

Light Tomorrow 2023

LIGHT TOMORROW

Innovative Lichtsteuerung





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LIVE DEMO

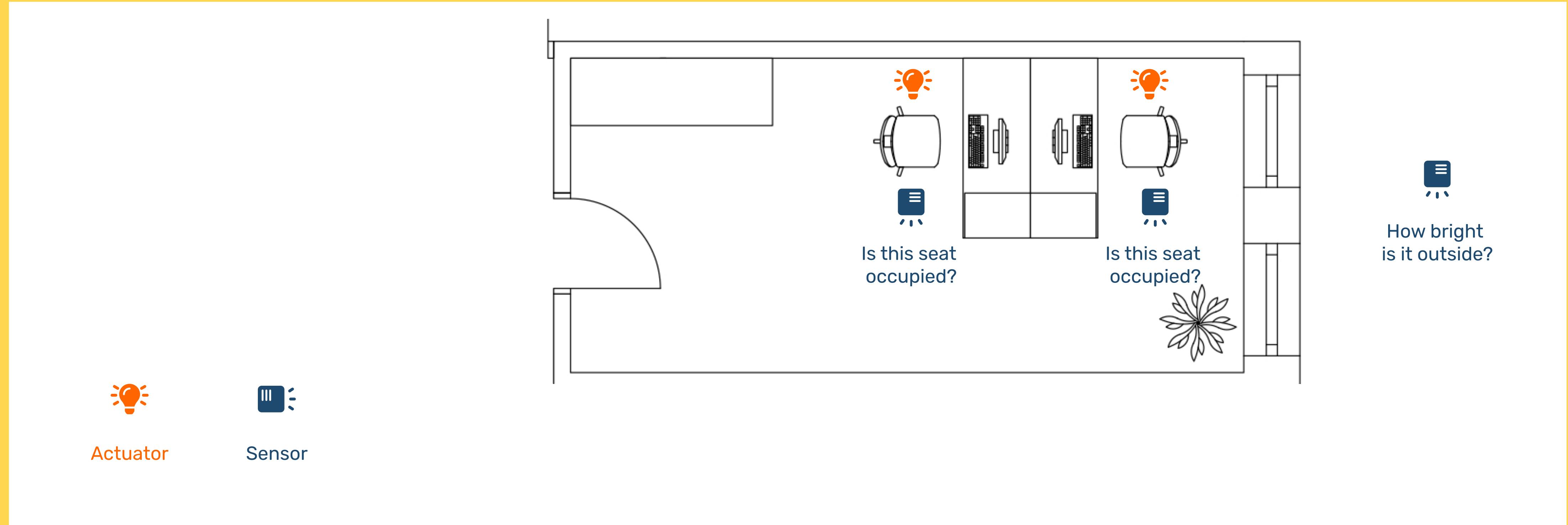
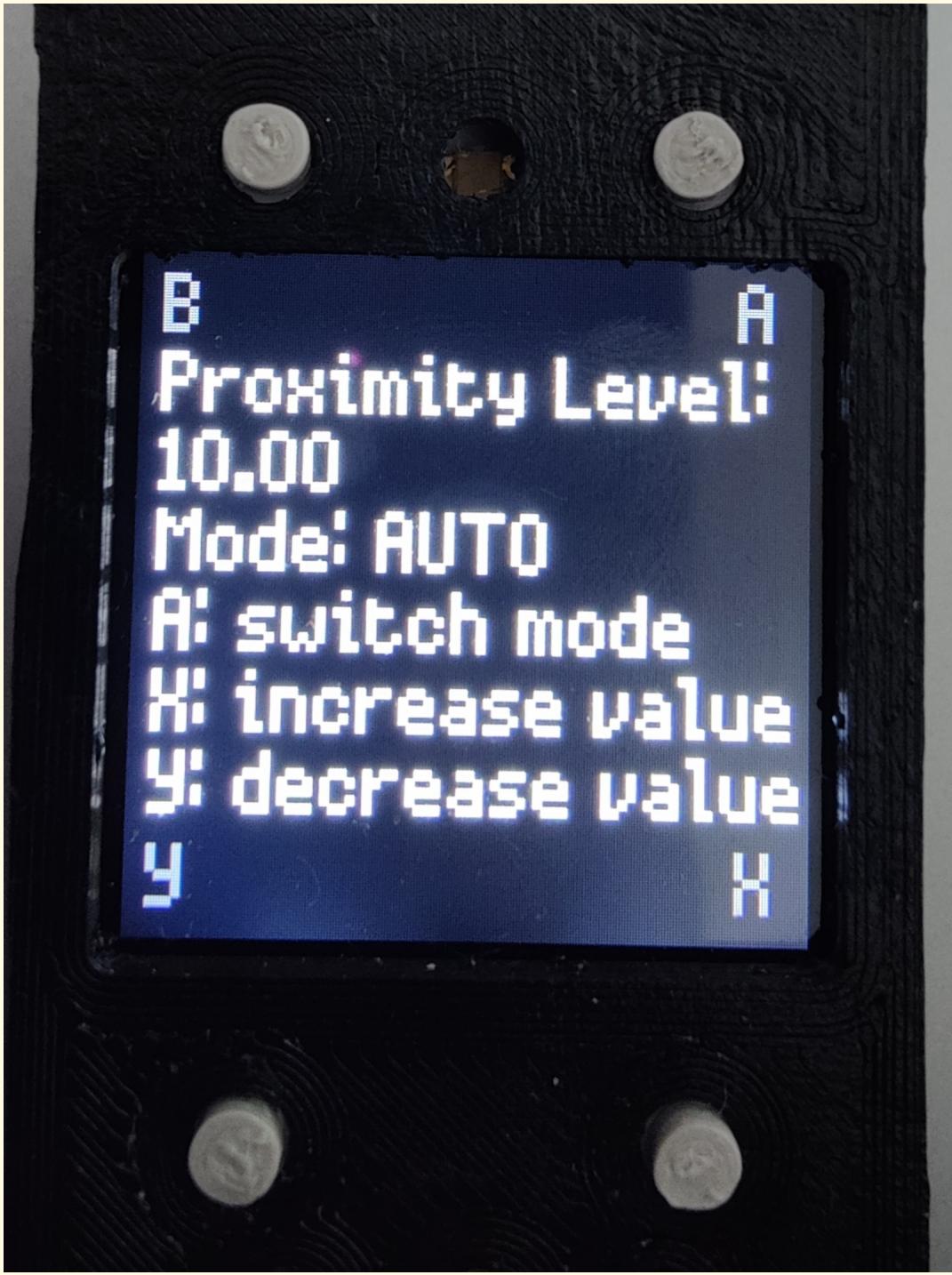


