



Smart city tiles

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Overzicht

- Probleemstelling
- Deelproblemen
- Abstracte oplossing
- Software Analyse
 - Flowchart, Mockup, State diagram
- Hardware Analyse
 - Blokdiagram, componentenlijst + argumentatie

Probleemstelling

- Wat
- Hoe
- Waarom



Deel problemen

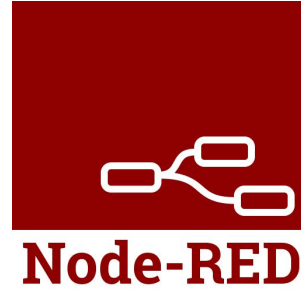
- Smart tegels
- Smart wagen
- Web interface

Abstract oplossing

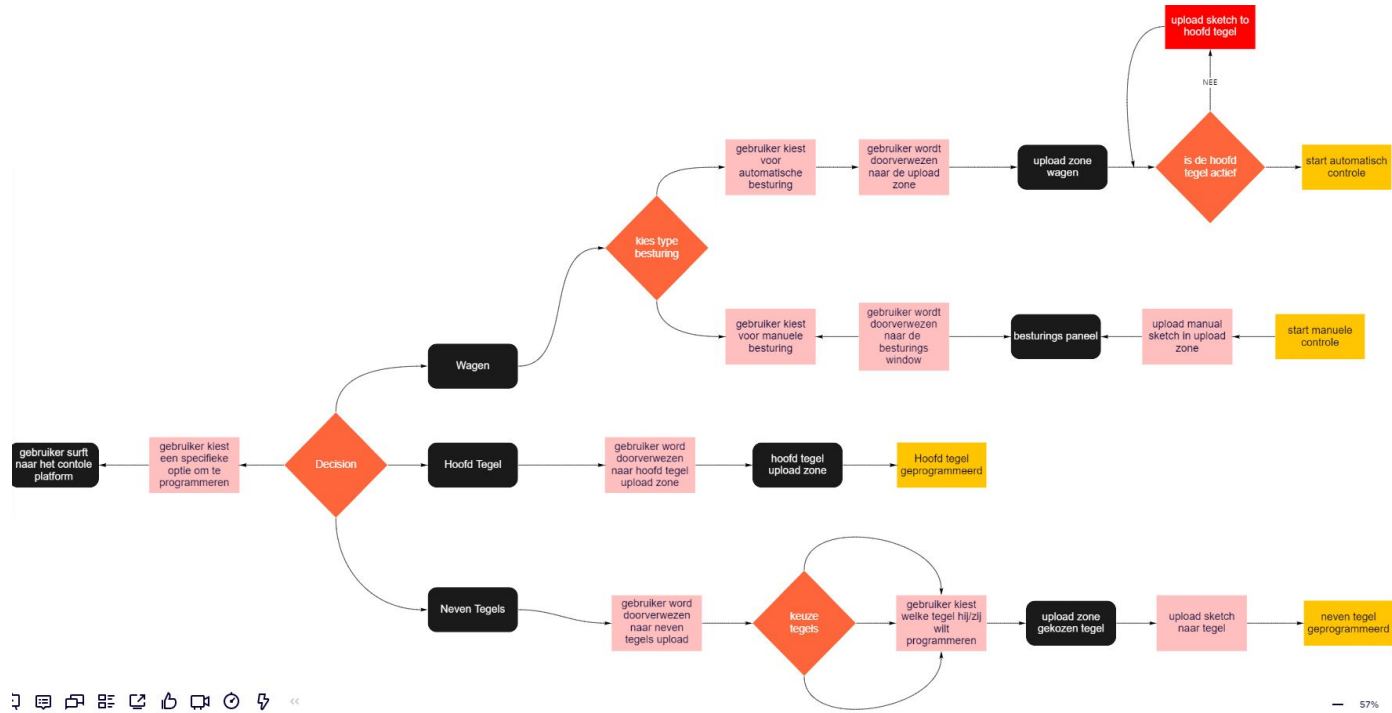
- Communicatie over het internet
- Remote uploaden
- Esp32
- Accelerometer
- Ultrasonic sensor
- Kleuren sensor

Software Analyse

- Te gebruiken technologieën:
 - Nodered (backend)
 - MQTT (end-to-end berichten)
 - Nodered (front-end)
 - MongoDB (database)



