Planning

Project description:

The project is a claw machine that moves a claw in the x, y, and z planes with a joystick and allows the user to pick up pieces of candy at the bottom of the box.

Components:

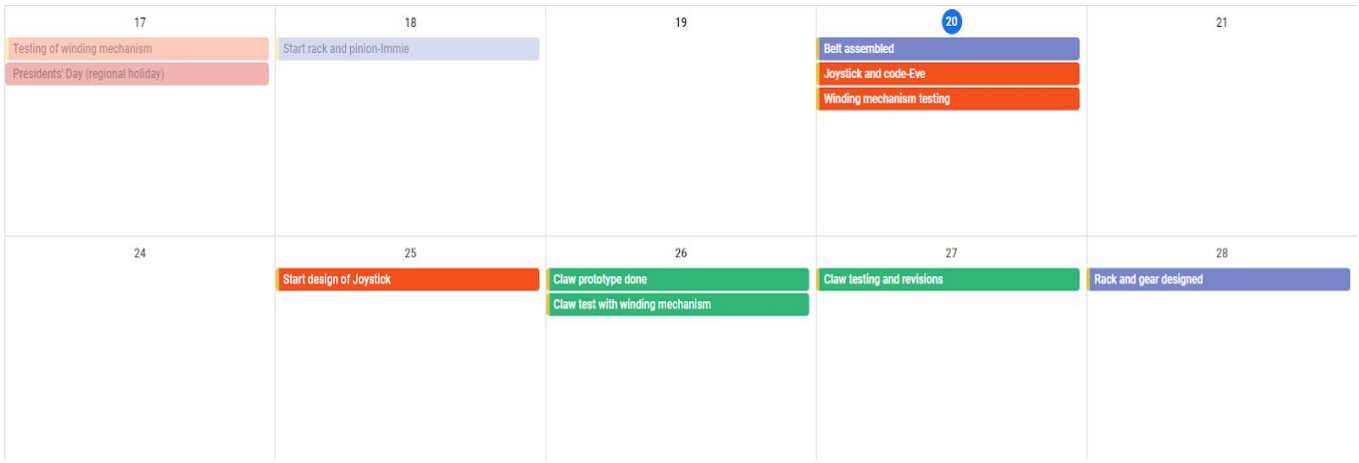
- Servos
- Laser-cut acrylic box
- Joystick (3D printed)
- Laser-cut gears
- 3D printed track for rack-and-pinion
- Wires!!
- Tough cloth for belt
-

