#carusodataplace

CARUSO dataplace

MISSION

BUILD AN APPLICATION WITH DATA FROM CONNECTED CARS

SEP2020, Kickoff, 2020-03-27

CARUSO DATAPLACE

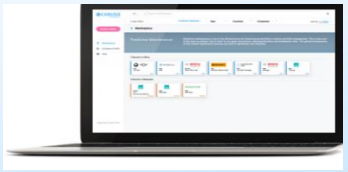
Your Solution. One Platform. Multi-Brand In-Vehicle Data.

Our Market

- 2016
  3% Connected Vehicles
  of 297 million (PC & LCV)
- 2019
  12% Connected Vehicles
  of 316 million (PC & LCV)
- 2022
  29% Connected Vehicles
  of 336 million (PC & LCV)
- 2025
  39% Connected Vehicles
  of 357 million (PC & LCV)

Our Platform

- 11/2017
  n:1:m
  - n Data Suppliers (Provider)
  - 1 Platform with Standardized Data & API
  - m Data Customers (Consumer)
- 03/2018
  Study on the **Data Needs**
  for Mobility Services
  - 500+ Data Items indexed
- 06/2018
  Delivery Engine
  - Data Subscriptions
  - Consent Handling
  - No On-Platform Storage of Data
- 01/2019
  Marketplace



- 01/2019
  Developer Portal

- 01/2020
  Vehicles in Reach
  - All **major OEMs onboarded**
  - More than **50% of Connected Vehicles in DE**

Our Team

- 10/2015
  Started as Initiative for "**Access to Vehicle Data**"
  of major players of the Independent Automotive Aftermarket (IAM)
- 03/2017
  Founding of Caruso GmbH
  - Head Office @ Ismaning (DE)
  - Development Office @ Mannheim (DE)
- 11/2017
  Platform **Go Live** with
  active Data Delivery
- 11/2018
  Neutrality by Shareholdership
  - 10 Shareholders representing more than 468+ legal entities
- 10/2019
  Team of **15+ FTEs**
- xx/2020
  Your Start (?) at Caruso
  - Bachelor Thesis
  - Master Thesis
  - Student Worker

2016 2017 2018 2019 2020 2021 2022 2025

TEAM INTRO

Contact us: SEP2020@caruso-dataplace.com

Jens Knodel
Head of Platform Engineering

Kristjan Liiva
Lead Frontend Developer

Marcel Ortega
Frontend Developer

Taslim Arif
Technical Product Manager

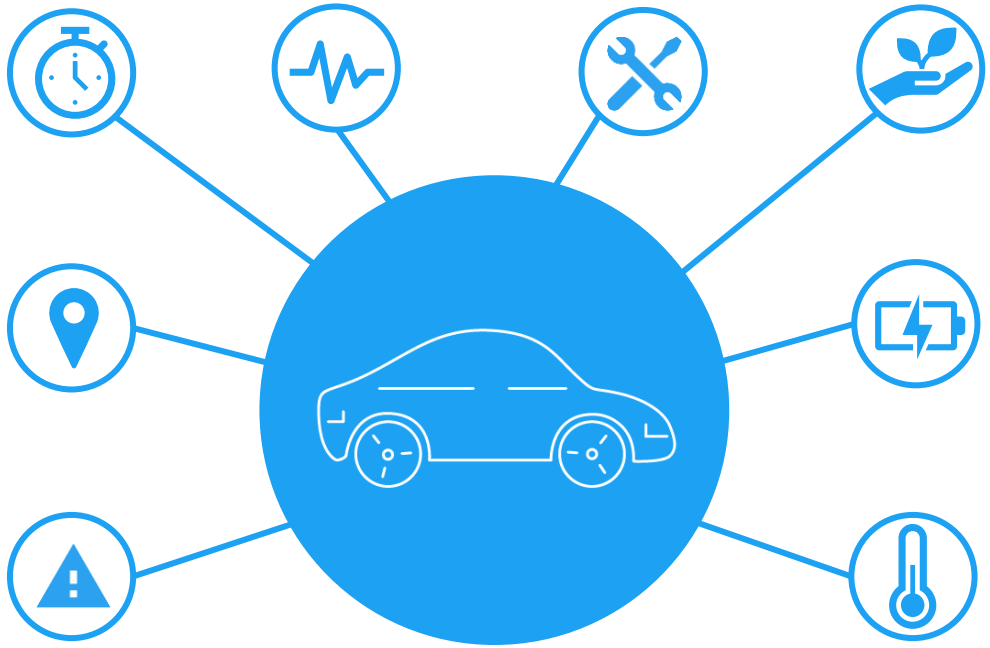
Tina Rauschenbach
Lead User Experience Designer

CARUSO B2B DATAPLACE

Providing In-Vehicle Data for Mobility Services

IN-VEHICLE DATA

Sample Data - Service-Related Data Items



Date of next Inspection
01.09.2020 00:00:00 UTC

Date of next Service
27.07.2020 00:00:00 UTC

Periodic Technical Inspection Due
4 month

Condition based Services
Brake fluid date
01.08.2020 00:00:00 UTC

Distance to next Service
14.000 km

Battery Voltage
12.89 V

DTCs and check control lights / warning
D9C50B – FLE-L

Coolant Temperature
37 °C

WBA8T11040BFxxxxx

BMW 318 D (F34), Gran Turismo (black 2), 29.08.2017, manual, RWD
Thu Dec 05 05:09:05 UTC 2019

Caruso Data Catalog
(as of today)

- 500+ In-Vehicle Data items indexed
- 85+ Data Items ready for delivery
- Data Study published in 03/2018

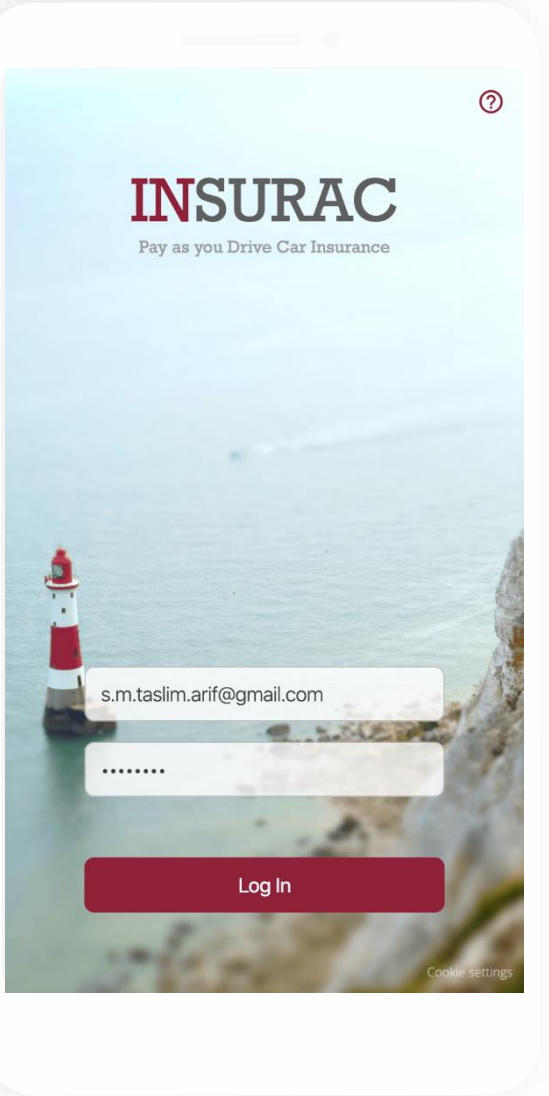
ACCESS TO DATA

Demonstration Example

Live Demo

Pay As You Drive (PAYD)

- Insurance
- Caruso
- Vehicle Manufacturer



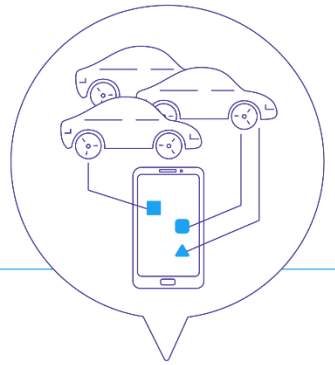
CUSTOMER JOURNEY

We Simplify your Access To Car Data

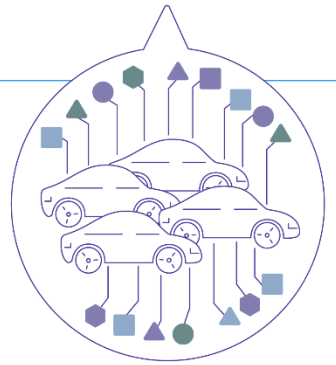
Register

Subscribe

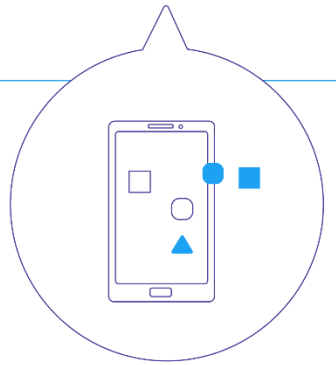
Consume



Explore



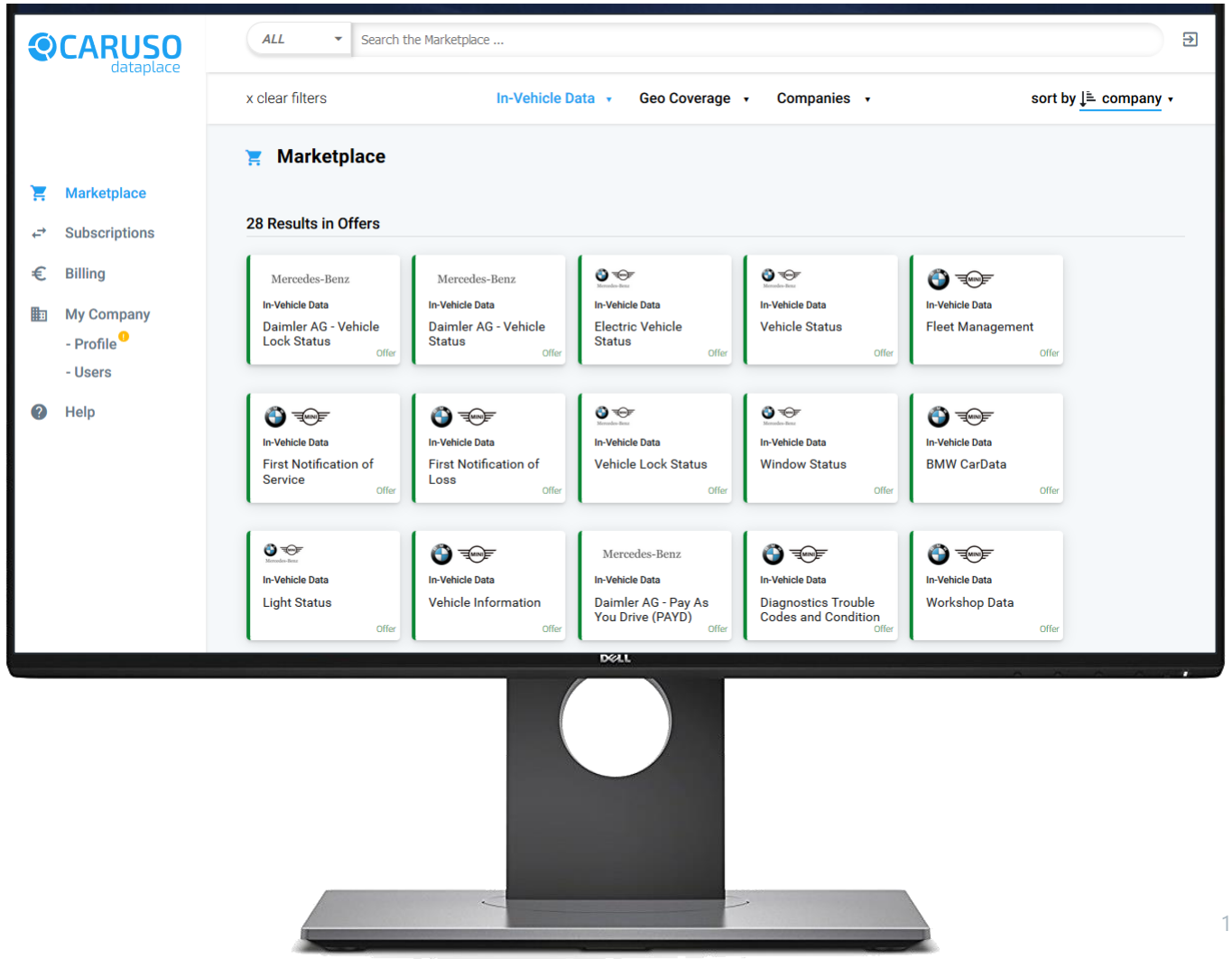
Integrate



EXPLORE

OEMs - Use Cases - Data Packages

Live Demo



ABOUT THE PROJECT

Task and Goal

“Build an Application with Data from Connected Cars”