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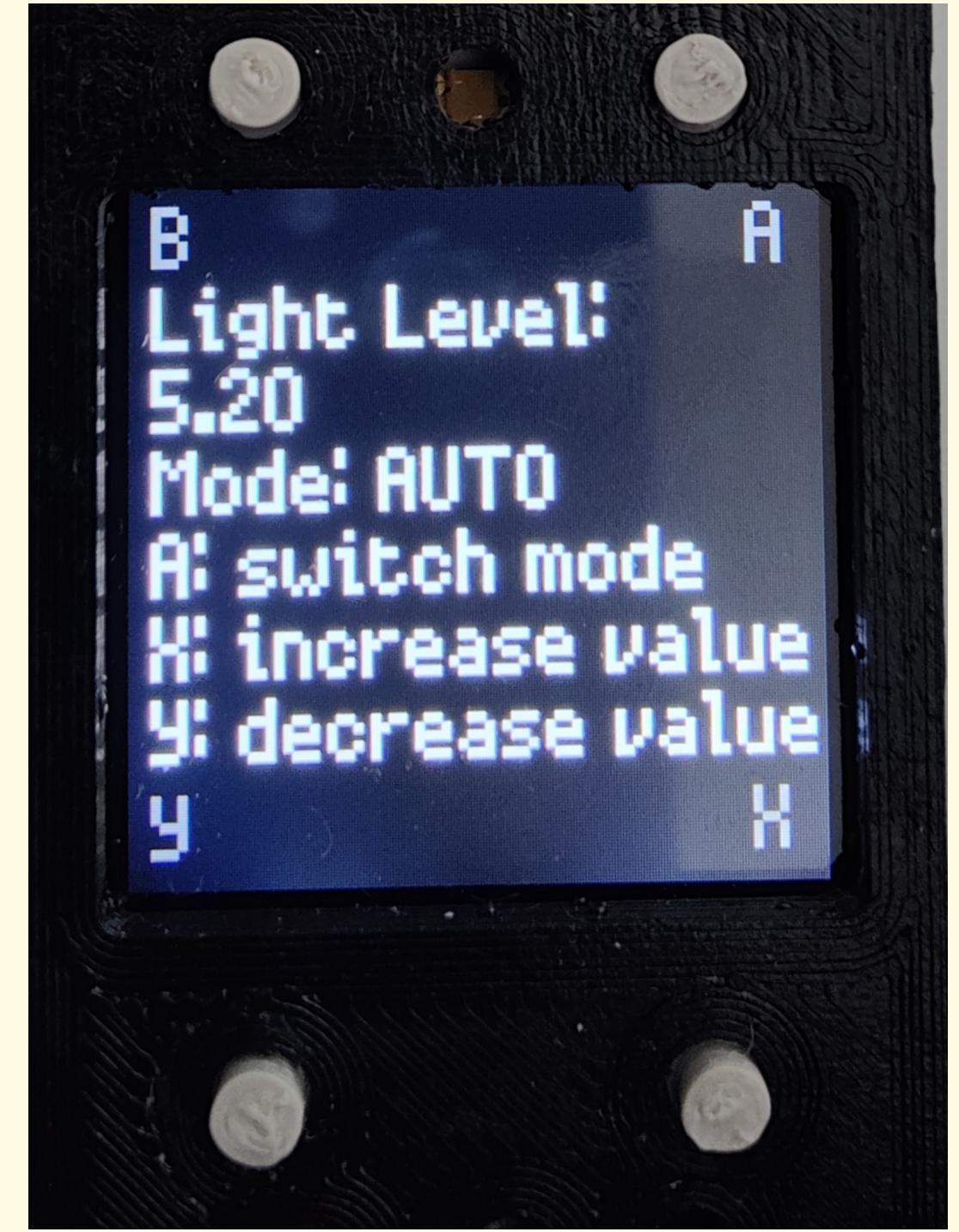
OUR DEVICES



