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Waste Analytics & Smart Tracking Ecosystem

Engenharia e Gestão de Software
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What is waste?

Innovative platform for optimizing urban waste collection, focusing on efficiency, sustainability and operational cost reduction

Traditional methods are proving inefficient, costly and environmentally harming, therefore ecoBin addresses problems such as:

Improving efficiency

- Optimize waste collection routes and schedules, reducing fuel consumption and unnecessary trips
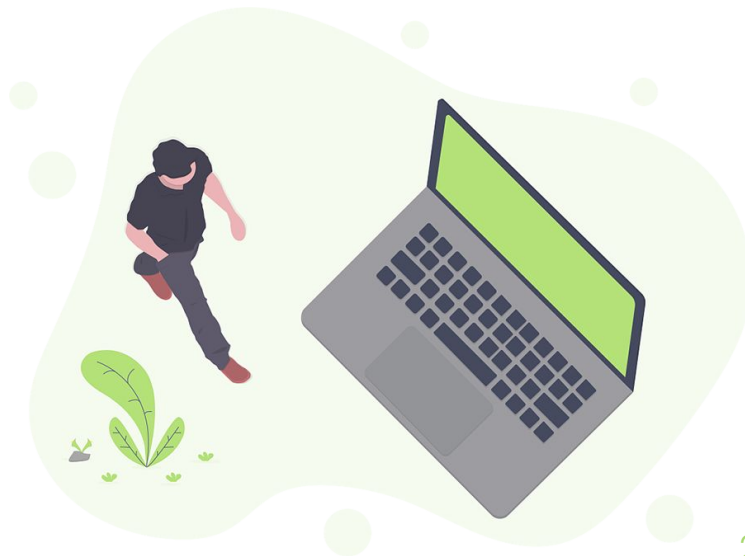
Enhancing sustainability

- Predicting overflow events to prevent overfilling of bins, thus reducing littering and environmental pollution
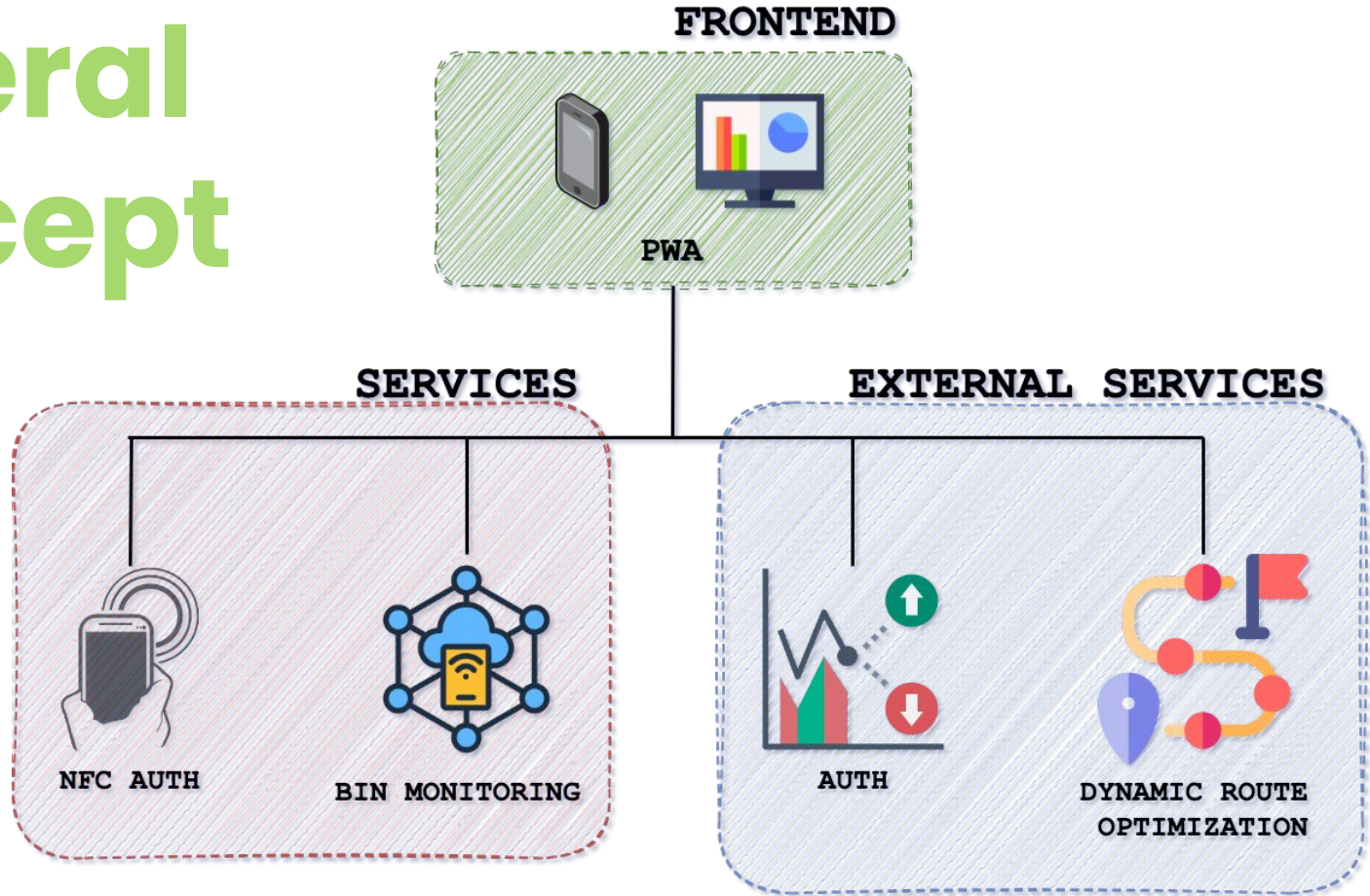
Reducing operational costs