- Create an App which Caruso can use for Presentations, Events and Fairs
- Use In-Vehicle Data of Connected Cars via Caruso Platform API
- Choose a predefined Use Case and enhance the story
  or create & define of something of your own

WORKSHOP

Use Case

Data Items

`Conditionbasedservices(mocked), Nextbreakfluidchangedate, Coolanttemperature, Nextservicedate, Nextservicedistance, Checkcontrolmessages, Nextlegalinspectiondate, Batteryvoltage, Mileage`

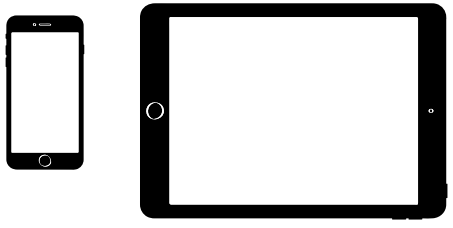
Wolfgang

Workshop operator, works for UTA

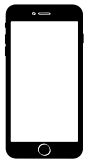
Clara

Regular customer of UTA.

Devices



Devices



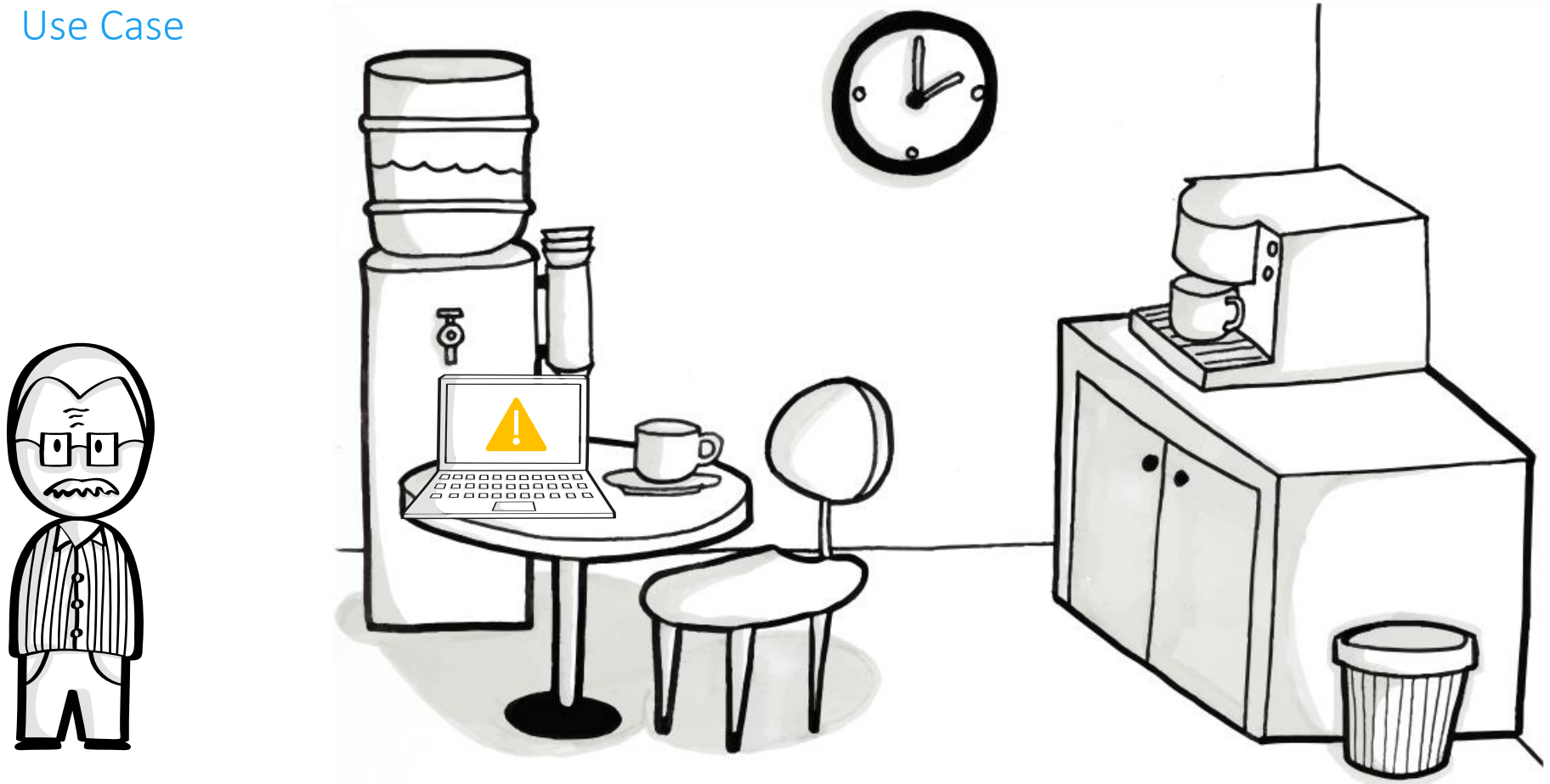
WORKSHOP STORY

Use Case

Clara is on here way to work when her car brings up a message that the next service check should be done. After arriving at works she wants to take care directly of this. She opens the UTA app where she sees already the recommended steps for the issue. A recommended time slot based on her calendar and the calendar from the workshop is provided. She books the slot in the app.

WORKSHOP STORY

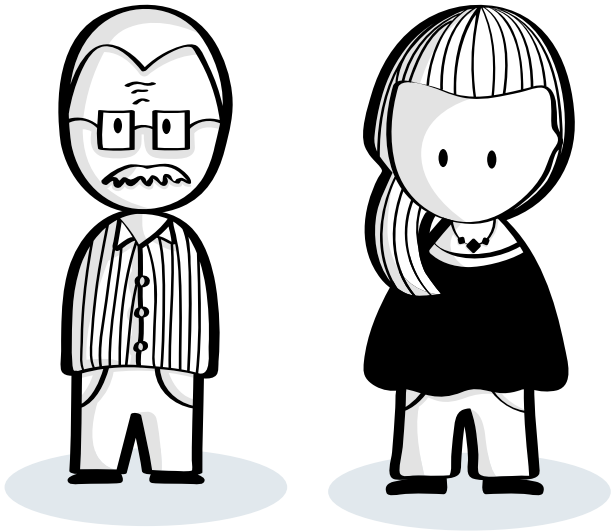
Use Case

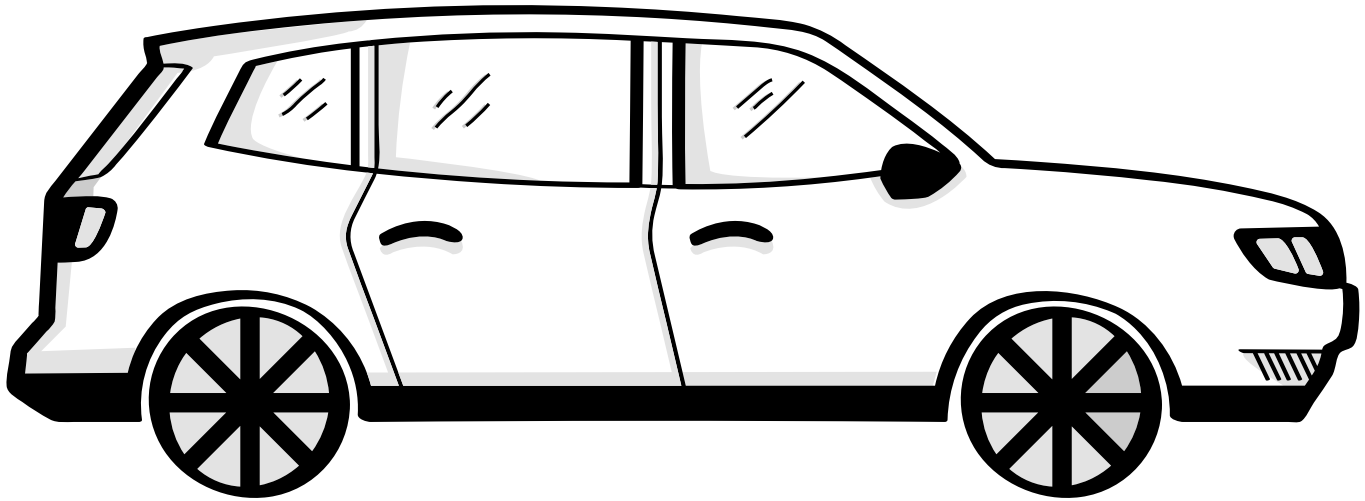


Wolfgang is currently going over his appointments for today when he receives a notification that a new appointment was scheduled. He checks the details and based on the information that are provided he provides Clara an offer which spare parts must be replaced. Clara accepts and Wolfgang can pre-order the parts upfront.

