

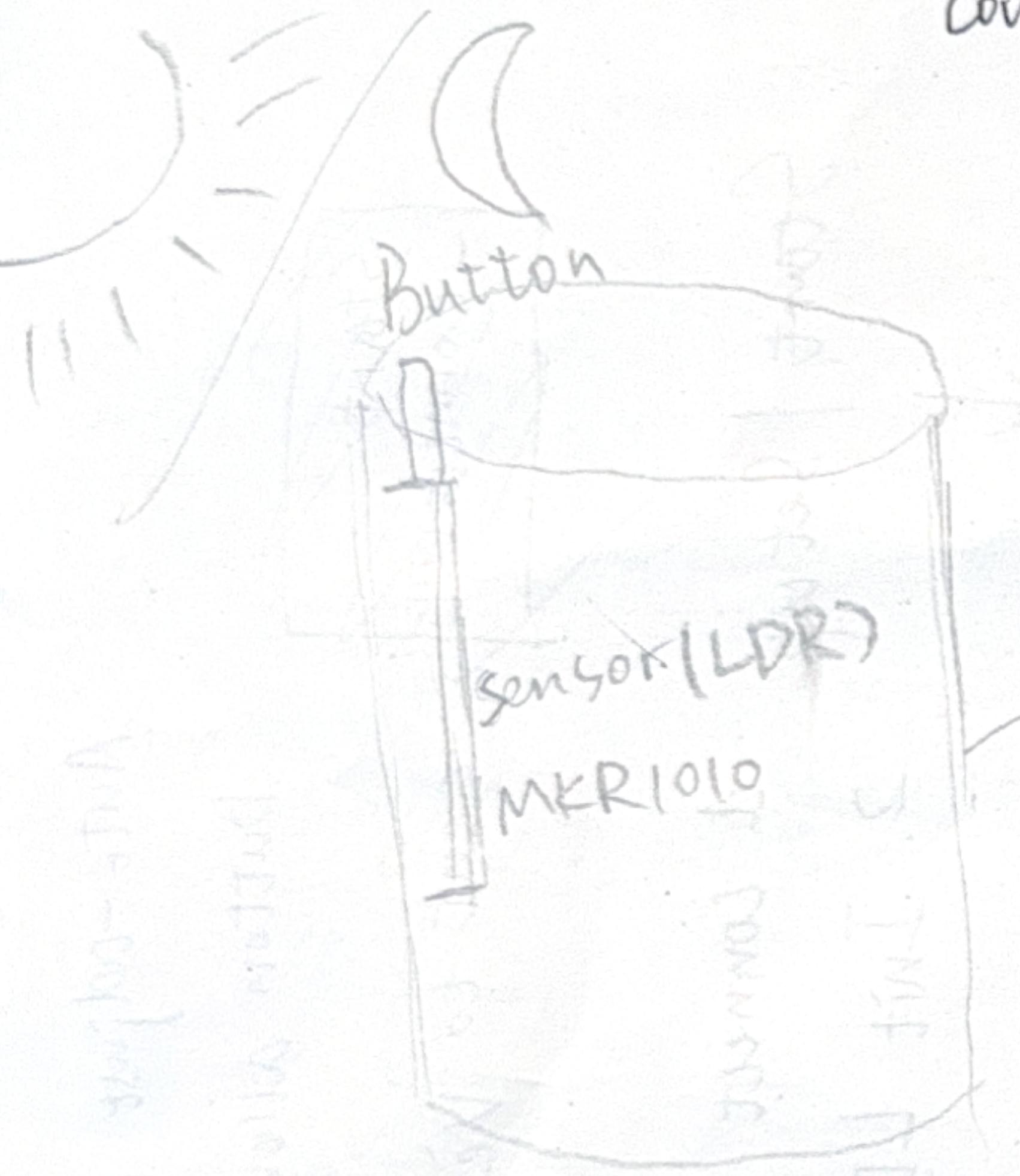
What Adaptive & Interactive Lamp.