2x Proximity Sensor
Inside

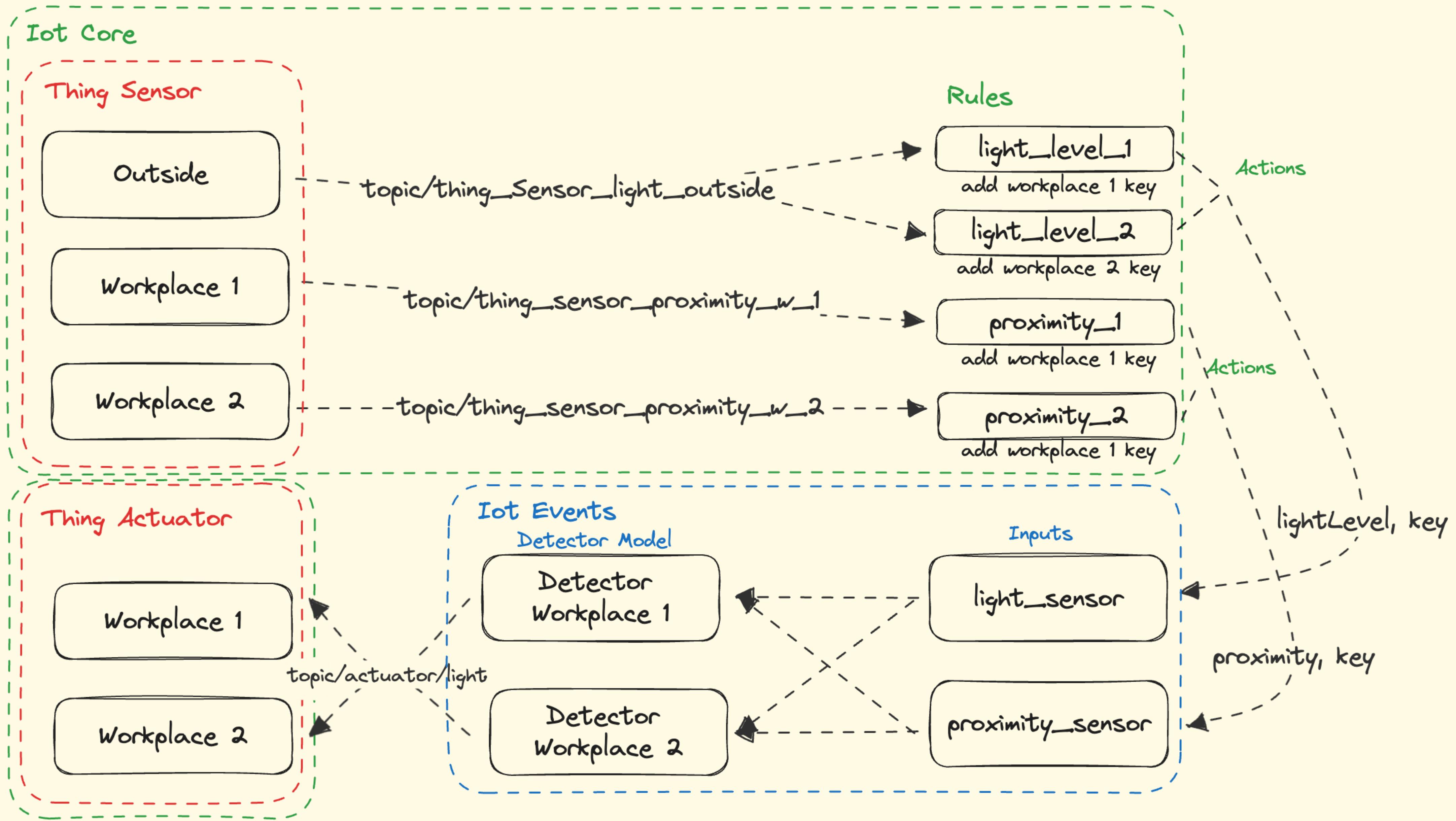


2x Light Actuator
Inside

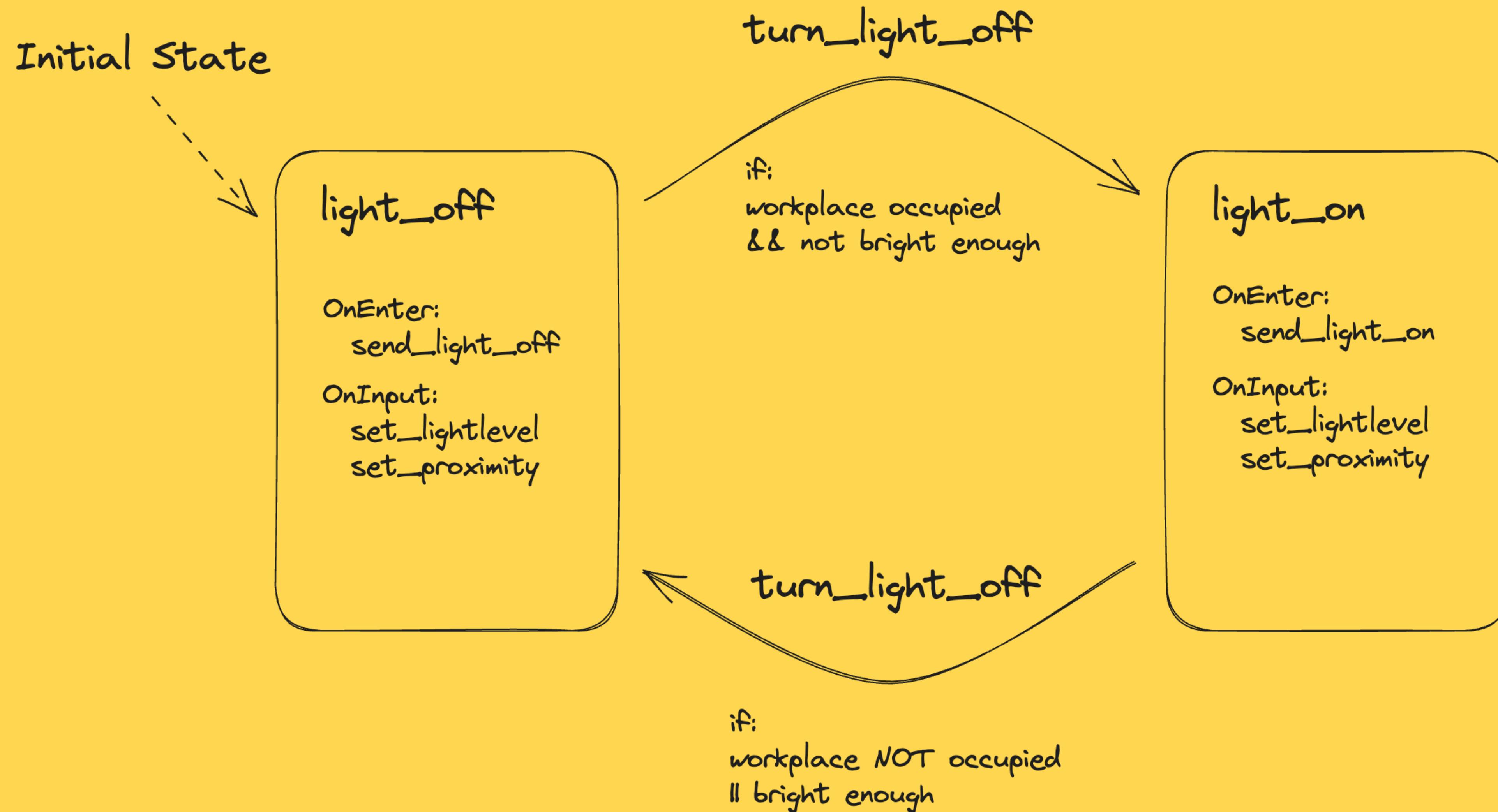


Light Sensor
Outside

FINAL ARCHITECTURE & DATA FLOW



DETECTOR MODEL BUSINESS LOGIC



TERRAFORM HIGHLIGHTS



Terraform Modules

Thing Module



AWS CloudFormation

Detector Model
& Inputs

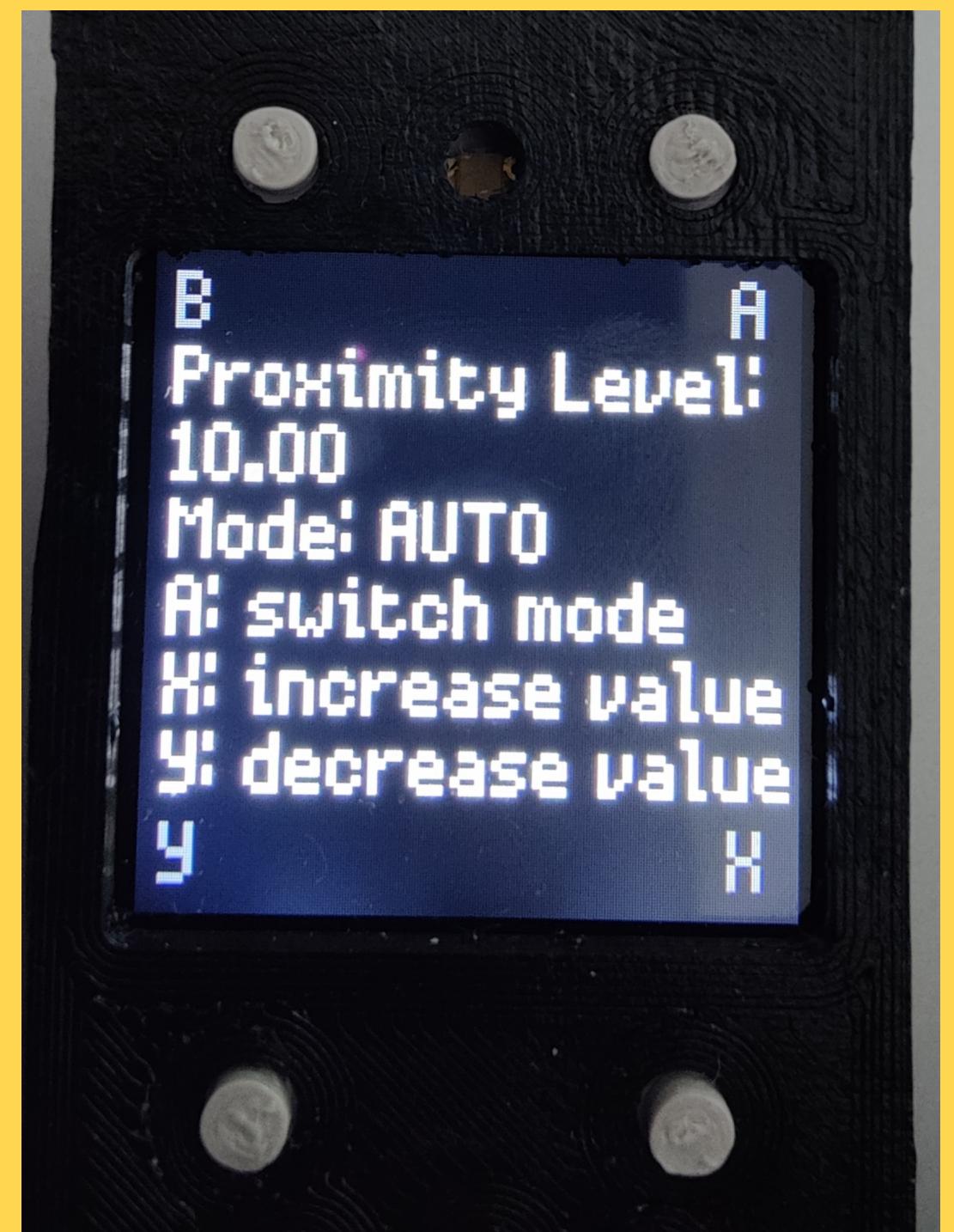


**Generate Files
For Packaging**

Certifactes and
Gateway envs

GATEWAY SOFTWARE

```
export abstract class SensorService {  
    protected mode: SensorMode;  
    protected currentValue: number;  
    abstract thingLabel: string;  
    abstract payloadKey: string;  
  
    constructor(protected iotee: IotEE, protected mqttService: MqttService) {  
        this.mode = DEFAULT_MODE;  