WORKSHOP STORY

Use Case

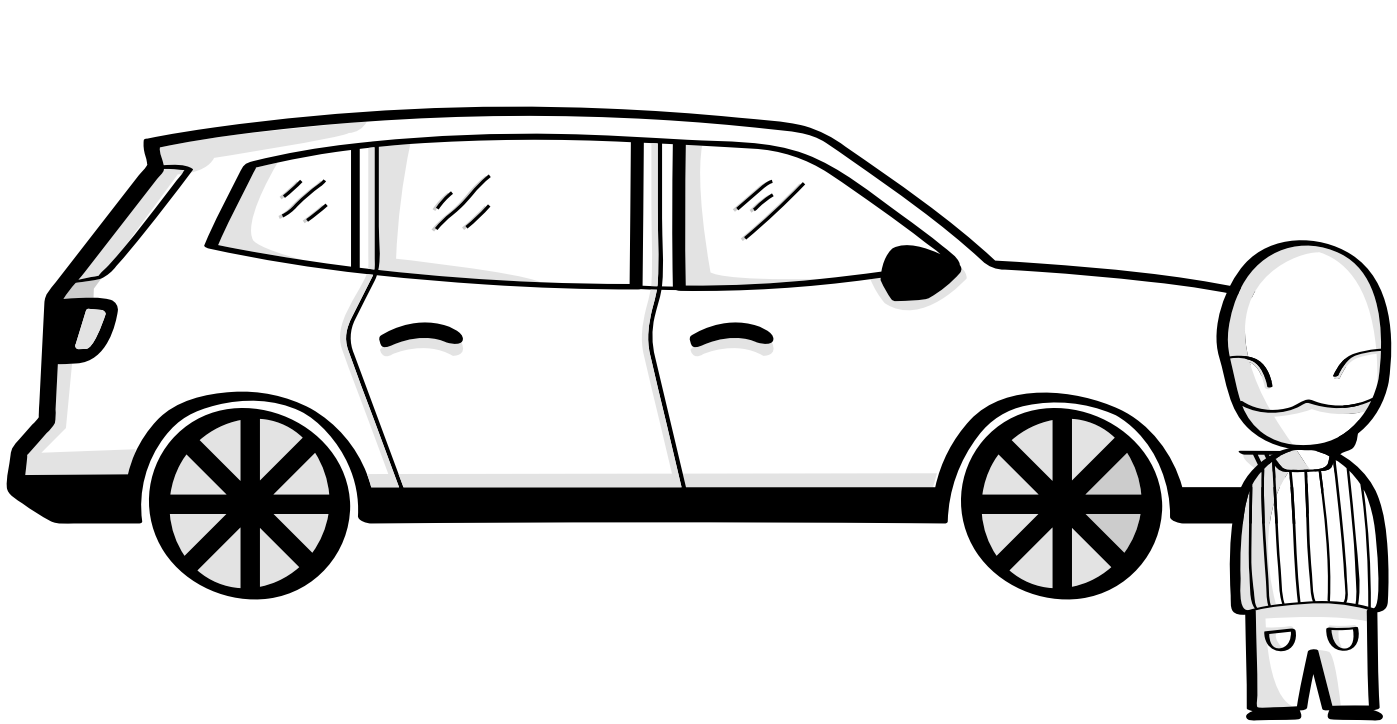




Clara brings her car to Wolfgang.

WORKSHOP STORY

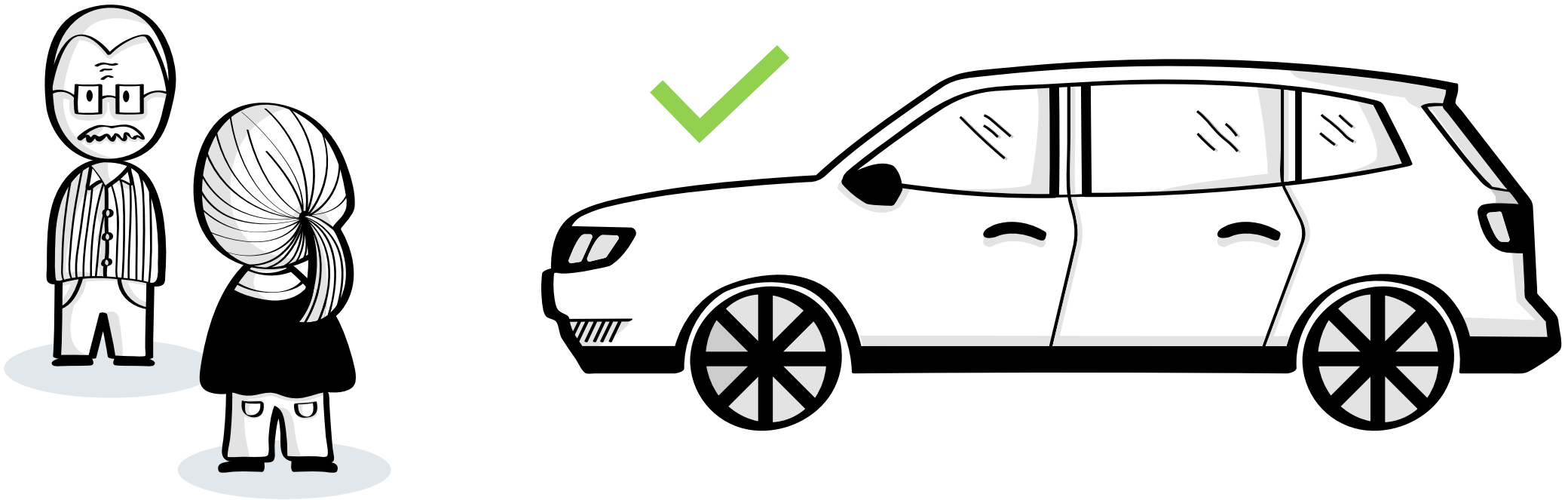
Use Case



Wolfgang replaces the parts which arrived on time and informs Clara via the app that the car is ready.

WORKSHOP STORY

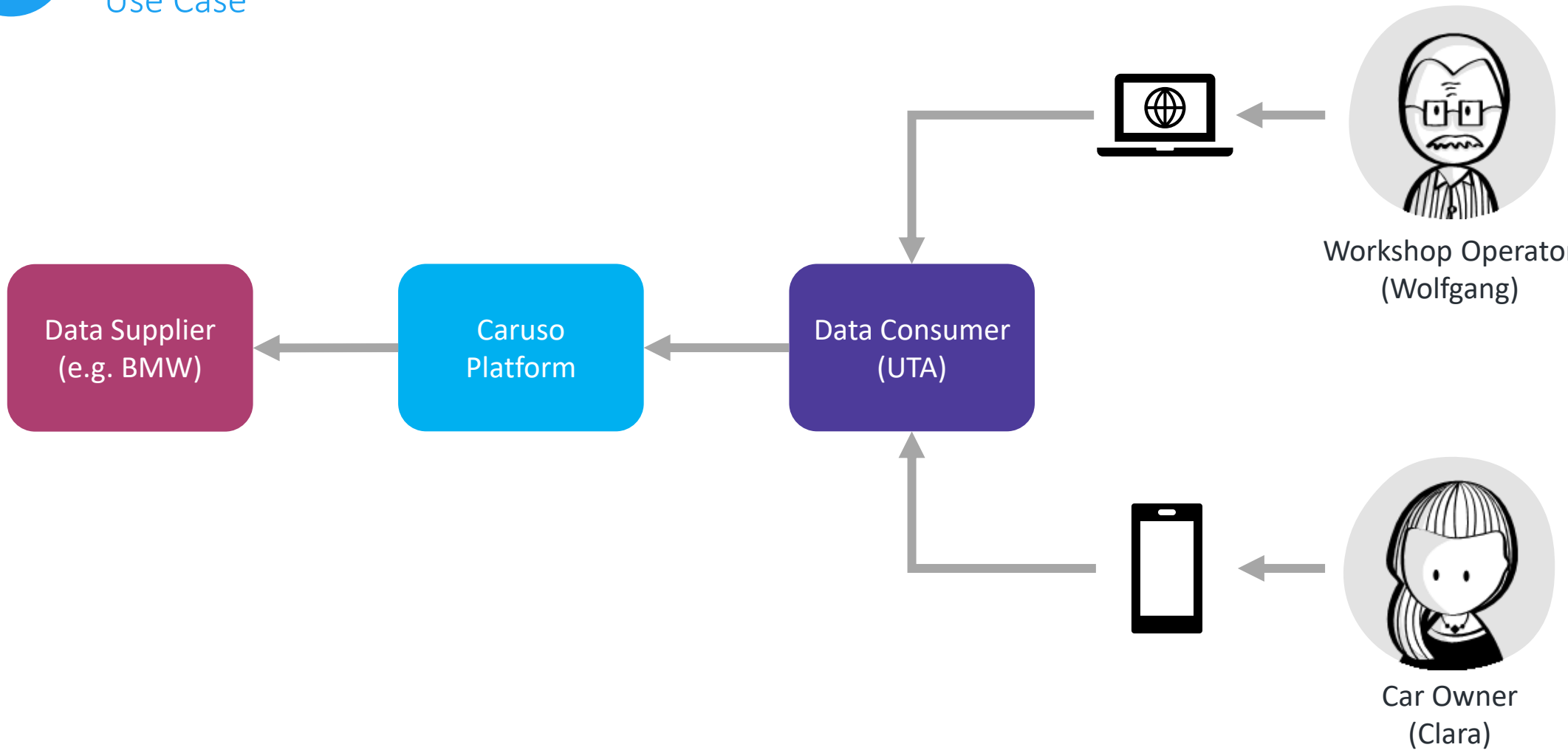
Use Case



Clara picks up her car and everyone is happy.

WORKSHOP INFORMATION FLOW

Use Case



WORKSHOP

Use Case

Which systems to build

- Workshop Dashboard
- Driver App

Workshop Dashboard Functionality

- Maintains the workshop fleet (customer base), appointments
- See the overview of next services status: OK, PENDING, CONTACTED, …
  - Service overview about next service, oil change, brake, battery, dtc – indicator, time, distance
  - Additional data items: mileage, location
- Provide offers (spare parts) based on data
- Manages the consent overview (low prio)

Driver App Functionality

- Service notifications and proposed next steps
- Accept/ Decline Offers
- Making workshop appointments
- User consent (low prio)

WORKSHOP BOOKING PLATFORM

Use Case

Data Items

`Conditionbasedservices(mocked), Nextbreakfluidchangedate, Coolanttemperature, Nextservicedate, Nextservicedistance, Checkcontrolmessages, Nextlegalinspectiondate, Batteryvoltage, Mileage`

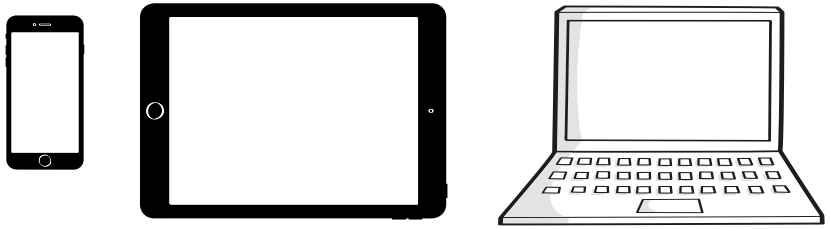
Wolfgang

Workshop operator, works for UTA

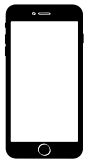
Dirk

Searches for the best price and service.

