



Cheers initial idea

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

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Sketch

- Addon for a glass
 - RGB LED
 - NFC
 - waterproof
 - detachable
- Many advantages for the user and the host
- Small profile to not be bulky





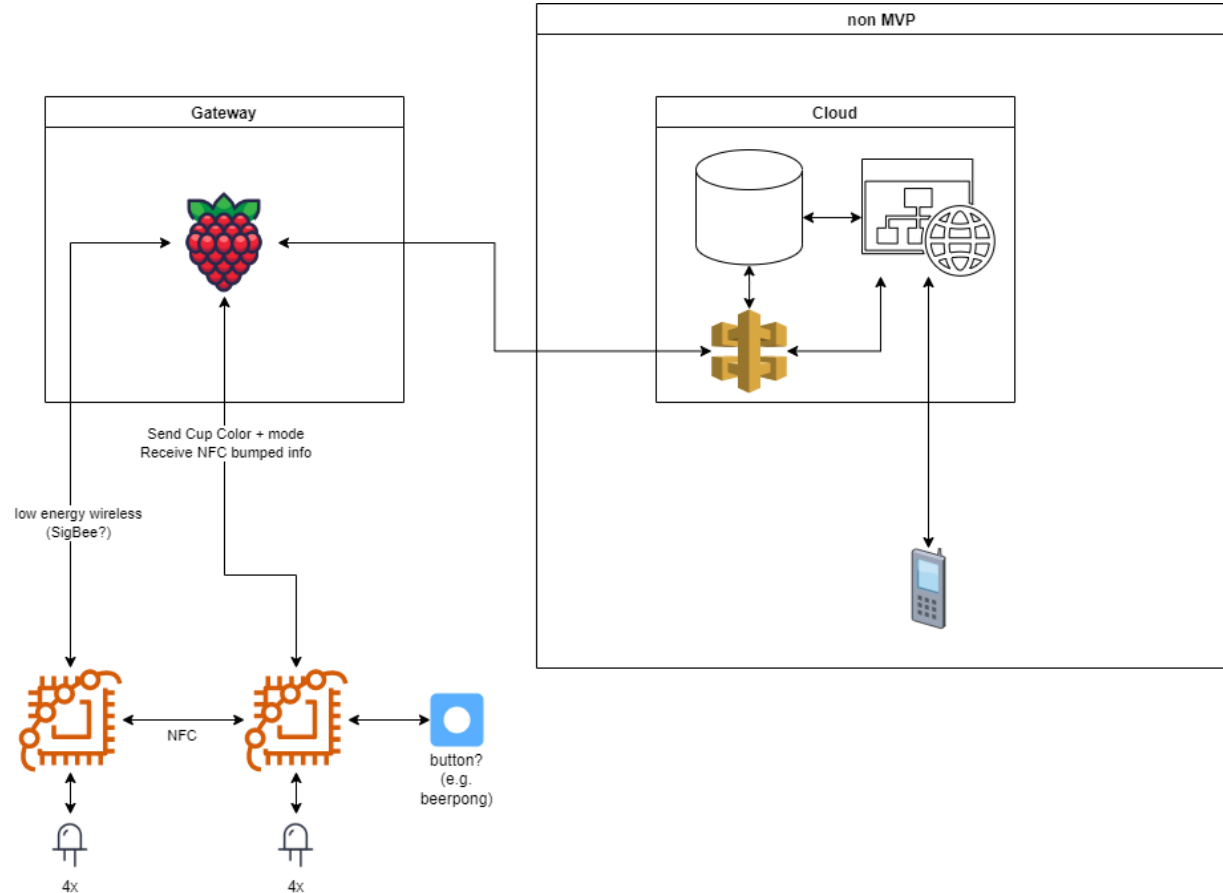
Advantages

| User | Host |
|---|--|
| <ul style="list-style-type: none">• Win free drinks• Have fun playing games• Pay at the end | <ul style="list-style-type: none">• User data & analytics• Consumption tracking (preorder dynamic amounts)• Entice customers (increase users + #drinks per person) |