        this.currentValue = 0;  
  
        this.setup();  
    }  
}
```



Dependency Injection & Abstract sensor class

Simple UX

PIPELINE

```
167 aws_iot_topic_rule.proximityRule01: Creating...
168 aws_iot_topic_rule.lightLevelRule01: Creating...
169 aws_iot_topic_rule.proximityRule02: Creating...
170 aws_iot_topic_rule.lightLevelRule02: Creation complete after 0s [id=lightLevelRule02]
171 aws_iot_topic_rule.lightLevelRule01: Creation complete after 0s [id=lightLevelRule01]
172 aws_iot_topic_rule.proximityRule01: Creation complete after 0s [id=proximityRule01]
173 aws_iot_topic_rule.proximityRule02: Creation complete after 0s [id=proximityRule02]
174 Apply complete! Resources: 55 added, 0 changed, 0 destroyed.
175 Outputs:
176 iot_endpoint = "a2scw8p2blnw89-ats.iot.eu-central-1.amazonaws.com"
177
178 Saving cache for successful job 00:01
179 Creating cache infrastructure-protected...
180 WARNING: gateway/node_modules/: no matching files. Ensure that the a
```

Duration: 1 minute 37 seconds

Finished: 4 minutes ago

Queued: 0 seconds



Timeout: 1h (from project)

Runner: #31 (e7e1c2da4) jack

Job artifacts

These artifacts are the latest. They will not be deleted (even if expired) until newer artifacts are available.

[Download](#)

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Commit [81ad35e7](#)

Merge branch 'feature/23-seperate-pipeline' into 'main'

CHALLENGES & LEARNING DEVICES

- Sometimes, sensor reading takes so long that it results in an RxJS timeout.

