audience over a key concept using icons or illustrations



## YOU CAN ALSO SPLIT YOUR CONTENT

### **White**

Is the color of milk and fresh snow, the color produced by the combination of all the colors of the visible spectrum.

### **Black**

Is the color of coal, ebony, and of outer space. It is the darkest color, the result of the absence of or complete absorption of light.



## IN TWO OR THREE COLUMNS

### **Yellow**

Is the color of gold, butter and ripe lemons. In the spectrum of visible light, yellow is found between green and orange.

### **Blue**

Is the colour of the clear sky and the deep sea. It is located between violet and green on the optical spectrum.

### **Red**

Is the color of blood, and because of this it has historically been associated with sacrifice, danger and courage.



## A PICTURE IS WORTH A THOUSAND WORDS



A complex idea can be conveyed with just a single still image, namely making it possible to absorb large amounts of data quickly.



## AND TABLES TO COMPARE DATA

	A	B	C
Yellow	10	20	7
Blue	30	15	10
Orange	5	24	16



# MAPS



89,526,124

Whoa! That's a big number, aren't you proud?

89,526,124\$

That's a lot of money

185,244 USERS

And a lot of users

100%

Total success!



OUR PROCESS IS EASY





## LET'S REVIEW SOME CONCEPTS

### **Yellow**

Is the color of gold, butter and ripe lemons. In the spectrum of visible light, yellow is found between green and orange.

### **Blue**

Is the colour of the clear sky and the deep sea. It is located between violet and green on the optical spectrum.

### **Red**

Is the color of blood, and because of this it has historically been associated with sacrifice, danger and courage.

### **Yellow**

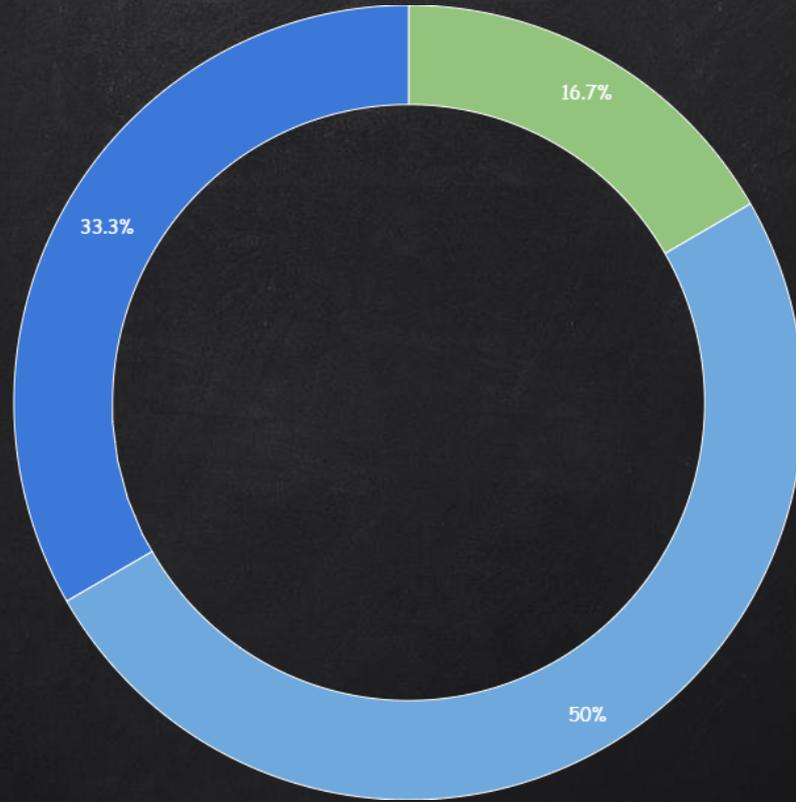
Is the color of gold, butter and ripe lemons. In the spectrum of visible light, yellow is found between green and orange.

### **Blue**

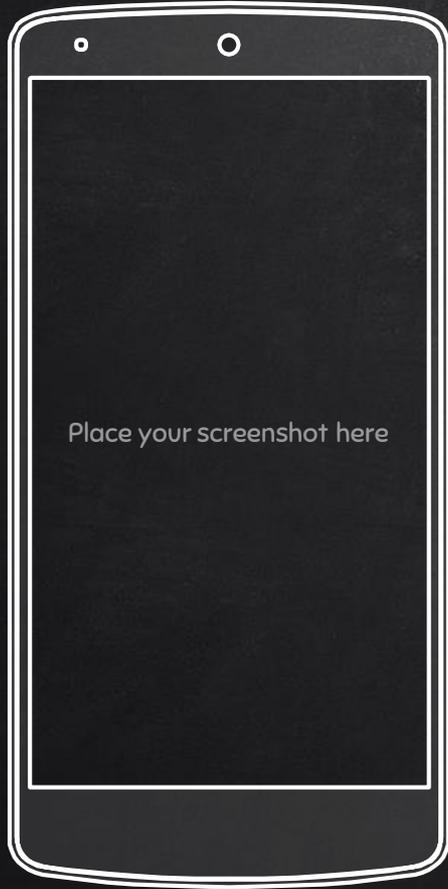
Is the colour of the clear sky and the deep sea. It is located between violet and green on the optical spectrum.