Devices

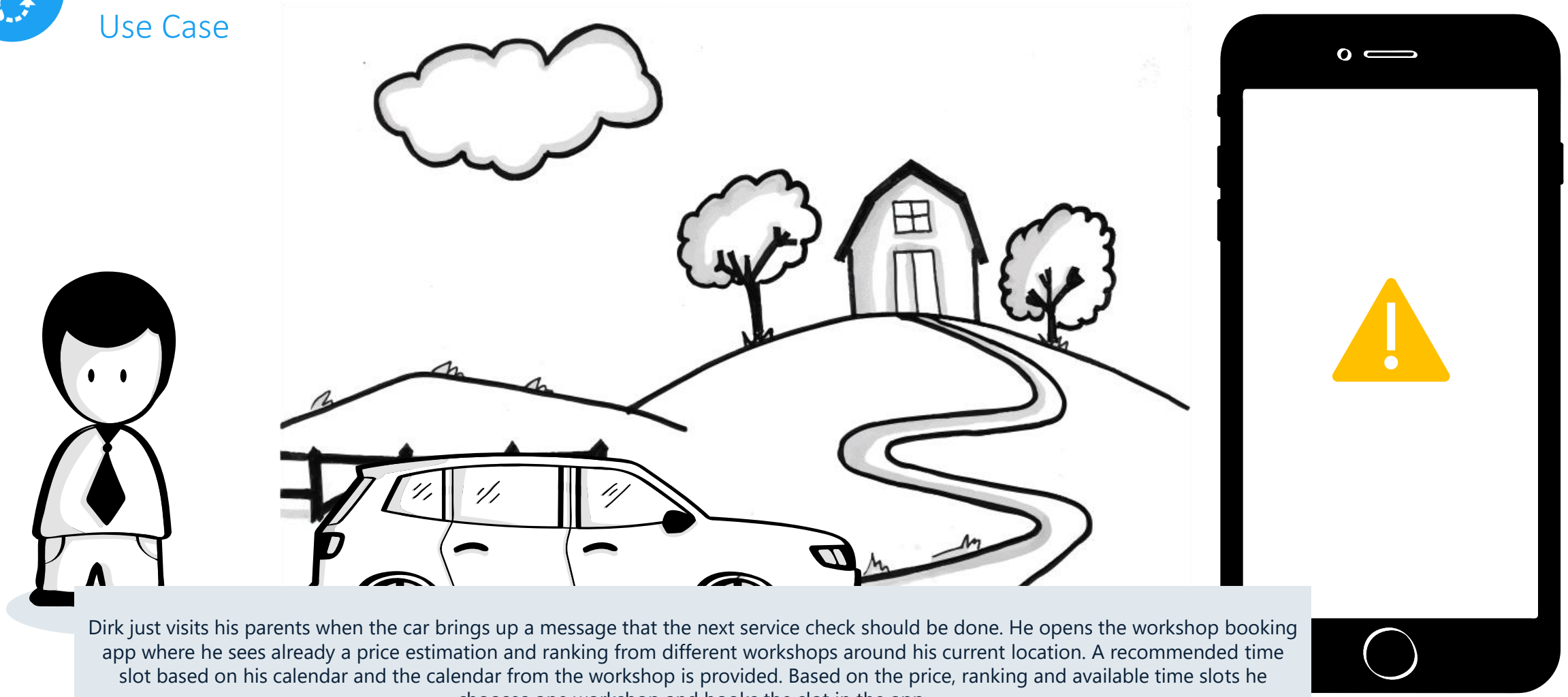


Devices



WORKSHOP BOOKING PLATFORM STORY

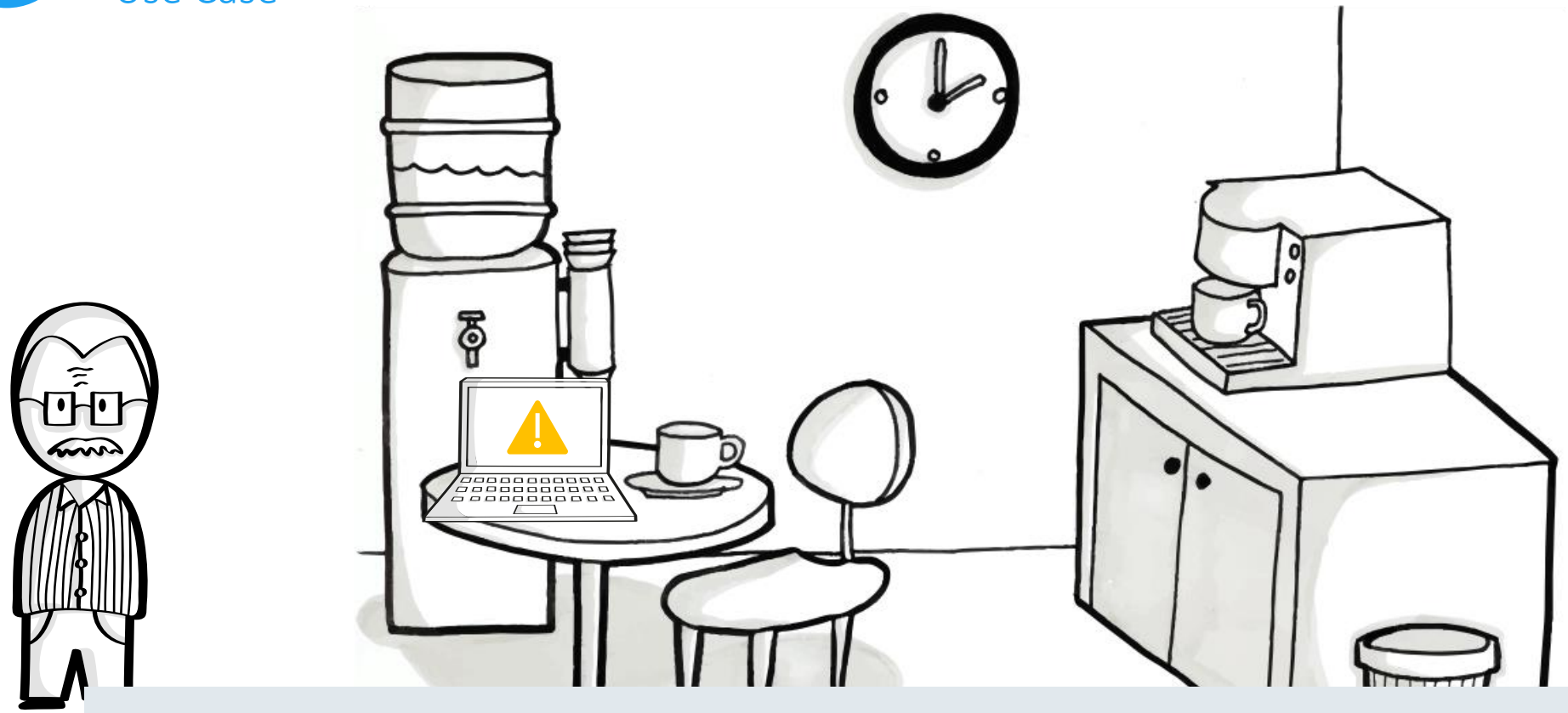
Use Case



Dirk just visits his parents when the car brings up a message that the next service check should be done. He opens the workshop booking app where he sees already a price estimation and ranking from different workshops around his current location. A recommended time slot based on his calendar and the calendar from the workshop is provided. Based on the price, ranking and available time slots he chooses one workshop and books the slot in the app.

WORKSHOP BOOKING PLATFORM STORY

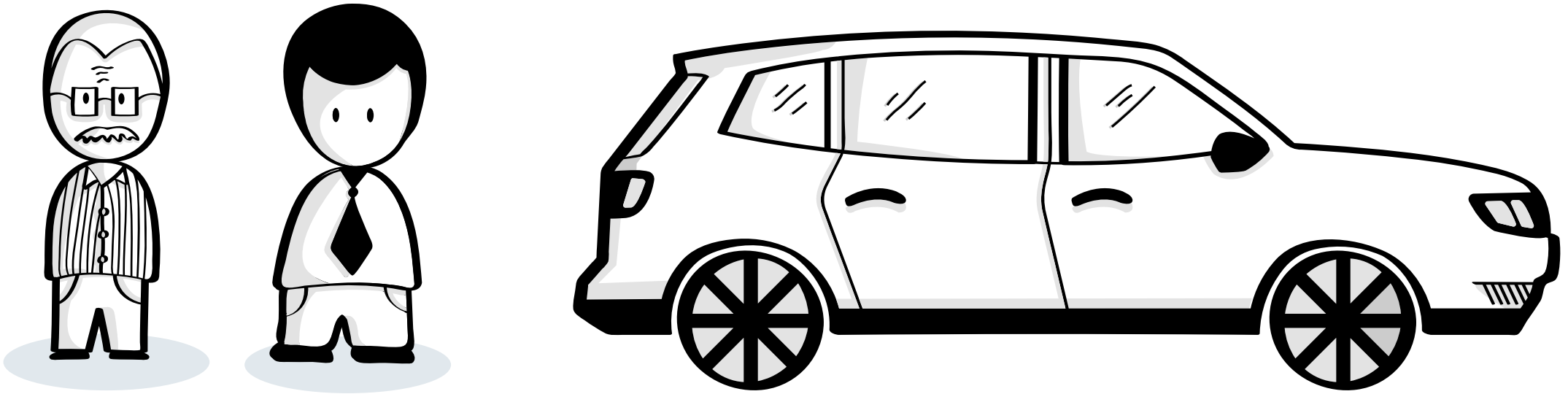
Use Case



Wolfgang is currently going over his appointments for today when he receives a notification that a new appointment was scheduled. He checks the details and based on the information that are provided he provides Dirk an offer which spare parts that must be replaced. Dirk accepts and Wolfgang can be preordering the parts upfront.

WORKSHOP BOOKING PLATFORM STORY

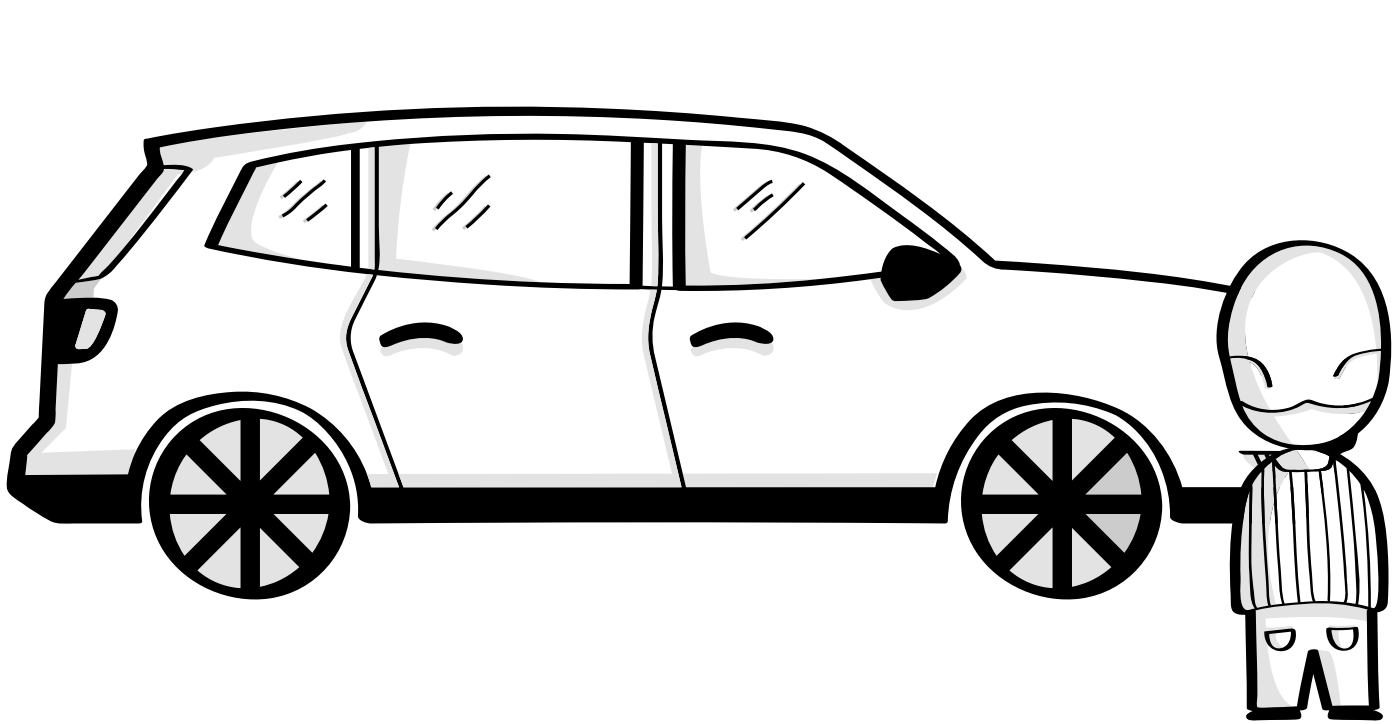
Use Case



Dirk brings his car to Wolfgang.