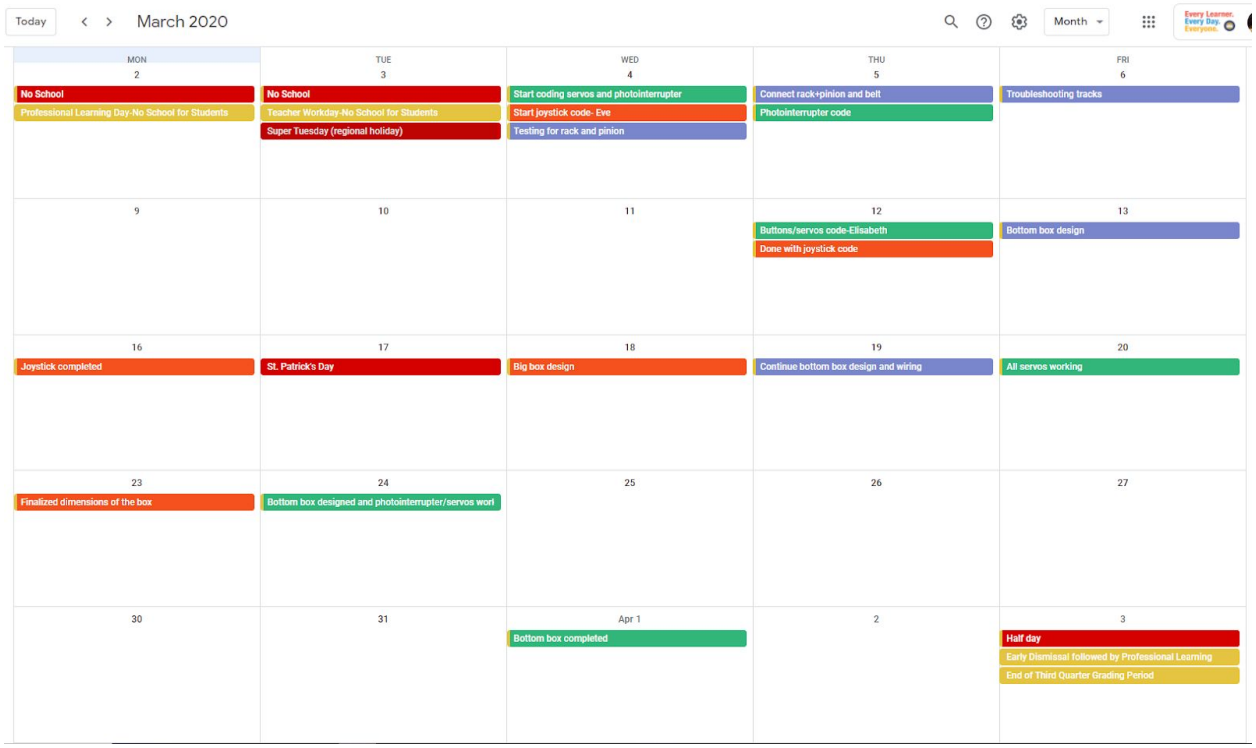
Little mechanisms

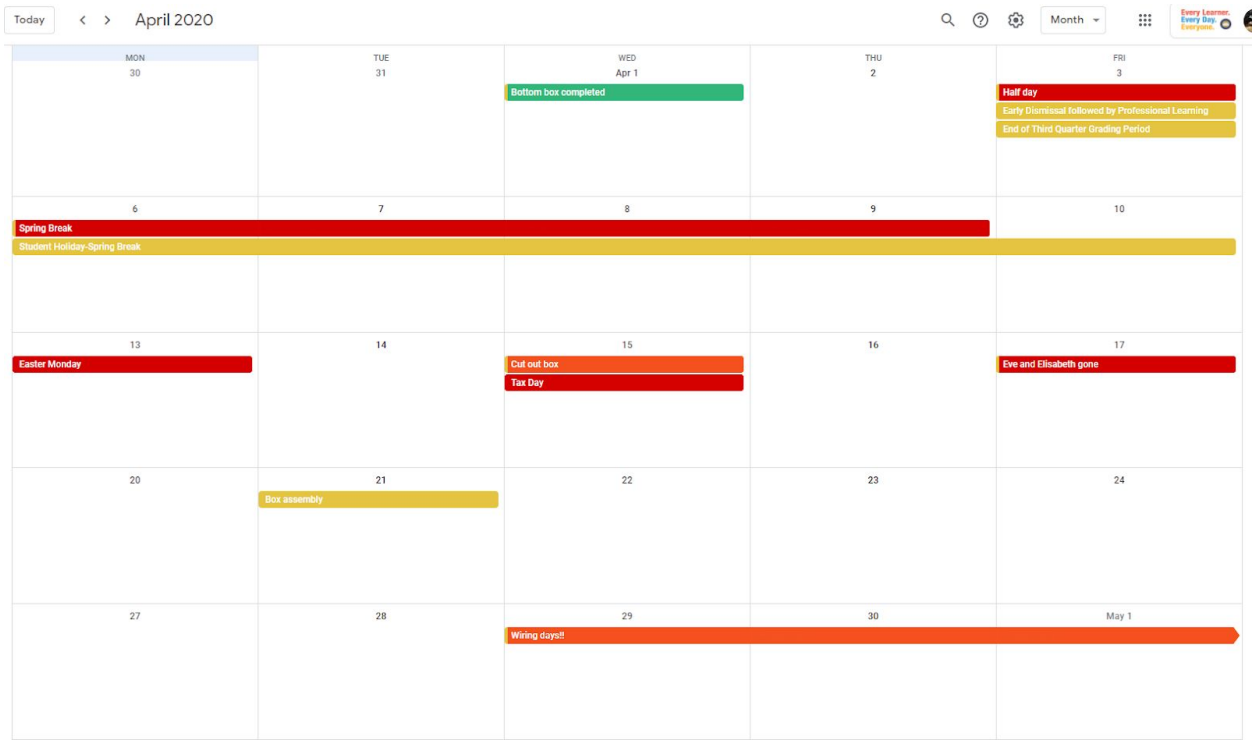
- photointerrupter to prevent damage