Communication

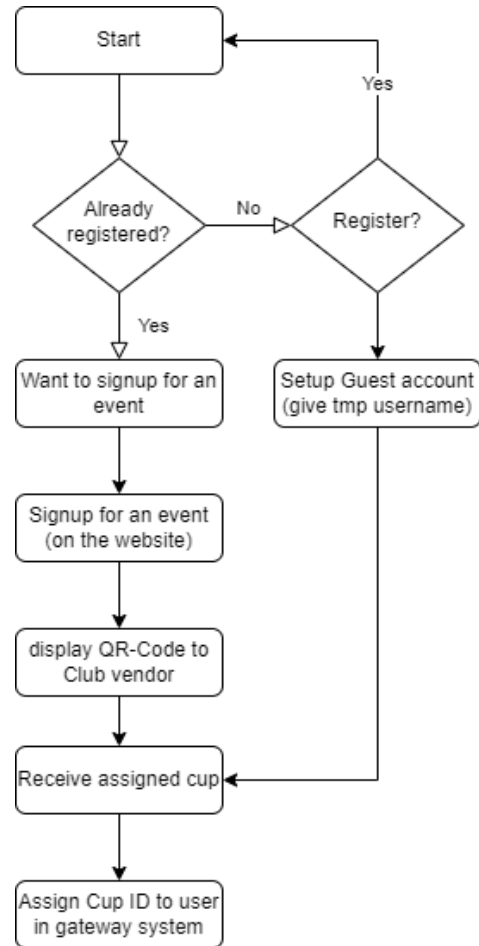
- Gateway <-> Cup
 - ZigBee
- Cup <-> Cup
 - NFC
- Gateway <-> Cloud
 - REST API
- User <-> Cup
 - Visual & Touch

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- Light detectors <-> Cups
(for top-down club lights)



Sign Up Flowchart

- Personal and Guest account
 - Data from old events in personal account
- Simple cup assignment





Features

- Games
- Teampartner assignment
- Alcohol “promille” tracking
- Analytics
 - Movement over time
 - How much alcohol per day & per user per day
 - what drinks how much (most popular..)
 - Host can buy appropriate amounts & promote the right drinks
- Socialize
- New & "cutting-edge", different
- Cloud profile to save data over many bar visits (+ social media features: rating, sharing..)
- Pay digitally
- Leaderboards for the evening (also for non-drinkers; beerpong etc. also count towards points..)
- Winning = free drinks

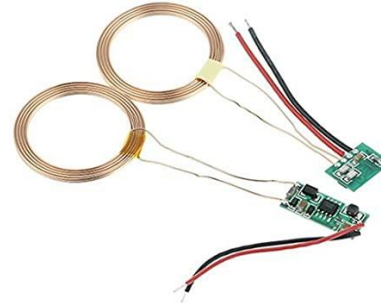


Hardware requirements

- Battery for the entire event (approx. 12 hours)
- Fast connection between cup and gateway
- Entire event area should be covered with the connection
- Waterproof and as small as possible.

Hardware

- Cloud
 - Firebase
 - Gateway
 - Raspberry Pi
 - ZigBee Module
 - Cup
 - NFC RC532 Module
 - ESP32 H2 (with onboard ZigBee module)
 - Inductive charger and battery
 - RGB LED
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- Light detectors
 - Camera





Hardware

zigbee-gateway:

https://www.reichelt.de/zigbee-gateway-raspbee-ii-raspbee-ii-p271570.html?&trstct=pos_3&nbc=1

[https://de.rs-online.com/web/p/entwicklungstools-kommunikation-und-drahtlos/1840473?cm_mmc=DE-PLA-DS3A-_google-_PLA_DE_DE_Raspberry+Pi+%26+Arduino+und+Entwicklungstools-_\(DE:Whoop!\)+Entwicklungstools+Kommunikation+und+Drahtlos-_1840473&matchtype=&aud-813230962291:pla-312891338560&gclid=Cj0KCQjwg_iTBhDrARIsAD3Ib5gYa6ShVF6PonOn-JYxzoEk949j46ytBVKVxIPsWjzavjCwSjzeVrUaAt5_EALw_wcB&gclsrc=aw.ds](https://de.rs-online.com/web/p/entwicklungstools-kommunikation-und-drahtlos/1840473?cm_mmc=DE-PLA-DS3A-_google-_PLA_DE_DE_Raspberry+Pi+%26+Arduino+und+Entwicklungstools-_(DE:Whoop!)+Entwicklungstools+Kommunikation+und+Drahtlos-_1840473&matchtype=&aud-813230962291:pla-312891338560&gclid=Cj0KCQjwg_iTBhDrARIsAD3Ib5gYa6ShVF6PonOn-JYxzoEk949j46ytBVKVxIPsWjzavjCwSjzeVrUaAt5_EALw_wcB&gclsrc=aw.ds)

NFC

<https://funduinoshop.com/elektronische-module/wireless-iot/rfid-nfc/pn532-nfc-rfid-v3-modul-fuer-arduino-und-co>.

ESP32 H2

https://www.reichelt.de/entwicklungsboard-esp32-s2-wrover-esp32s2saola1r-p311737.html?PROVID=2788&gclid=Cj0KCQjwg_iTBhDrARIsAD3Ib5hVtc1UQEVQipo8DqaaRx262EwxetIFeksepUYV2LHksDIqIpSFXHYaAqfdEALw_wcB

Inductive charger

<https://www.digikey.de/de/products/detail/seeed-technology-co.,-ltd/106990017/5487514>