WORKSHOP BOOKING PLATFORM STORY

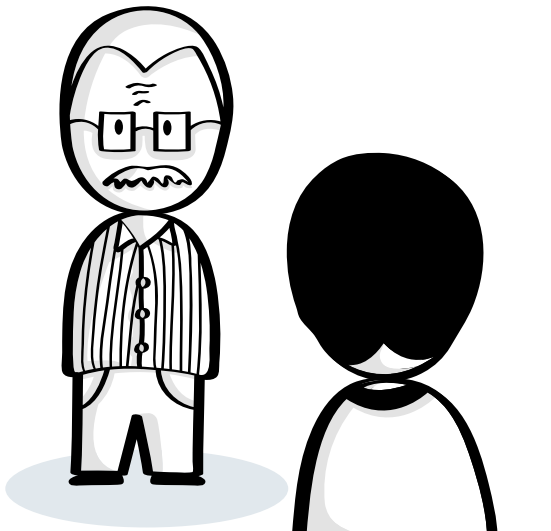
Use Case

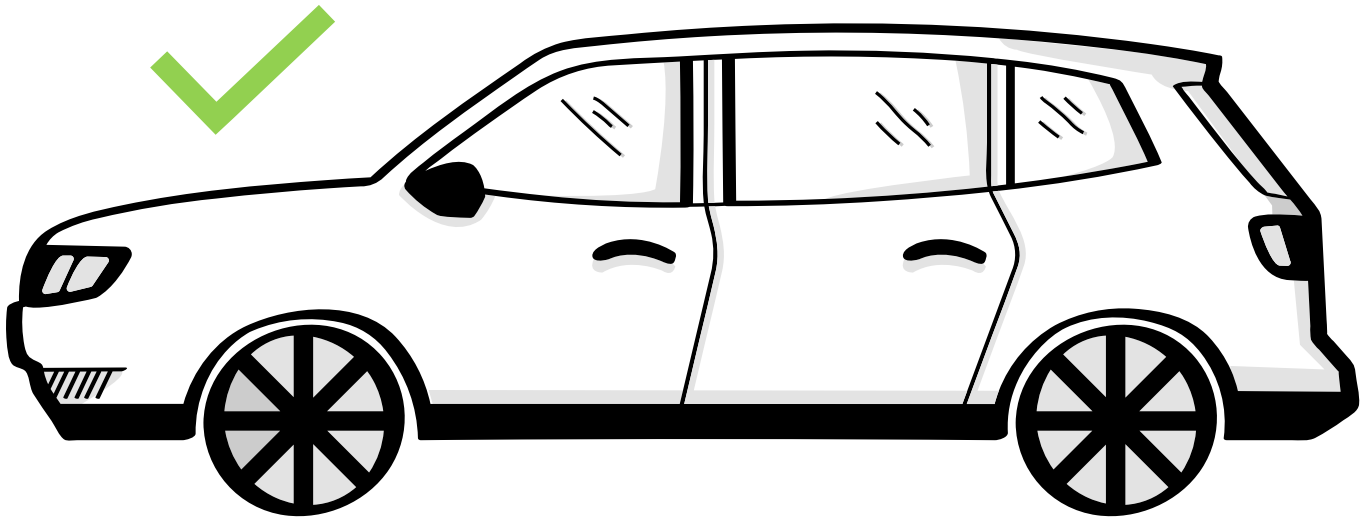


Wolfgang replaces the parts which arrived on time and informs Dirk via the app that the car is ready.

WORKSHOP BOOKING PLATFORM STORY

Use Case

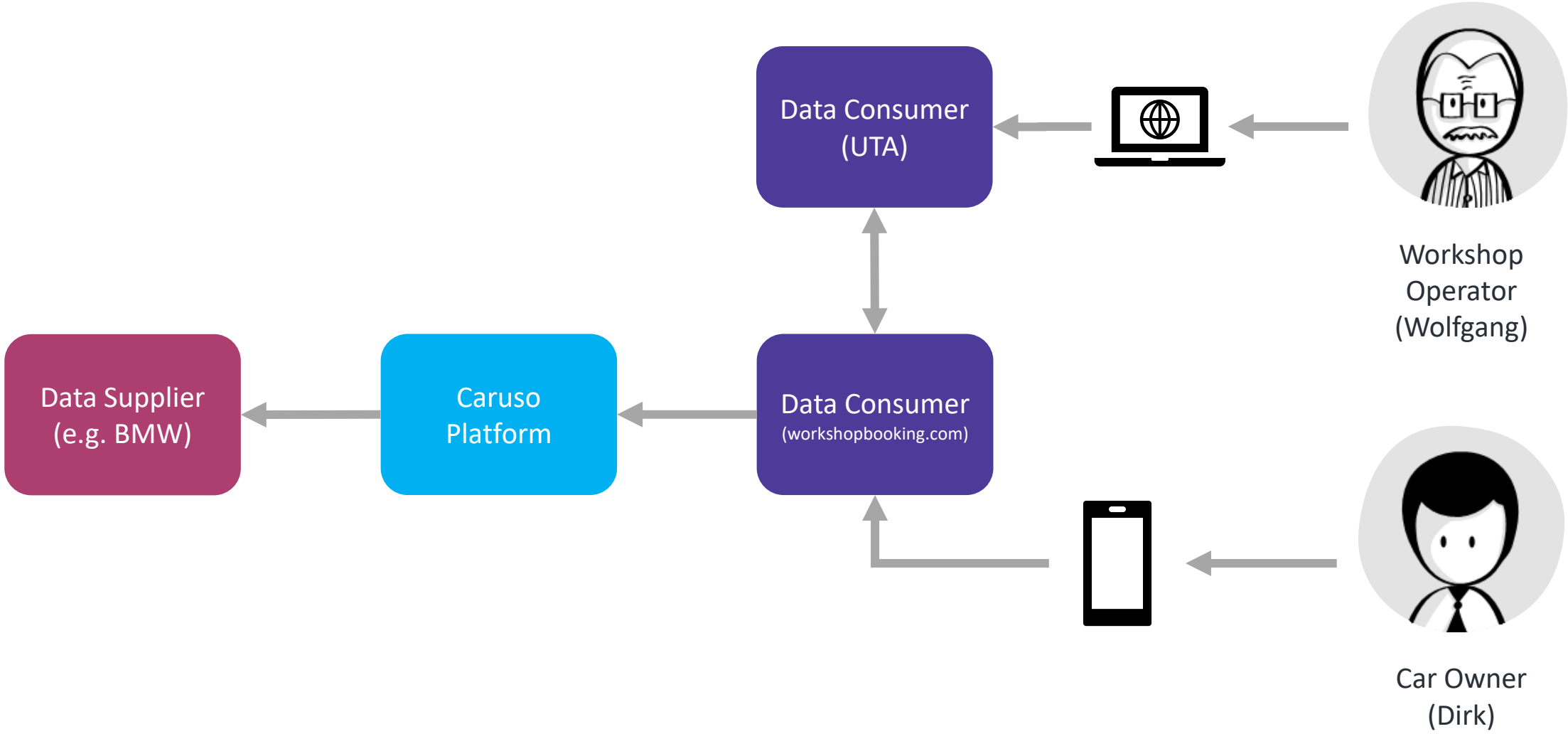




Dirk picks up his car and everyone is happy.

WBP INFORMATION FLOW

Use Case



WORKSHOP BOOKING PLATFORM

Use Case

Which systems to build

- Workshop Dashboard
- Driver App

Workshop Dashboard Functionality

- Maintains the workshop fleet (customer base), appointments
- See the overview of next services status: OK, PENDING, CONTACTED, …
  - Service overview about next service, oil change, brake, battery, dtc – indicator, time, distance
  - Additional data items: mileage, location
- Provide offers (spare parts) based on data
- Manages the consent overview (low prio)

Driver App Functionality

- Service notifications
- Check for best price, rating, close by workshops
- Making workshop appointments
- Payment to the platform via app
- User consent (low prio)

FLEET MANAGEMENT

Use Case

Data Items

Mileage, Location, Diagnostics Trouble Codes, Condition Based Services, Control Messages, Engine Oil Status, Brake Pad and Fluid Status, Brake Fluid Status, Next Service Date, Distance, Tyre Pressure