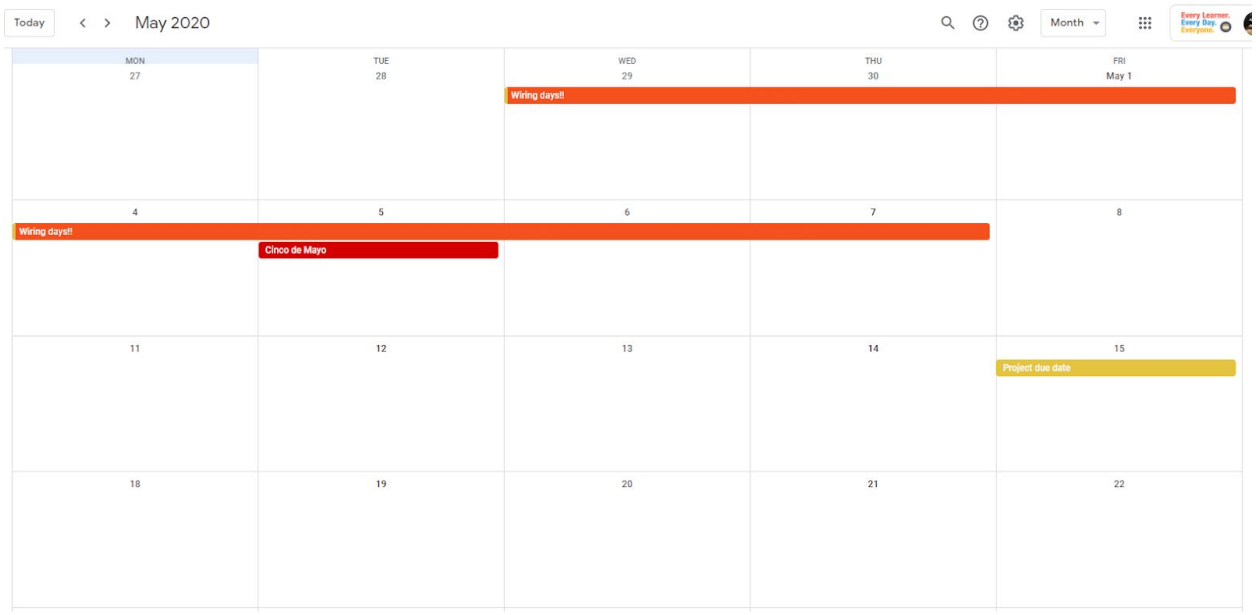
Schedule: [Access calendar here]

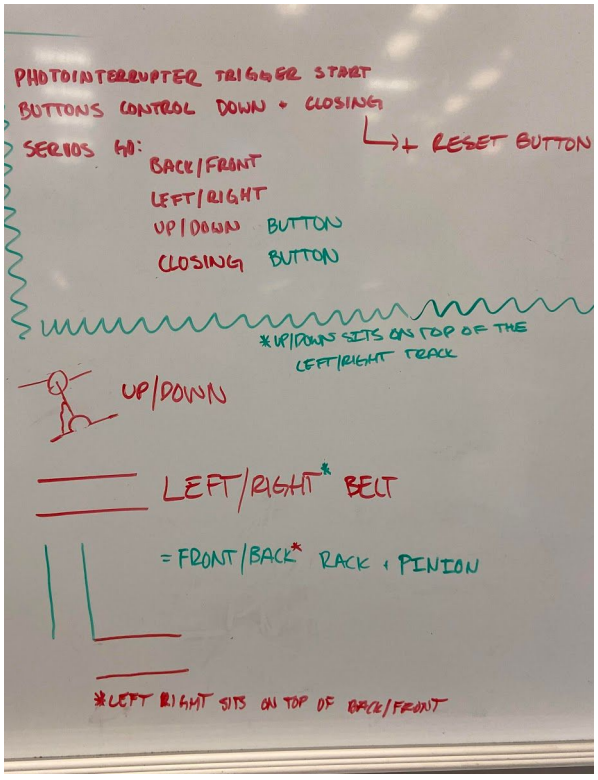
Pictures:

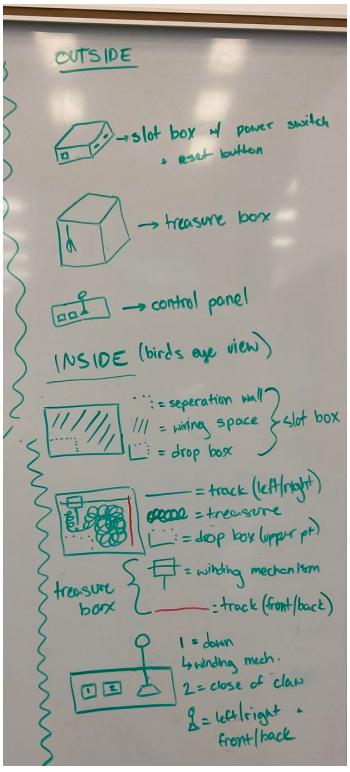


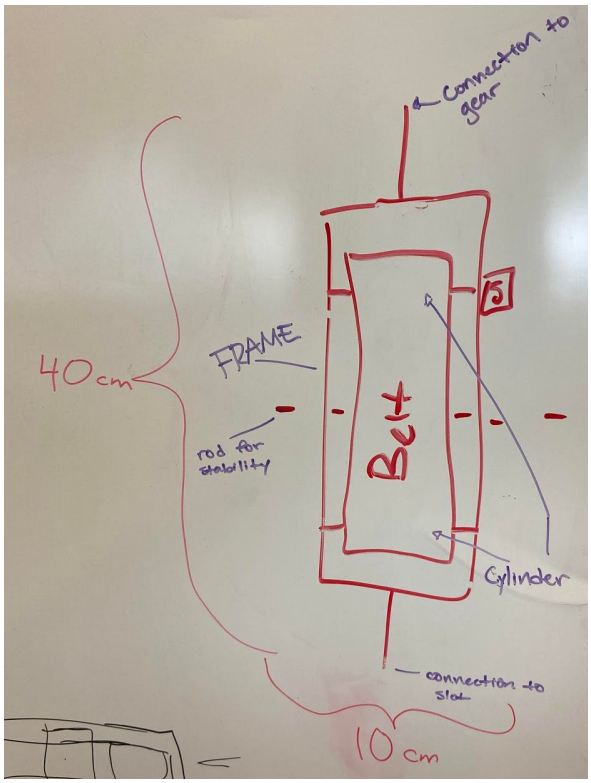

Today
March 2020
Month
MON
TUE
WED
THU
FRI
2
No School
Professional Learning Day-No School for Students
3
No School
Teacher Workday-No School for Students
Super Tuesday (regional holiday)
4
Start coding servos and photointerrupter
Start joystick code- Eve
Testing for rack and pinion
5
Connect rack+pinion and belt
Photointerrupter code
6
Troubleshooting tracks
9
10
11
12
Buttons/servos code-Elisabeth
Done with joystick code
13
Bottom box design
16
Joystick completed
17
St. Patrick's Day
18
Big box design
19
Continue bottom box design and wiring
20
All servos working
23
Finalized dimensions of the box
24
Bottom box designed and photointerrupter/servos wort
25
26
27
30
31
Apr 1
Bottom box completed
2
3
Half day
Early Dismissal followed by Professional Learning
End of Third Quarter Grading Period

