



Cheers First Sprint

Master Practical: Edge Computing and the Internet of Things - Team GAD

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Planned tasks for Task 1

- Basic Prototype of every component
 - Hardware
 - Gateway
 - Cloud
- Define Hardware dimensions (for the improved prototype in the next sprint)

Current Hardware Stack

- Raspberry PI as Gateway
- ESP32
- LED
- NFC Module (PN532)

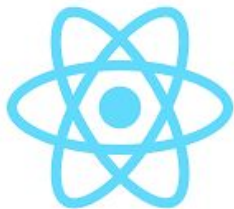




Software Stack

Cloud:

- Firebase
- React Frontend



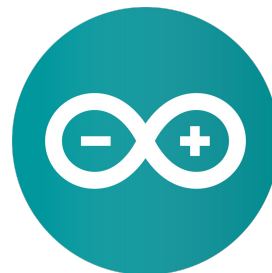
Gateway:

- React Frontend
- Golang Backend
- Mosquitto



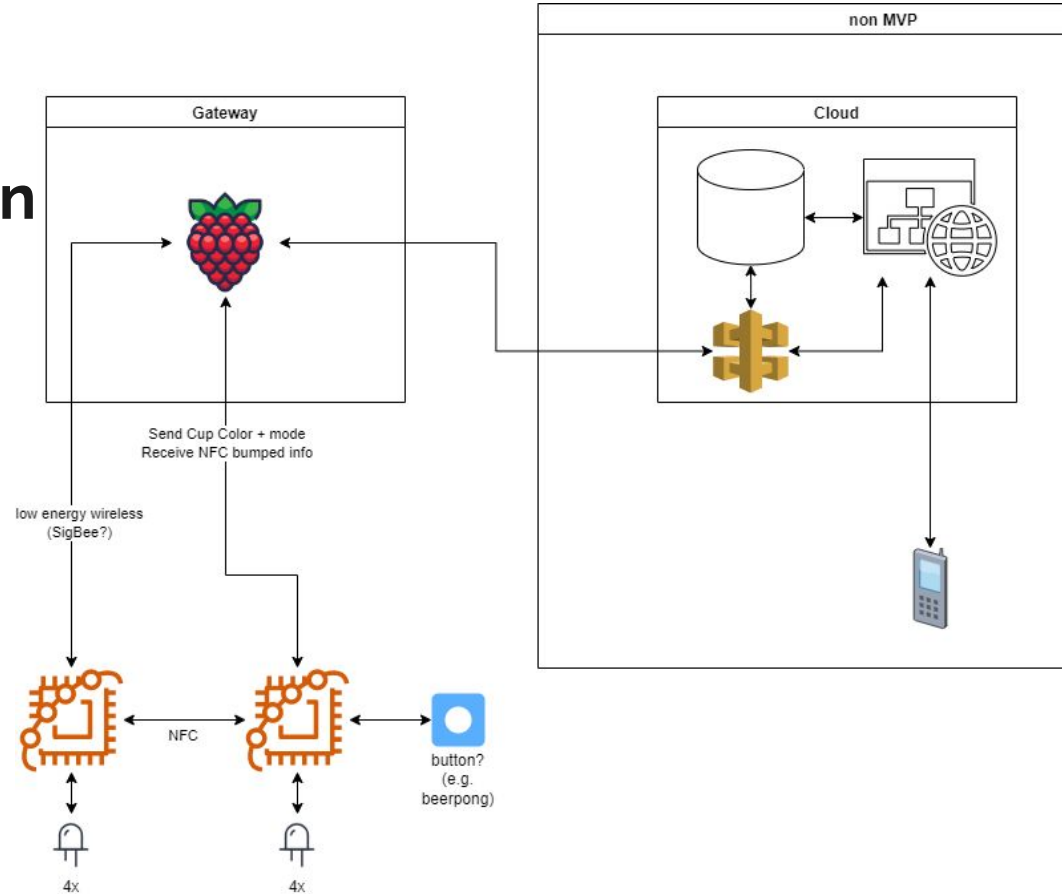
Cup:

- Arduino



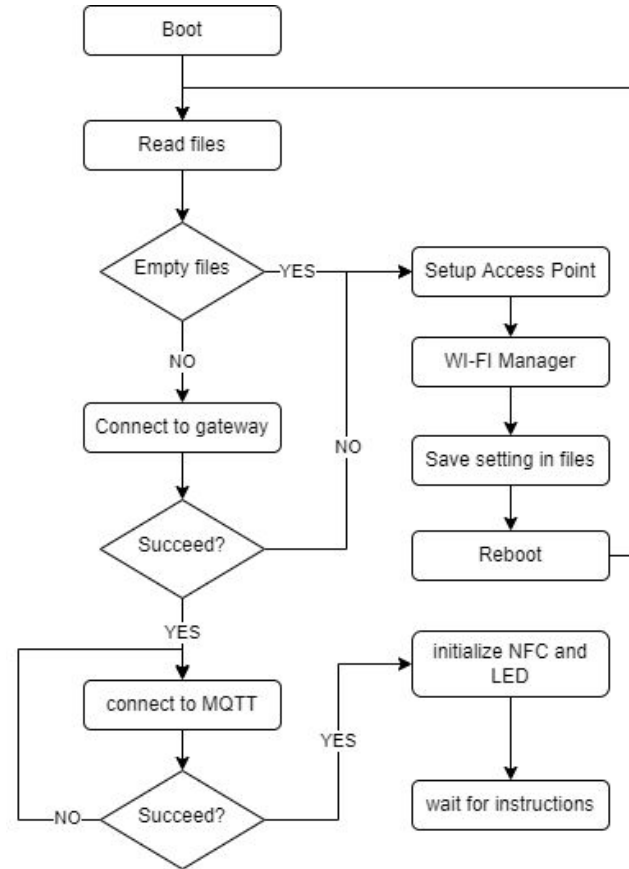
Current Communication

- Gateway <-> Cup
 - WI-FI (MQTT)
- Cup <-> Cup
 - NFC
- Gateway <-> Cloud
 - REST API
- User <-> Cup
 - Visual



Flow Charts of a Cup

- Boot
 - connect to gateway
 - or
 - create AP and wait for configuration
- Listen to instructions from the gateway on MQTT





DEMO



Problems in this Sprint

- NFC module is not 100% reliable
 - often needs a reset
 - => add software reset, if it does not work anymore.
- NFC and MQTT listening and LED control does not work at the same time.
 - => maybe add threads



Plans for the next sprint

- Improve Hardware Prototype
 - build 3D printed case
 - fix NFC reliability
 - add threads
- Expand gateway functionalities
- Expand cloud functionalities
 - different user and provider accounts