- Dynamic route optimization for waste trucks, allowing for better resource allocation
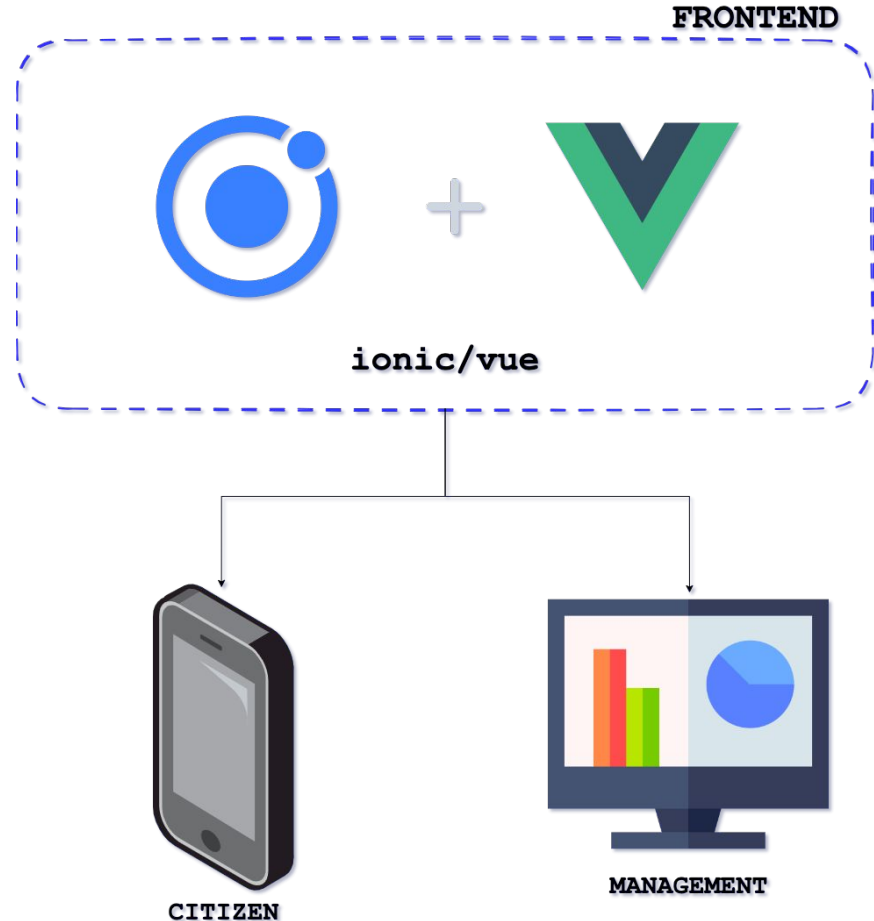
General Concept