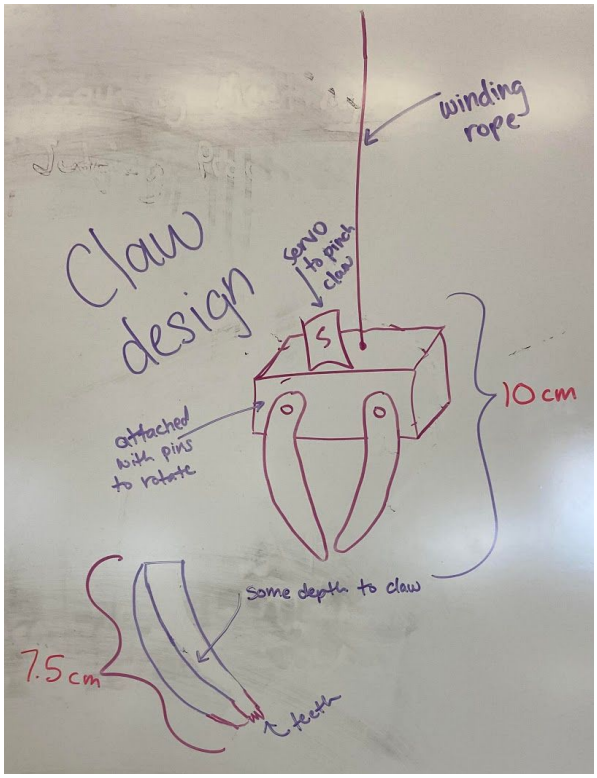

Today
April 2020
Month
MON
TUE
WED
THU
FRI
30
31
Apr 1
Bottom box completed
2
3
Half day
Early Dismissal followed by Professional Learning
End of Third Quarter Grading Period
6
Spring Break
Student Holiday-Spring Break
7
8
9
10
13
Easter Monday
14
15
Cut out box
Tax Day
16
17
Eve and Elisabeth gone
20
21
Box assembly
22
23
24
27
28
29
Wiring days!!
30
May 1

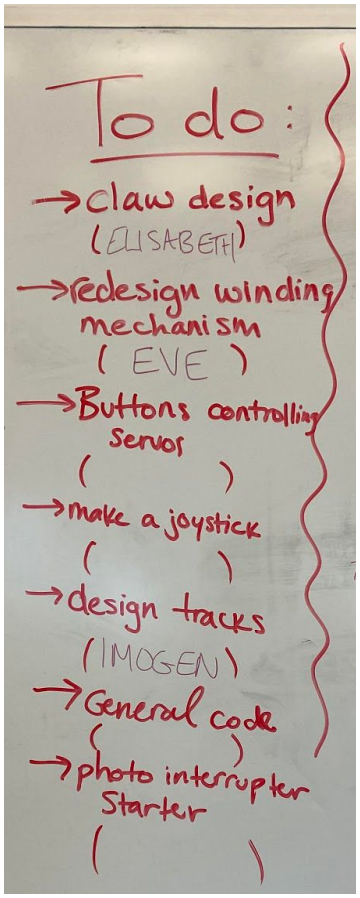

Today
May 2020
Month
MON
TUE
WED
THU
FRI
27
28
29
30
May 1
Wiring days!!
4
5
6
7
8
Wiring days!!
Cinco de Mayo
11
12
13
14
15
Project due date
18
19
20
21
22

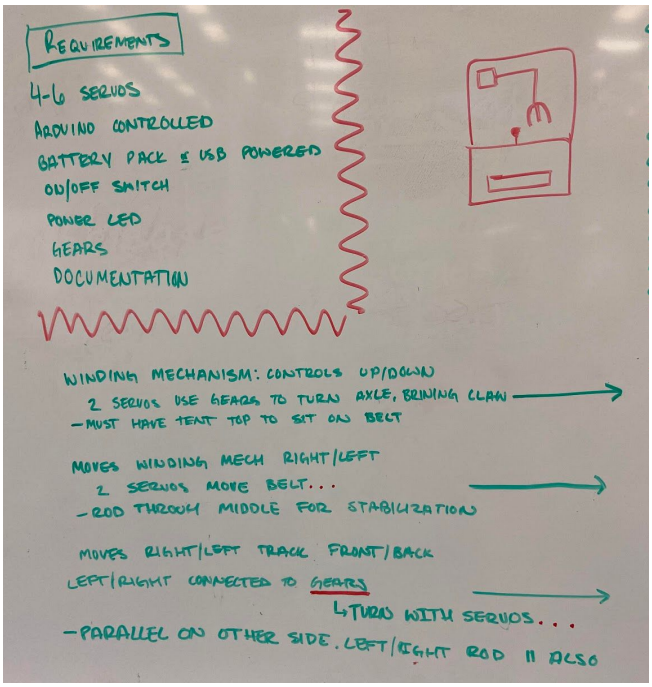

PHOTOINTERRUPTER TRIGGER START
BUTTONS CONTROL DOWN + CLOSING
+ RESET BUTTON
SERIOS 4A:
BACK/FRONT
LEFT/RIGHT
UP/DOWN BUTTON
CLOSING BUTTON
*UP/DOWN SITS ON TOP OF THE LEFT/RIGHT TRACK
UP/DOWN
LEFT/RIGHT* BELT
= FRONT/BACK* RACK + PINION
*LEFT RIGHT SITS ON TOP OF BACK/FRONT