### **Red**

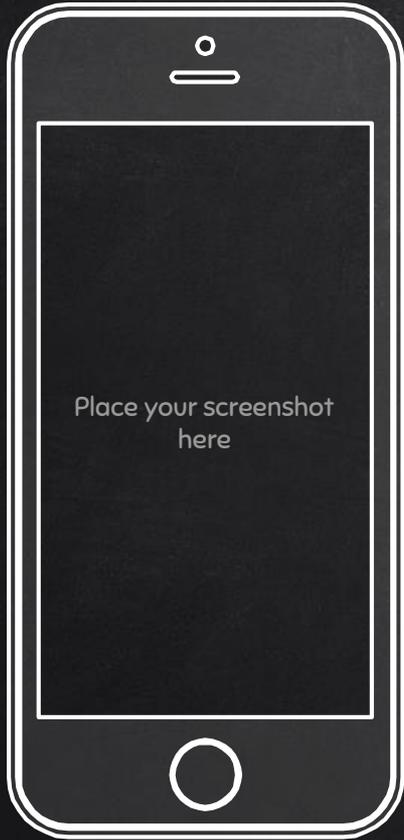
Is the color of blood, and because of this it has historically been associated with sacrifice, danger and courage.



You can copy&paste graphs from [Google Sheets](#)



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Show and explain your web, app  
or software projects using  
these gadget templates.



IPHONE PROJECT  
Show and explain your web, app  
or software projects using  
these gadget templates.



## TABLET PROJECT

Show and explain your web, app or software projects using these gadget templates.



**DESKTOP PROJECT**  
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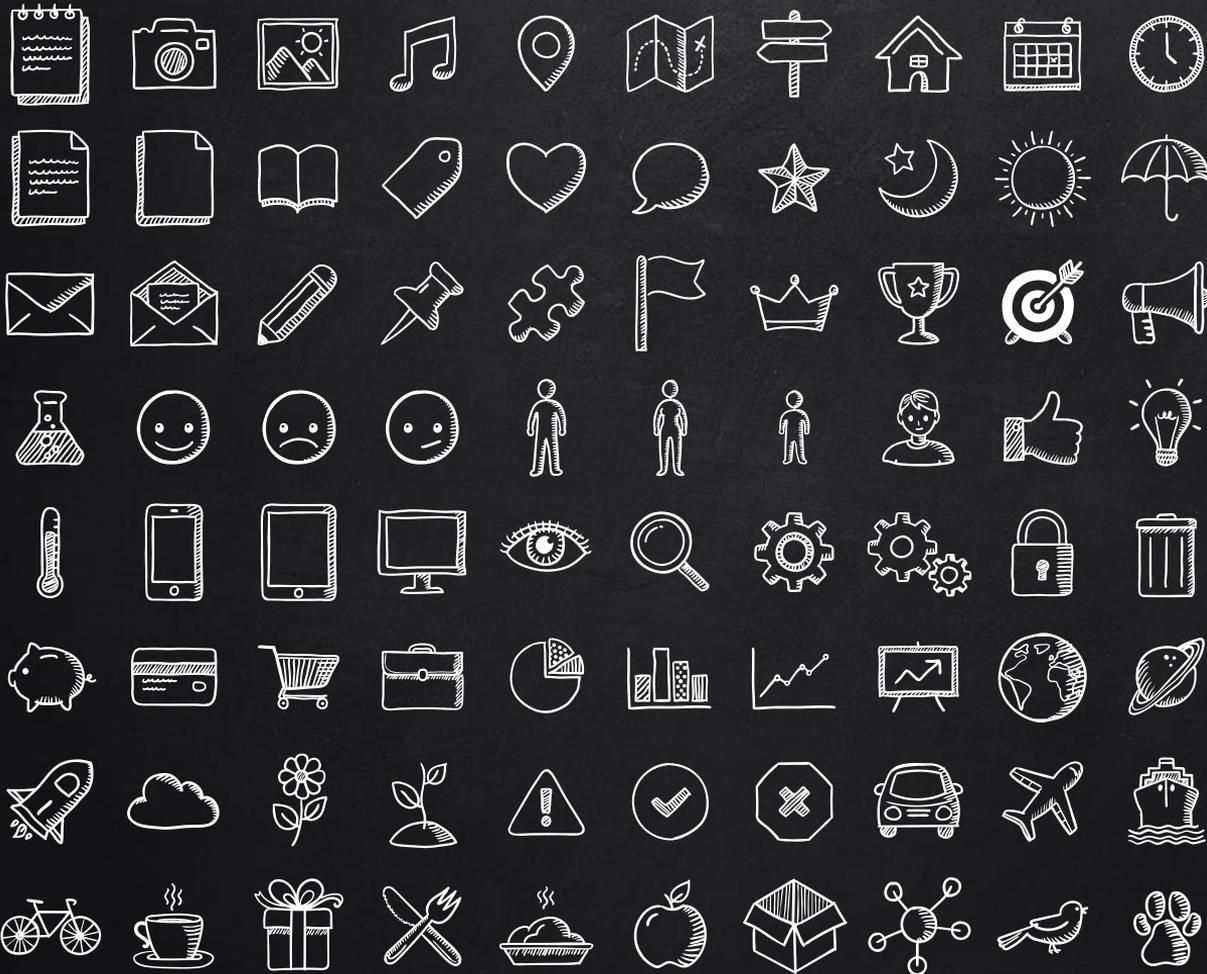
<https://www.google.com/fonts#UsePlace:use/Collection:Sniglet:400|Walter+Turncoat>

Click on the “arrow button” that appears on the top right

- X White #FFFFFF



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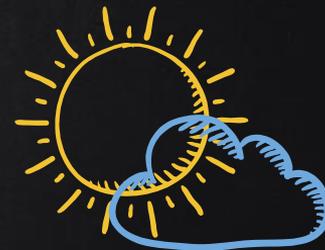
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Examples:



# EXTRA GRAPHICS