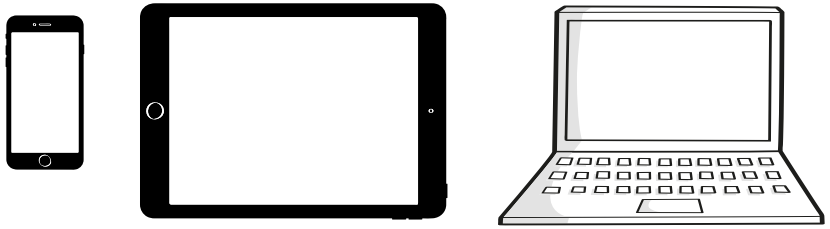
Nina

Fleet Manager

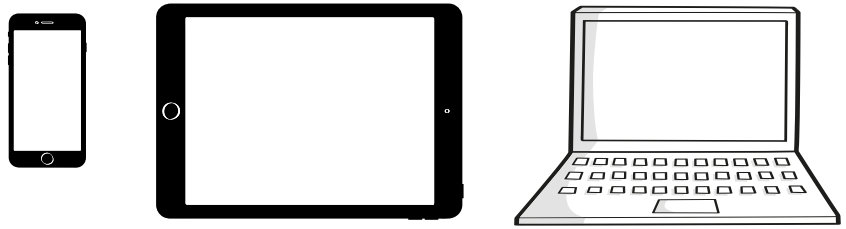
Susann

Company car owner

Devices



Devices



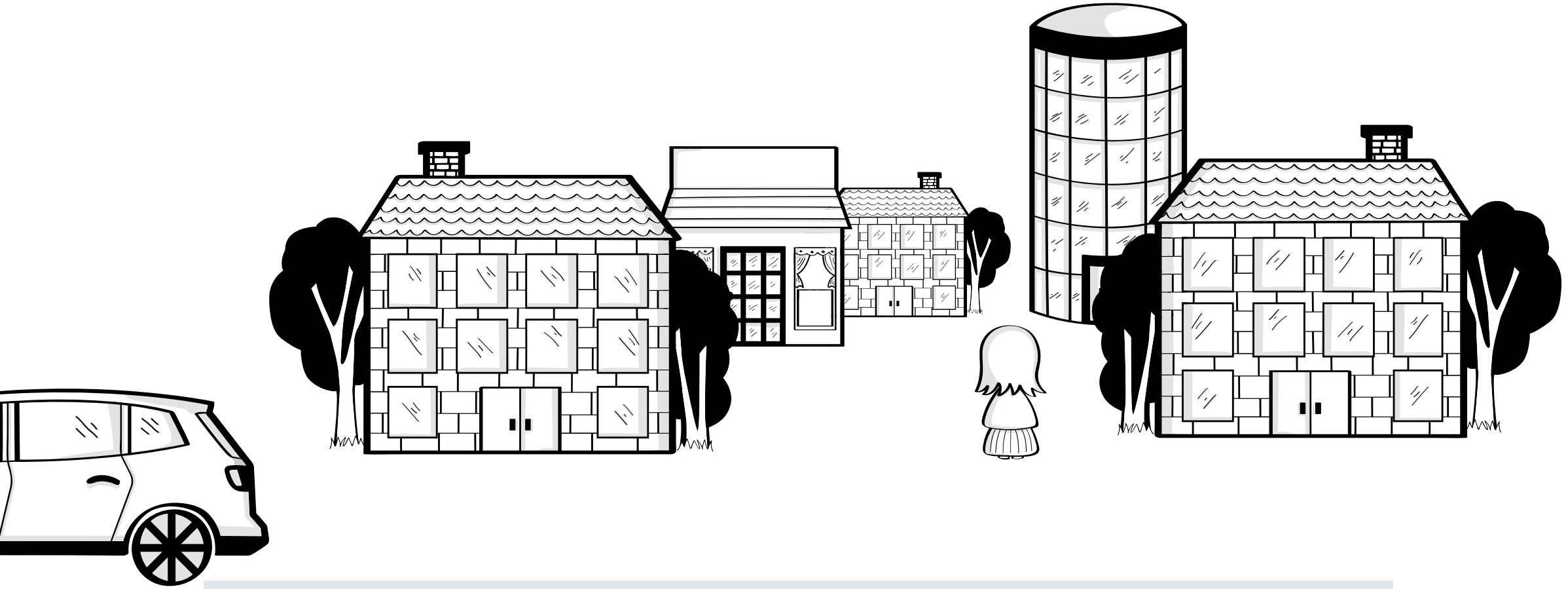
FLEET MANAGEMENT STORY

Use Case

Nina - Fleet Manager comes to office in the morning checks the status of all the cars and which need maintenance.

FLEET MANAGEMENT STORY

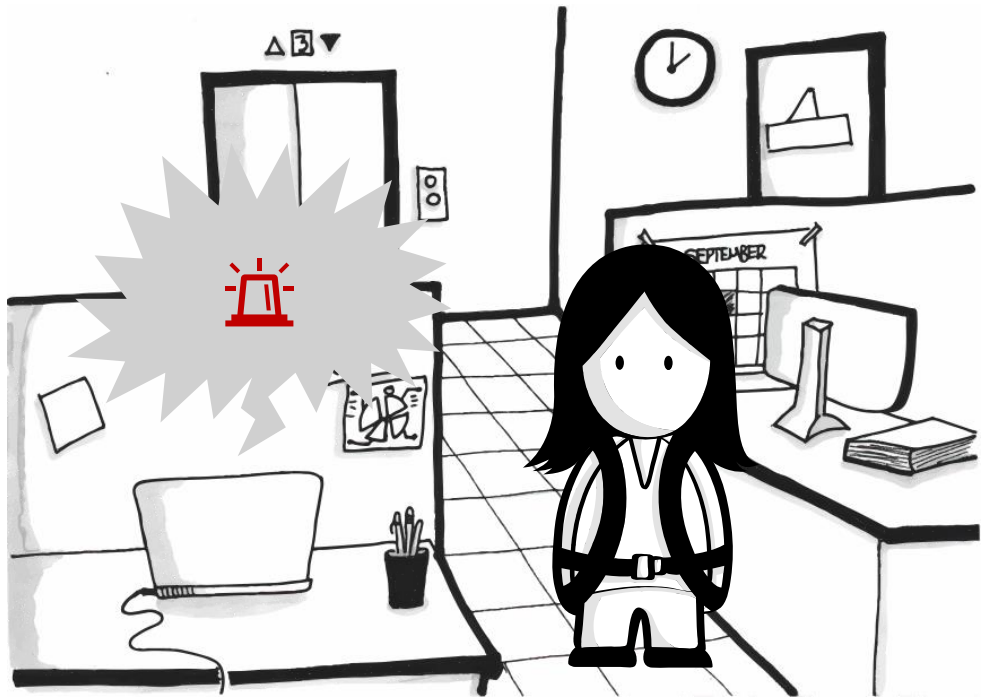
Use Case

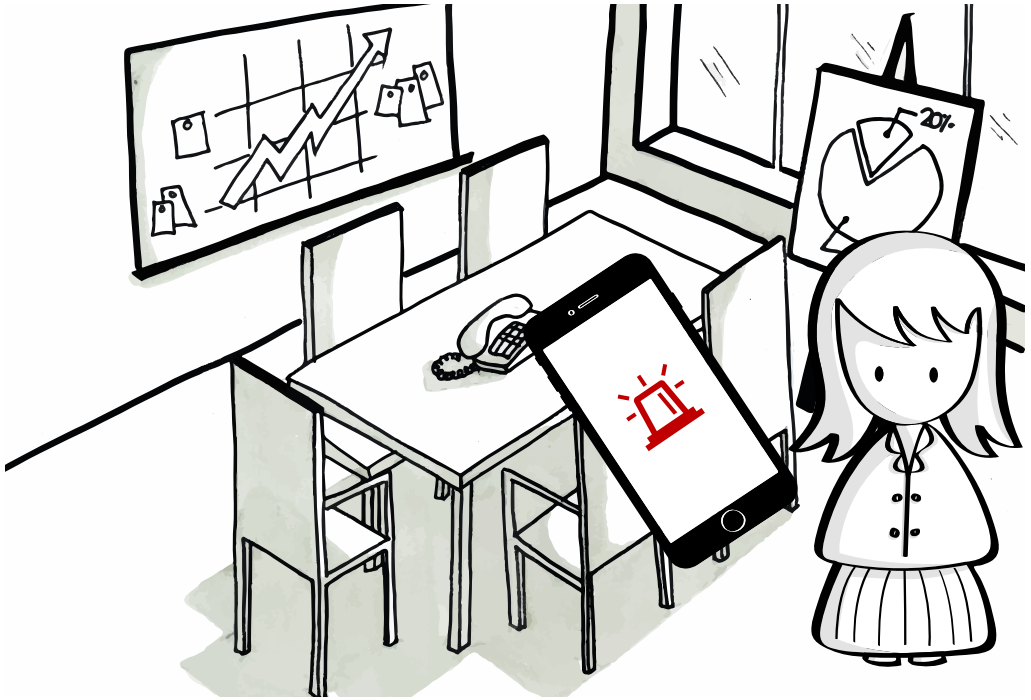


In the meanwhile Susann car get stolen without that she recognizes it.

FLEET MANAGEMENT STORY

Use Case

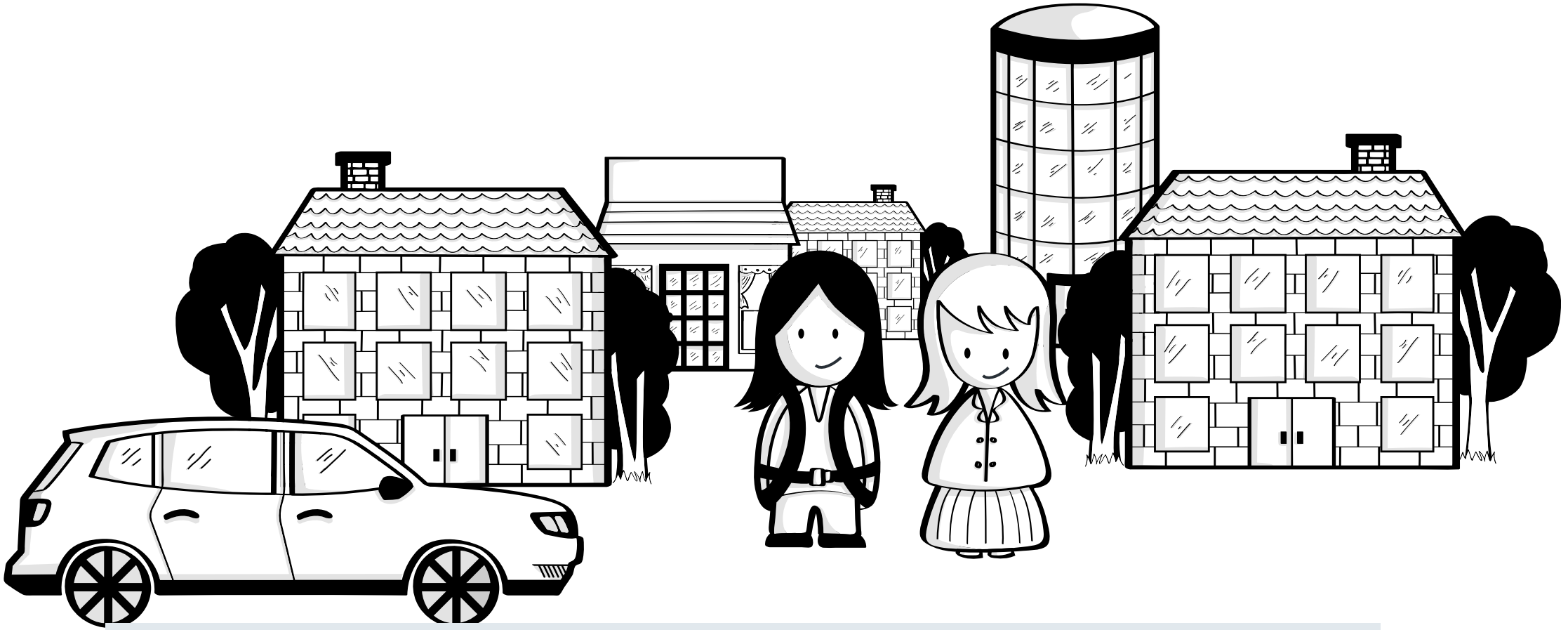




Shortly after, Nina gets an alarm and checks with Susann that the car was moved and is currently entering an area where it shouldn't be. Both confirm via the app that the car shouldn't be there. They inform the police.