```
at AsyncScheduler.flush (/Users/marvinpfau/Documents/_HdM/Semester 7/IoT/lighttomorrow/gateway/node_modules/  
rxjs/src/internal/scheduler/AsyncScheduler.ts:40:27)  
at listOnTimeout (node:internal/timers:559:17)  
at processTimers (node:internal/timers:502:7)  
message: 'Timeout has occurred',  
info: { meta: null, lastValue: null, seen: 0 }  
}
```

CHALLENGES & LEARNING AWS

- Some Services require delay in setup
- Challenging Docs
- Limited StackOverflow responses
- Long deletion time
- Vast number of services

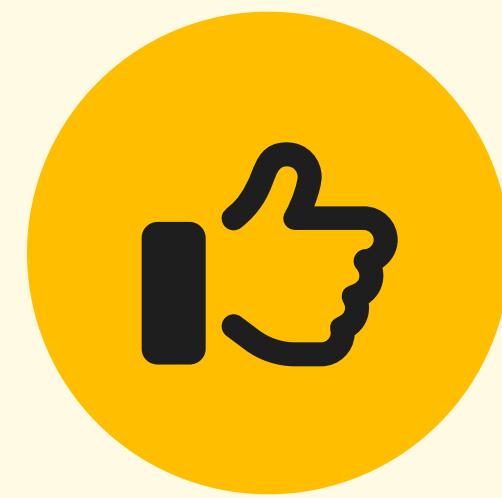
CHALLENGES & LEARNING

TERRAFORM

- ➔ Detector Model not supported
 - complex workaround

DETECTOR

- ➔ Only spawns if all types of input received.



WE LEARNED A LOT!