FRONTEND

PWA

SERVICES

NFC AUTH

BIN MONITORING

EXTERNAL SERVICES

AUTH

DYNAMIC ROUTE OPTIMIZATION
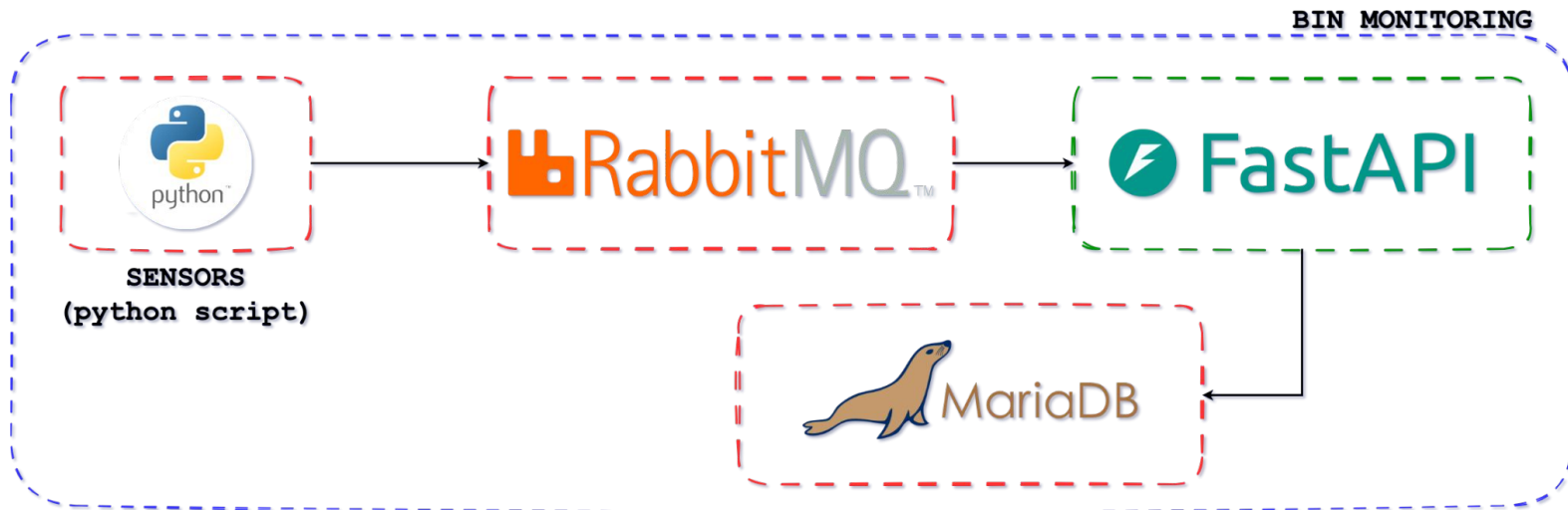
FrontEnd

– PWA where the citizen can
   see the user profile and
   track the nearest trash cans

– Management can see the
   information obtained by the
   "Bin Monitoring" as well as
   the "Dynamic Route
   Optimization"
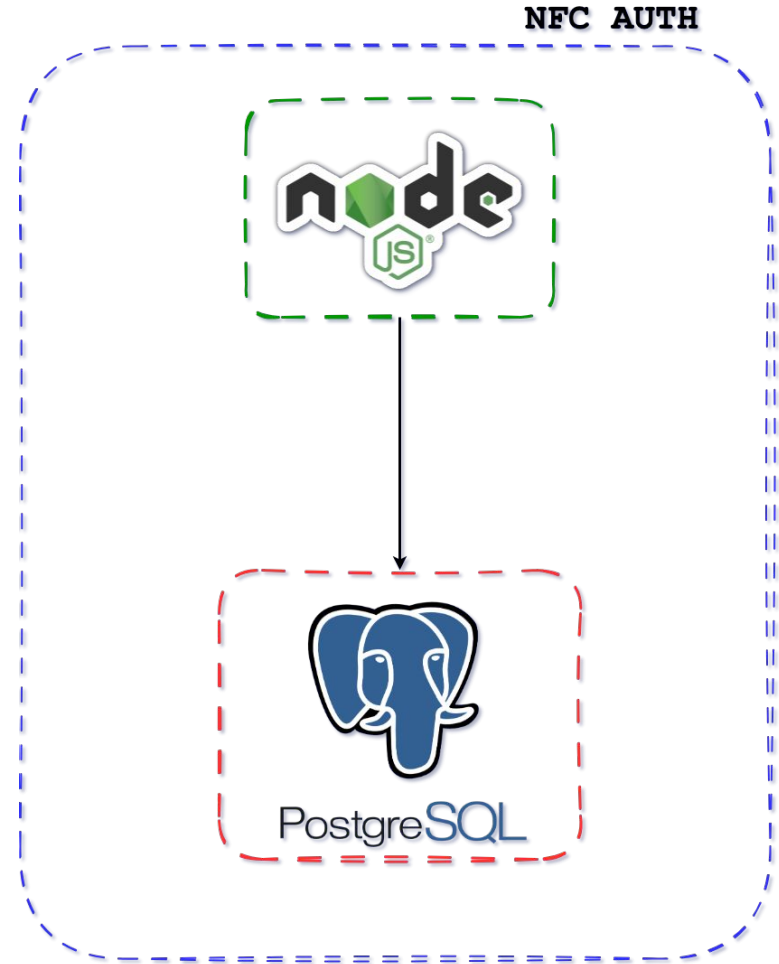

FRONTEND

ionic/vue

CITIZEN

MANAGEMENT

4

Bin Monitoring

- Fullness monitoring and state of the trash cans

NFC Auth

- User authentication based on nfc to track trash can usage

Dynamic Route Optimization

– Generate dynamic routes for
   the garbage trucks.
– Create a path to the nearest
   trash cans for the average
   user.

Authentication

– Authenticate users:
   – common
   – management