Why

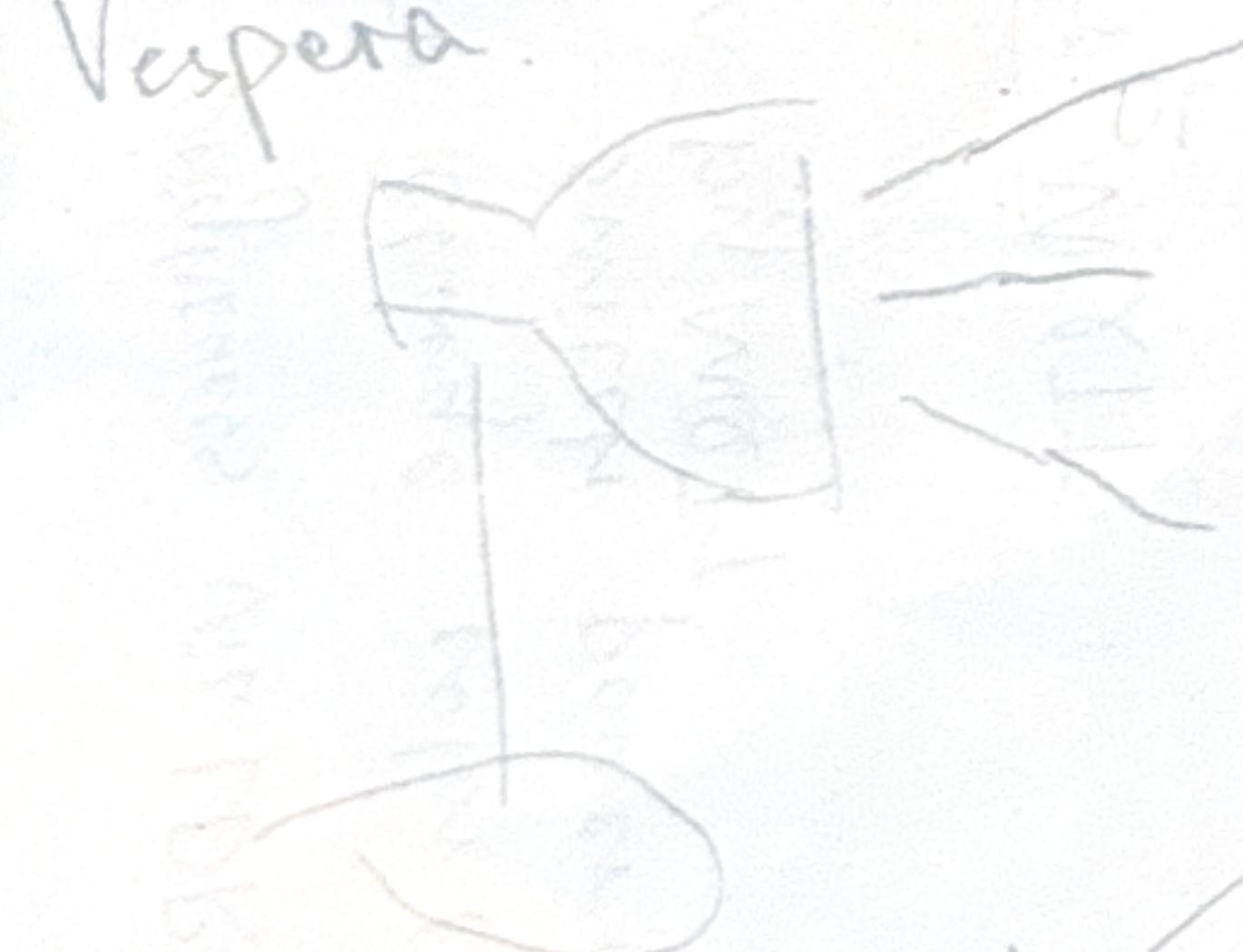
A small IoT Lighting system that both responds the env and user.