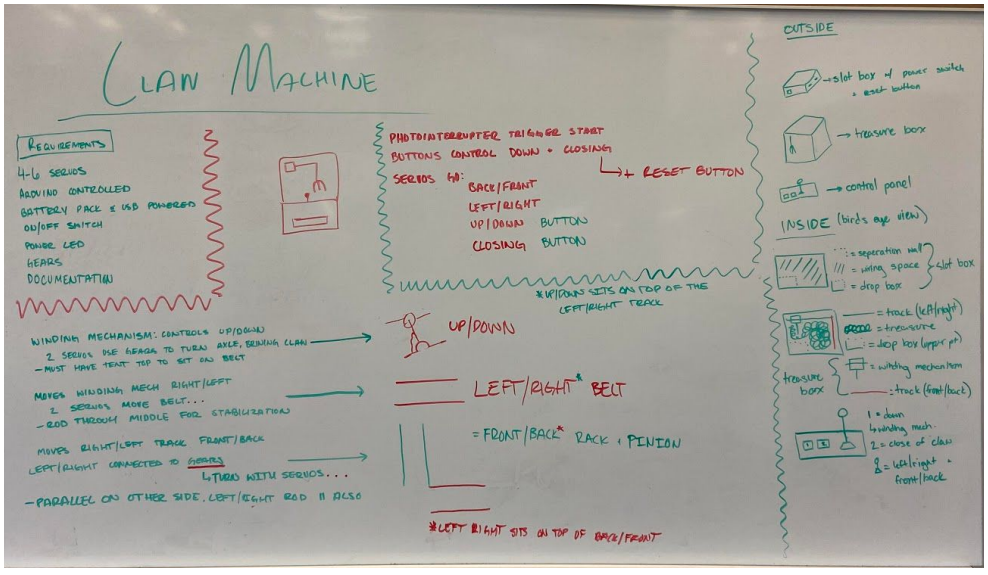

OUTSIDE
→ slot box w/ power switch + reset button
→ treasure box
→ control panel
INSIDE (birds eye view)
= seperation wall
= wiring space
= drop box
slot box
= track (left/right)
= treasure
= drop box (upper pt)
treasure box
= winding mechanism
= track (front/back)
1 = down ↳ winding mech.
2 = close of claw
3 = left/right + front/back


connection to gear
FRAME
40cm
rod for stability
Belt
Cylinder
connection to slot
10cm


Claw design
winding rope
servo to pinch claw
attached with pins to rotate
10cm
some depth to claw
7.5cm
teeth


To do:
→claw design
(ELISABETH)
→redesign winding mechanism
(EVE)
→Buttons controlling servos
( )
→make a joystick
( )
→design tracks
(IMOGEN)
→General code
( )
→photo interrupter Starter
( )


REQUIREMENTS
4-6 SERVOS
ARDUINO CONTROLLED
BATTERY PACK & USB POWERED
ON/OFF SWITCH
POWER LED
GEARS
DOCUMENTATION
WINDING MECHANISM: CONTROLS UP/DOWN
2 SERVOS USE GEARS TO TURN AXLE, BRINING CLAW
-MUST HAVE TEXT TOP TO SIT ON BELT
MOVES WINDING MECH RIGHT/LEFT
2 SERVOS MOVE BELT...
-ROD THROUGH MIDDLE FOR STABILIZATION
MOVES RIGHT/LEFT TRACK FRONT/BACK
LEFT/RIGHT CONNECTED TO GEARS
↳TURN WITH SERVOS...
-PARALLEL ON OTHER SIDE. LEFT/RIGHT ROD ‖ ALSO


CLAW MACHINE
REQUIREMENTS
4-6 SERVOS
ARDUINO CONTROLLED
BATTERY PACK & USB POWERED
ON/OFF SWITCH
POWER LED
GEARS
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PHOTOINTERRUPTER TRIGGER START
BUTTONS CONTROL DOWN + CLOSING
↳+ RESET BUTTON
SERVOS to:
BACK/FRONT
LEFT/RIGHT
UP/DOWN BUTTON
CLOSING BUTTON
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