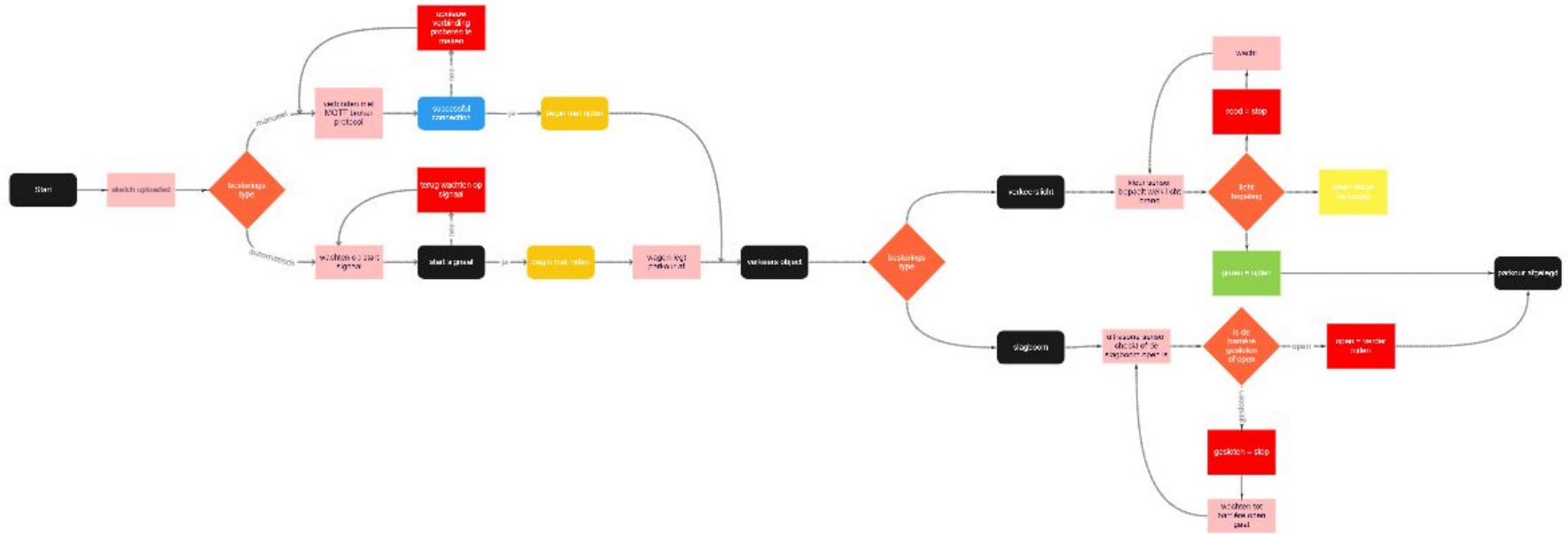
Software Analyse: web flowchart



D

https://miro.com/app/board/o9J_LtyLiHc=?invite_link_id=641280589442

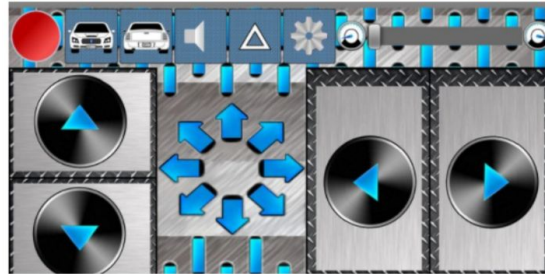
Software Analyse: wagen flowchart



Mock-up

choose control type

manuel control



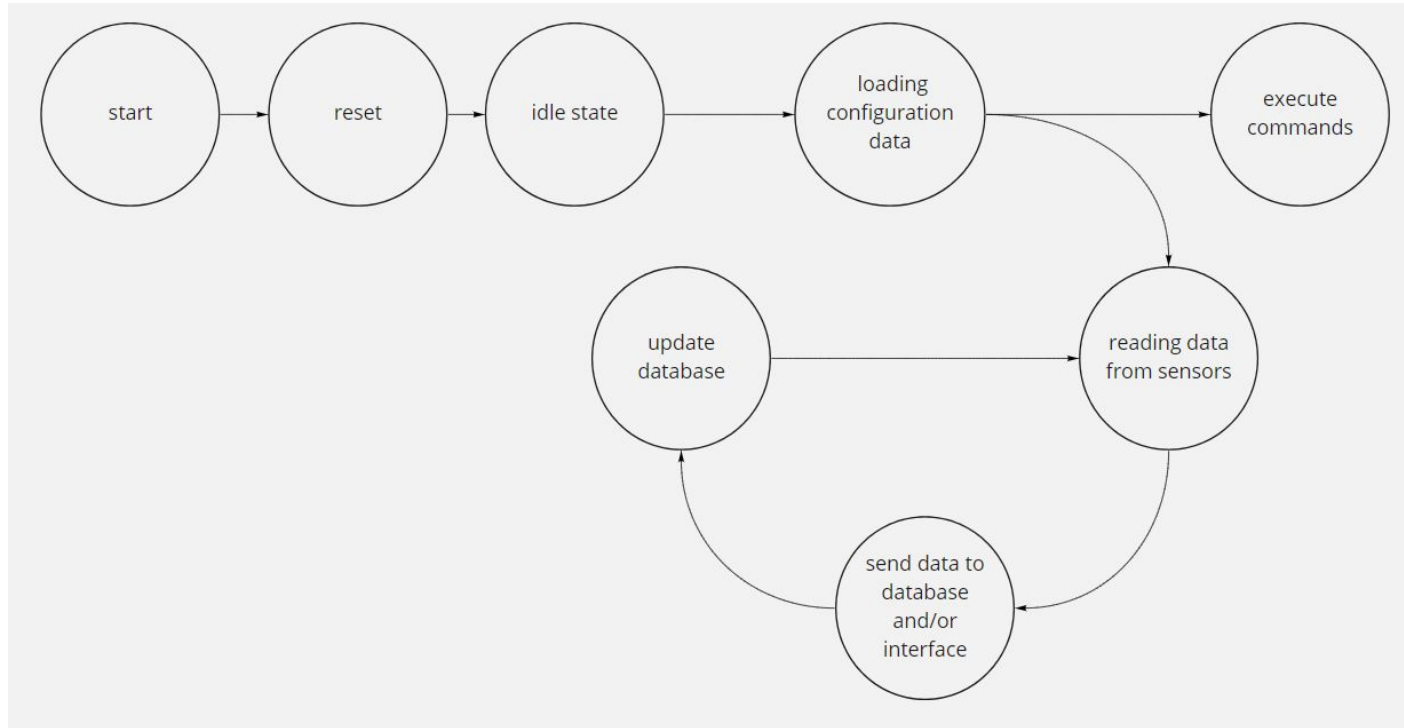
automatic control

uploadzone

D

<https://ap-it-gh.github.io/sct-docs/#/analyse/software-analyse/mockup>

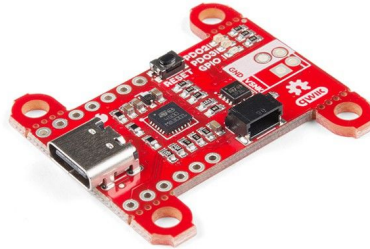
State Diagram



Hardware analyse

Smart Tegel - Hoofdtegel

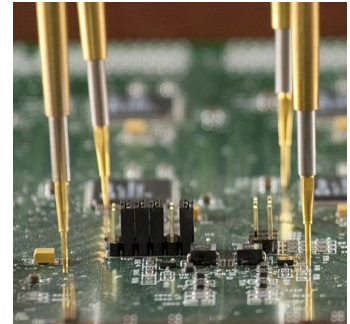
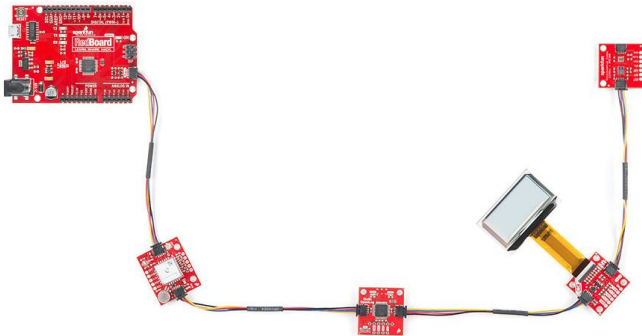
- USB 3 PowerDelivery (Voeding)
- ESP32 (μ C)



Hardware analyse

Smart Tegel - Gewone tegel

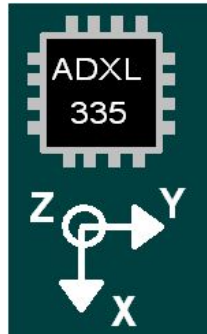
- ESP32 (μ C)
- Servomotor (Aansturing slagboom)
- LED's (stoplicht)
- Voeding connectors(Pogo pins / Quick connectors)



Hardware Analyse

Smart Wagen

- ESP32 (μ C)
- DC Motors met decoder
- Accelerometer (snelheid meten)
- Ultrasonic sensor



A close-up photograph of a computer motherboard. A piece of torn, light-colored paper is placed diagonally across the center of the board. On the paper, the words "ANY" and "QUESTIONS?" are printed. "ANY" is in a bold, black, sans-serif font, and "QUESTIONS?" is in a larger, bold, yellow, sans-serif font. The motherboard itself is dark green or black, with various electronic components visible, including capacitors, resistors, and a large yellow plastic component at the top. The lighting is bright, highlighting the textures of the paper and the components of the motherboard.

ANY
QUESTIONS?



Bedankt voor jullie aandacht!