FLEET MANAGEMENT STORY

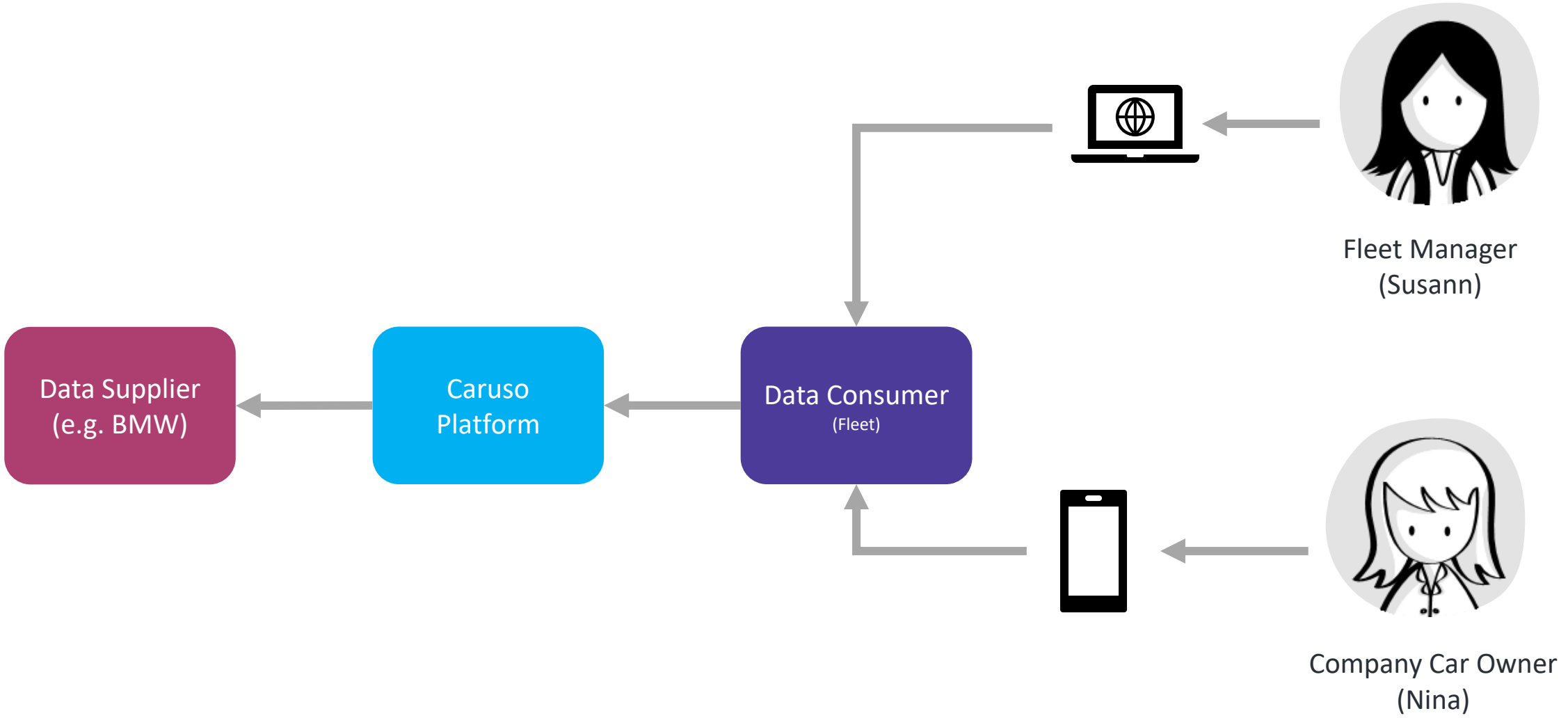
Use Case



The police found the car and Nina and Susann are totally happy to get it back so fast.

FLEET MANAGEMENT INFORMATION FLOW

Use Case



FLEET MANAGEMENT

Use Case

Which systems to build

- Fleet Manager Dashboard
- Driver App

Workshop Dashboard Functionality

- Maintains the fleet
- See the current vehicle status
- Logbook of the vehicles
- Service status
- Send message to the driver
- Driver management

Driver App Functionality

- Receive message from fleet app
  - Service due
  - Log Book

  …

ELECTRIC VEHICLE CHARGING

Use Case

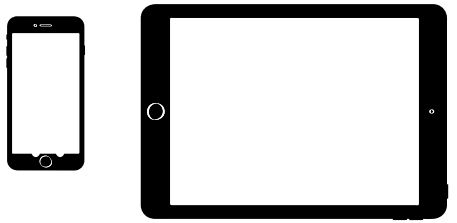
Data Items

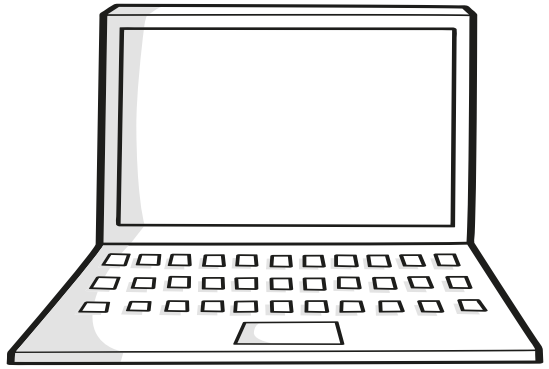
```
Electric Charging Status, Location
```

Elena

Electric Vehicle Owner

Devices





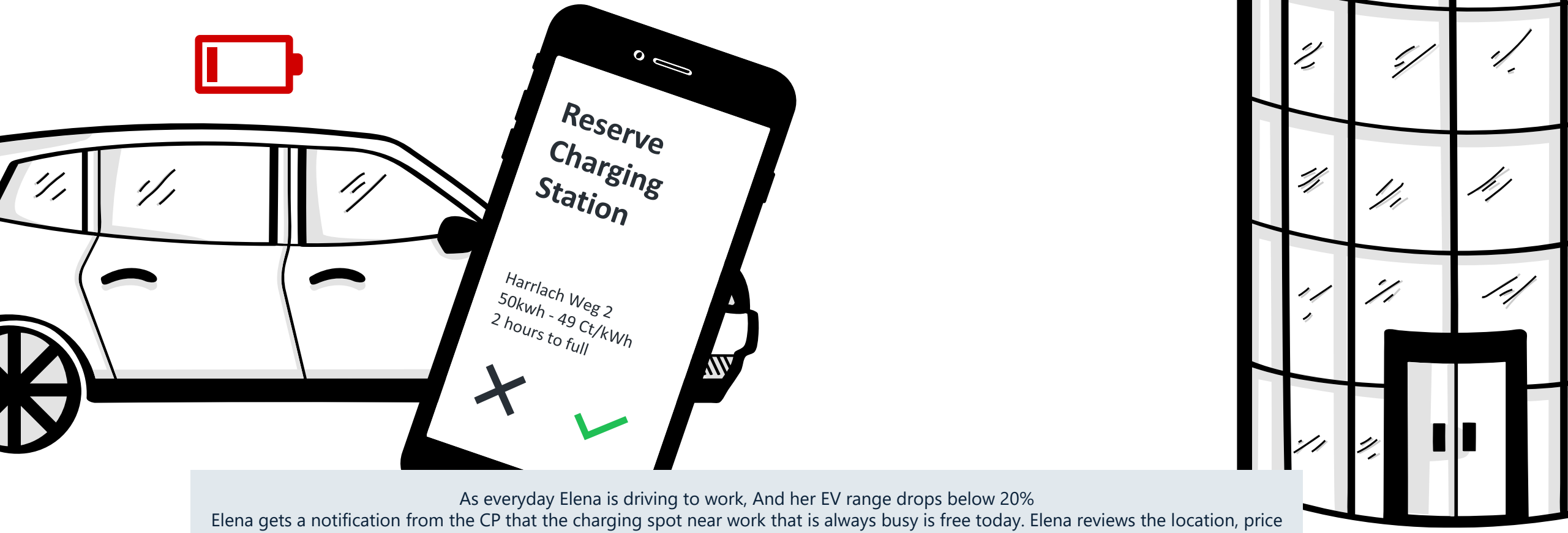
ELECTRIC VEHICLE CHARGING STORY

Use Case

Elena bought an Electric Vehicle, She has no options to charge the home, She signed up with a local EV Charging Provider (EVCP)
After registration CP can now access the location and charging status on Elena's EV

ELECTRIC VEHICLE CHARGING STORY

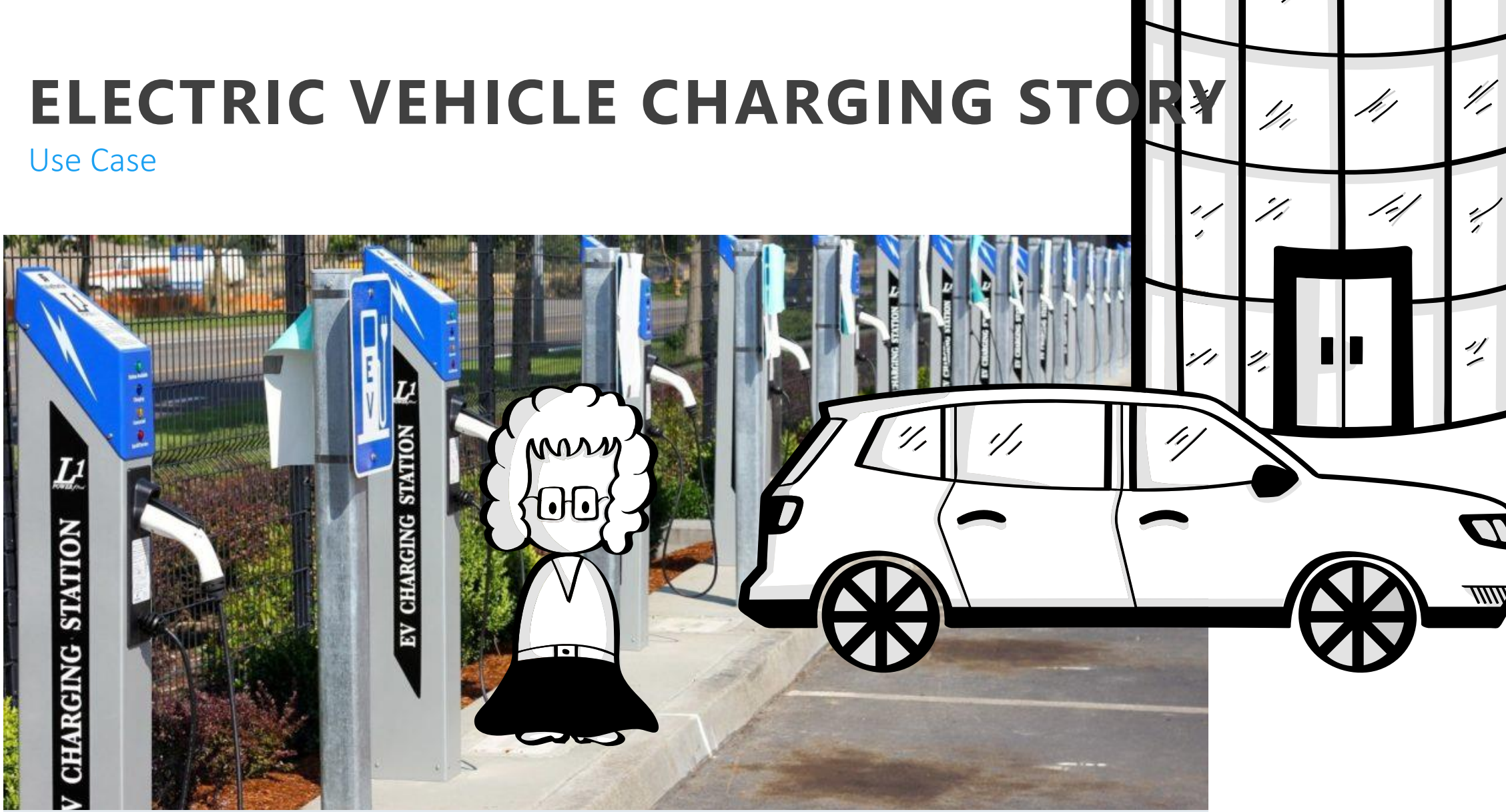
Use Case



As everyday Elena is driving to work, And her EV range drops below 20%
Elena gets a notification from the CP that the charging spot near work that is always busy is free today. Elena reviews the location, price and expected duration. Elena accepts the offer and books the charging spot for herself.