controller

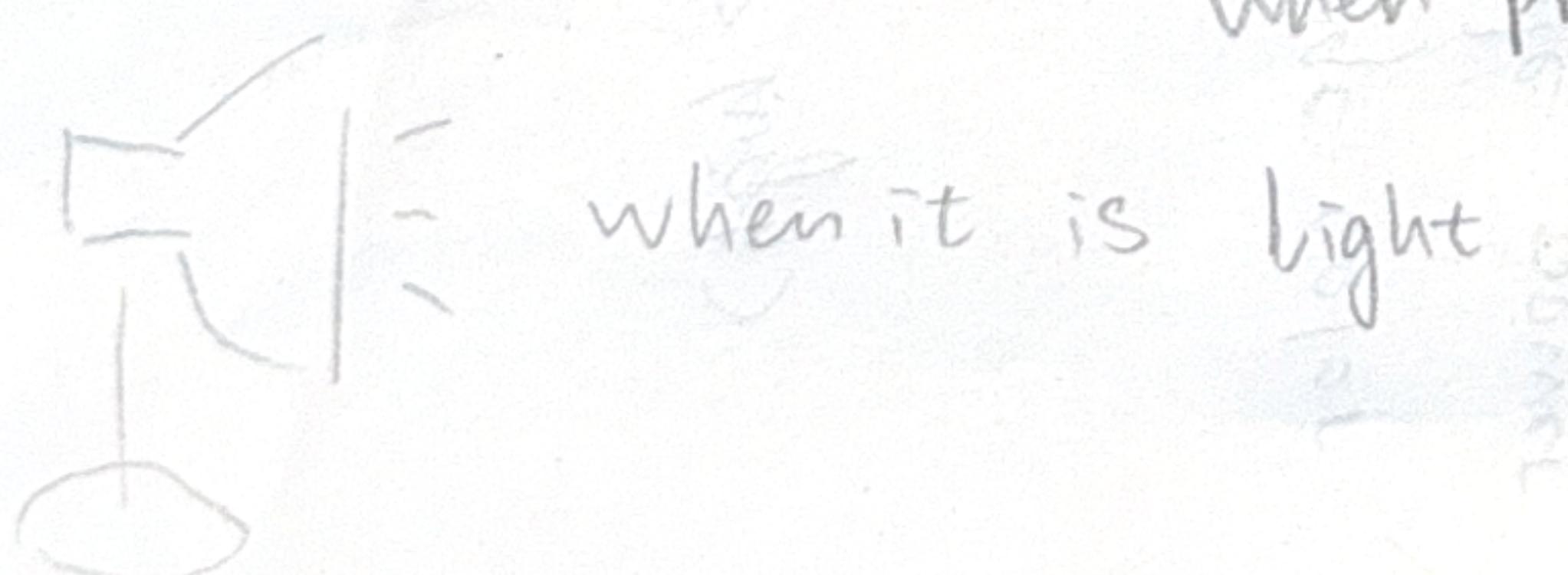
Vespera



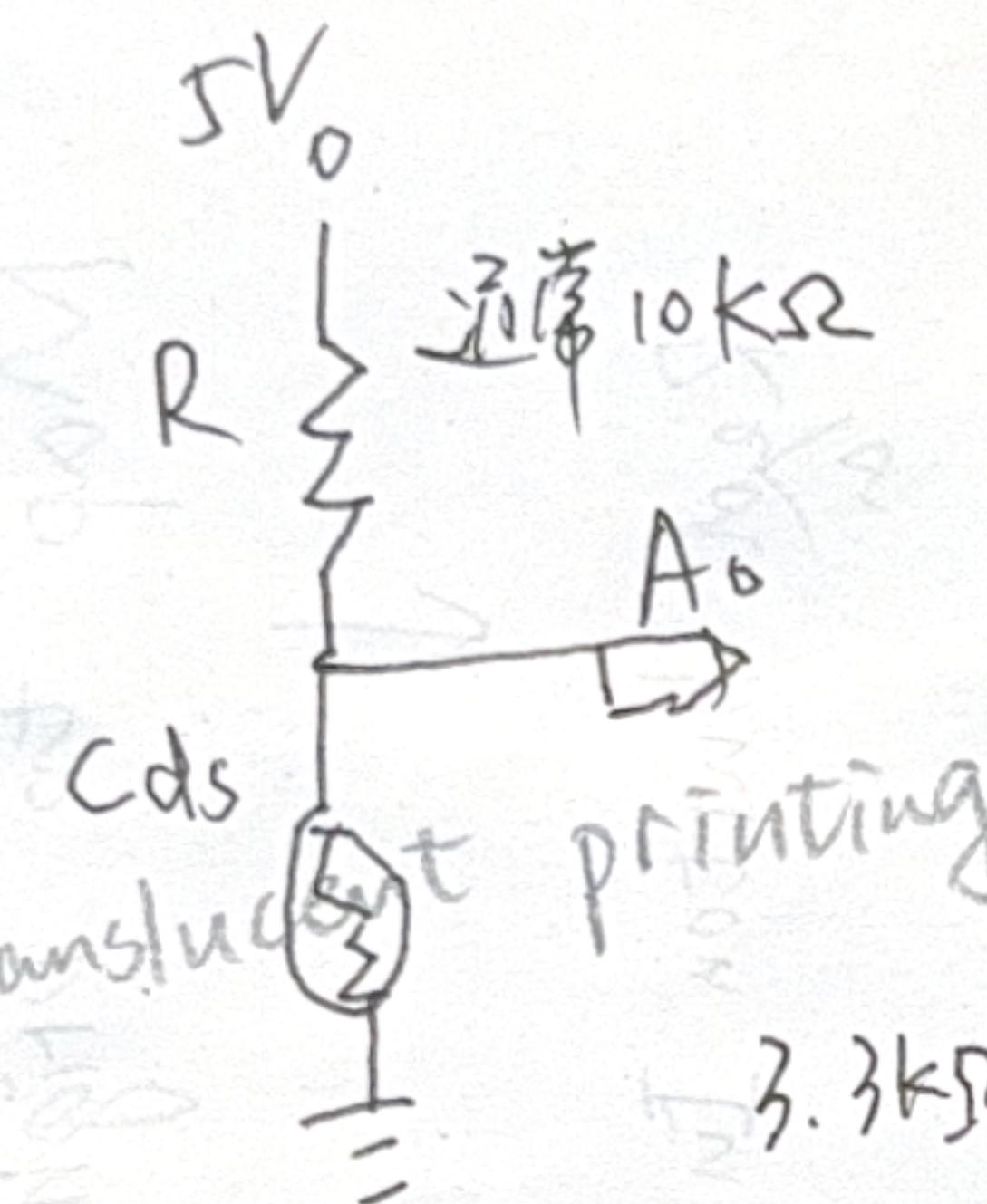
Vespera



when it is dark



when it is light



$$V_{out} = 5V \times \frac{Cds}{R+Cds}$$

$$\text{printing paper} = 5V \times \frac{3300\Omega}{1000\Omega + 3300\Omega} \approx 0.25V$$

"Evening"

Day to Night

How

WIFI

MKR1010
LDR
Button

MQTT →
(mqtt.cetools.org)

push message (RGB)

Topic: (.student/)

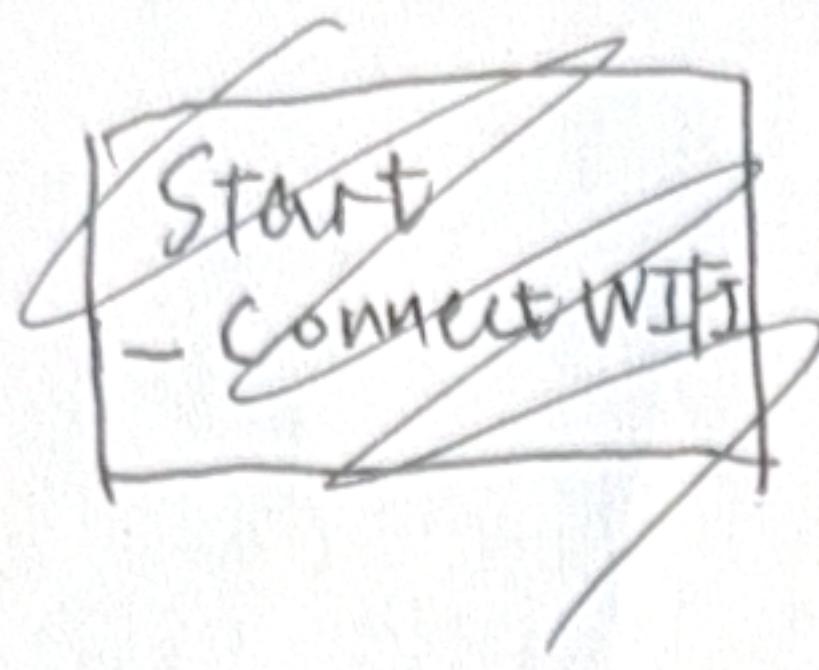
CASA0014/

Luminaires/

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visualis
Lights change

Auto-adjust light brightness via LDR sensor
button allows to change color (short press)
switch power (long press)
sent to Vespera by MQTT



Start / Setup
↓
1. Connect WiFi/MQTT
2. Init LDR & Button

Read LDR value (bright → low, dark → high)
Map to brightness
↓

Red button Input (short press → change color
long press → toggle power)
↓

Is power on? → Yes → Send RGB + Brightness
~~(local feedback)~~ ↳ No → Send OFF signal

↓
Update onboard LED (local feedback).
Show system state

Loop back