ELECTRIC VEHICLE CHARGING STORY

Use Case



She arrives at the station and starts the charging, Meanwhile she goes to the office

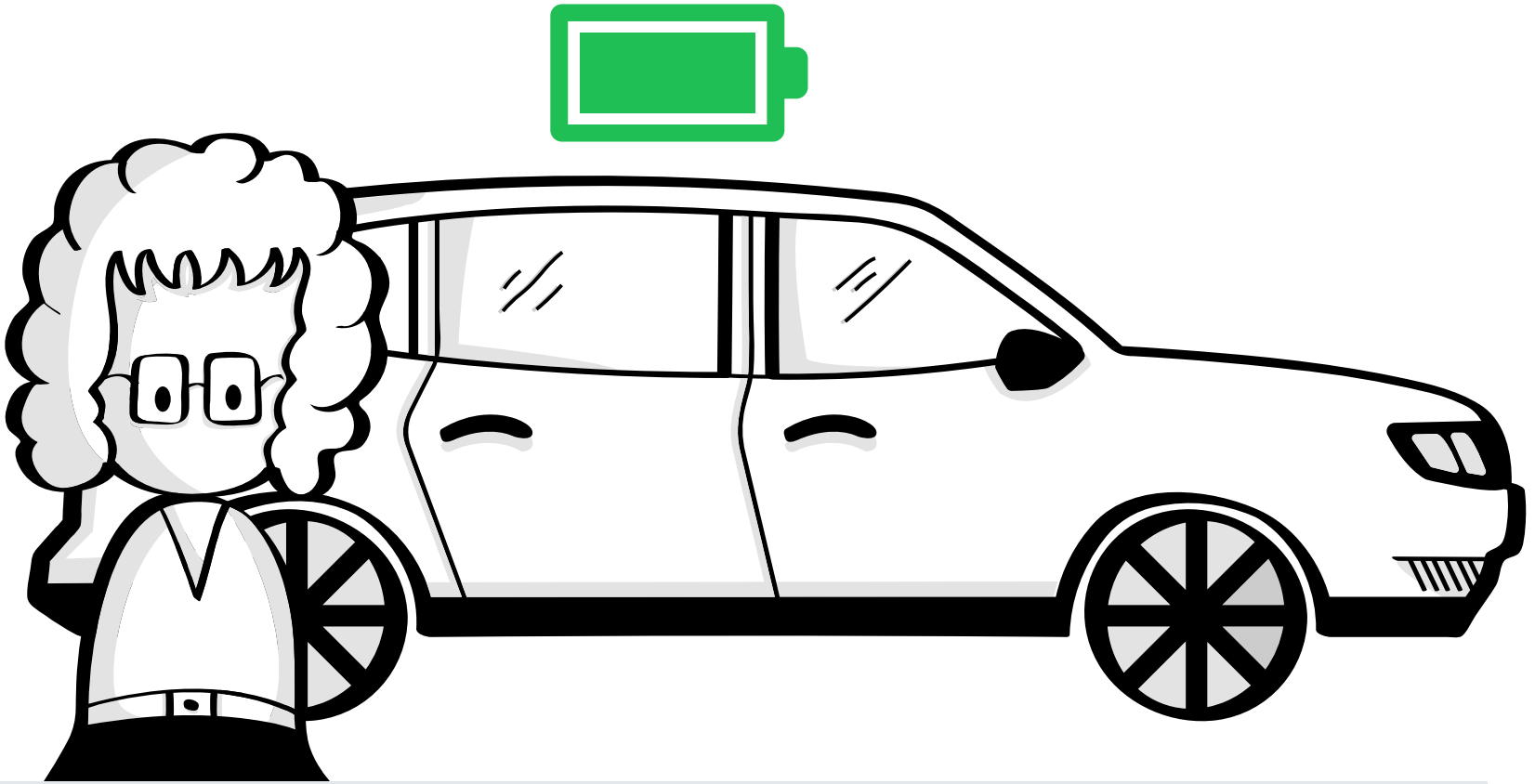
ELECTRIC VEHICLE CHARGING STORY

Use Case

2 hours later...
Elena gets a notification that her EV is fully charged, Payment is charged automatically from her account,
Elena goes to pick up the EV and parks it at the office

ELECTRIC VEHICLE CHARGING STORY

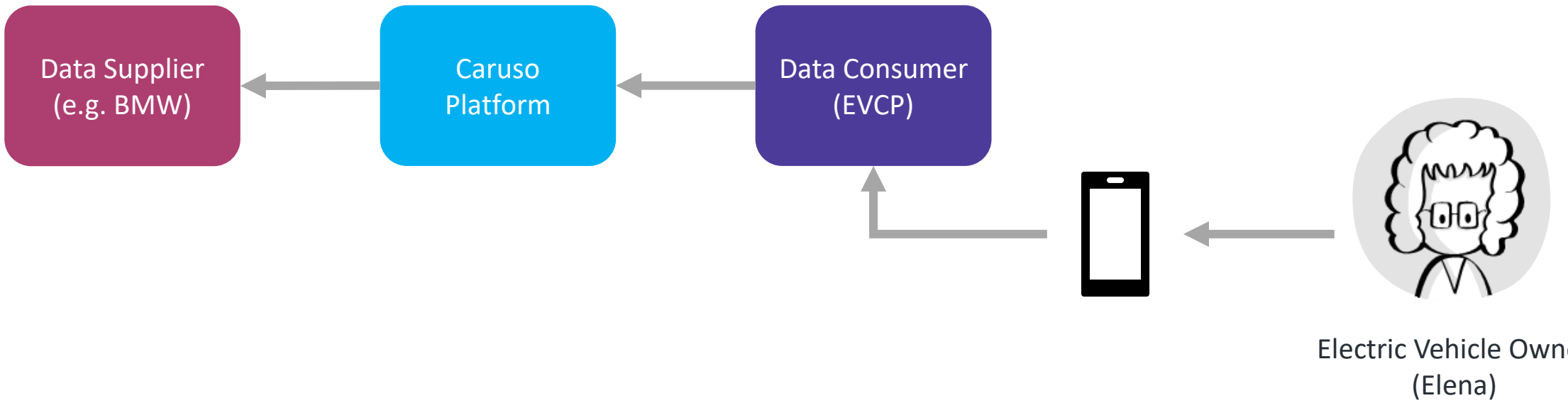
Use Case



CP is happy: First provider of the charging service, Maximize charging station usage, Frequent meaningful contact to the customers
Elena is happy: No fighting over charging spots, Review the pricing before hand

ELECTRIC VEHICLE INFORMATION FLOW

Use Case



ELECTRIC VEHICLE CHARGING

Use Case

Which systems to build

- Driver App

Driver App Functionality

- EVCP app for end-user (mobile)
- View charging status (Current level, Time to full)
- Useful notifications for charging stations, based on
  - Low remaining range
  - Close to work, home, shopping etc.
  - Or where the charging service would like to send the user
  - Notification when charging is completed
- Vehicle information
- POI setup
- Map to manually find stations
- Visualizing payment

ROADSIDE ASSISTANCE

Use Case

Data Items

`Conditionbasedservices(mocked), Nextbreakfluidchangedate, Coolanttemperature, Nextservicedate, Nextservicedistance, Checkcontrolmessages, Nextlegalinspectiondate, Batteryvoltage, Mileage`

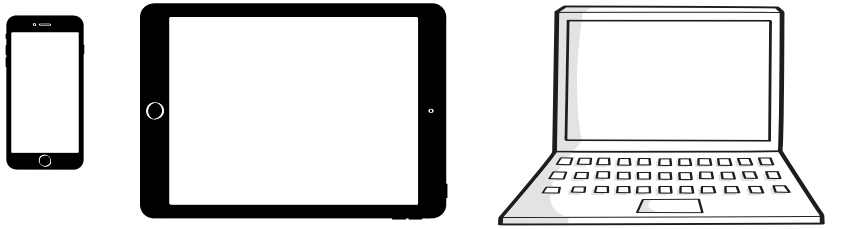
Jeremy

Assistance Operator

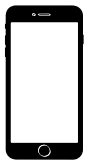
Julia

Car Owner

Devices

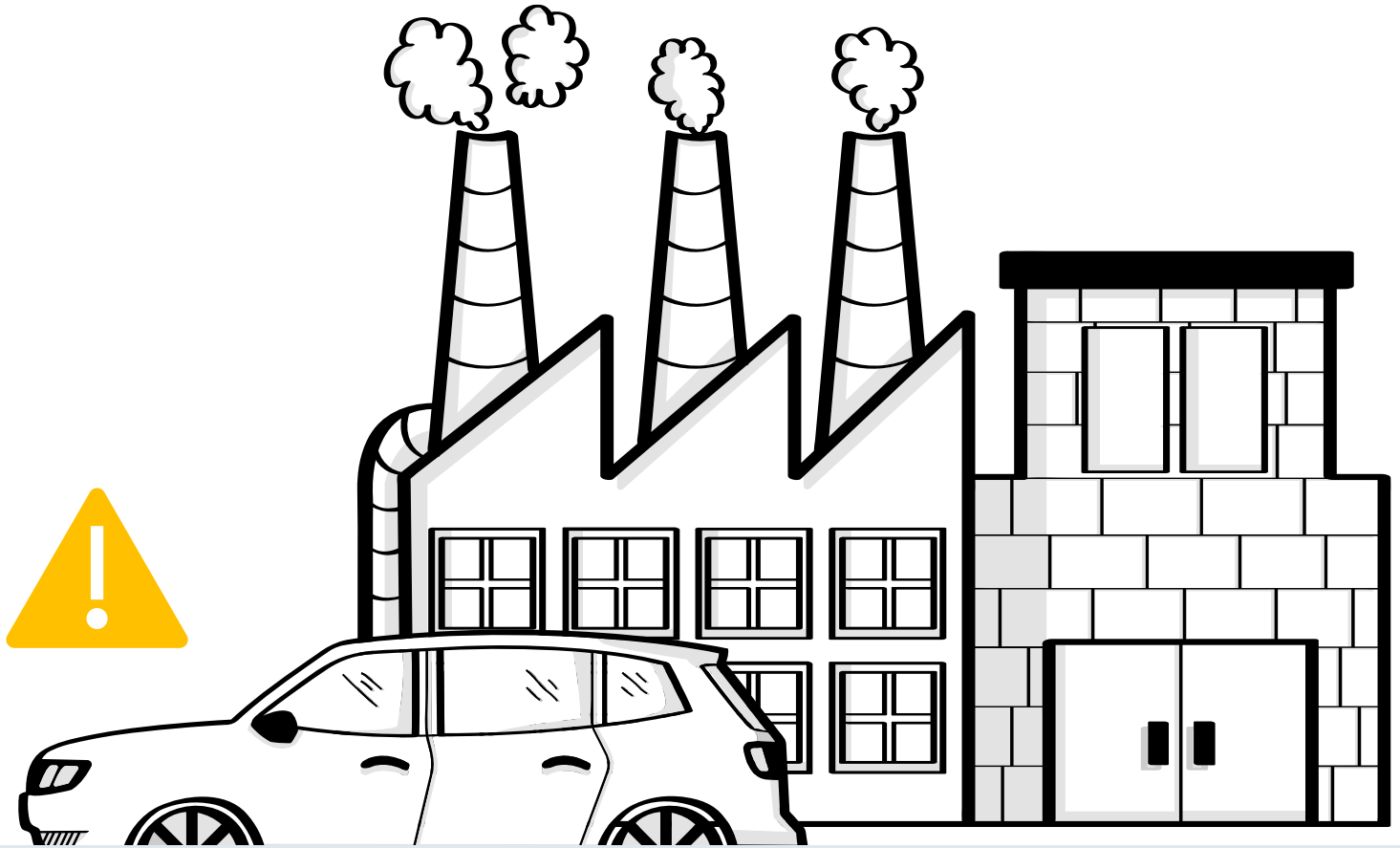


Devices



ROADSIDE ASSISTANCE STORY

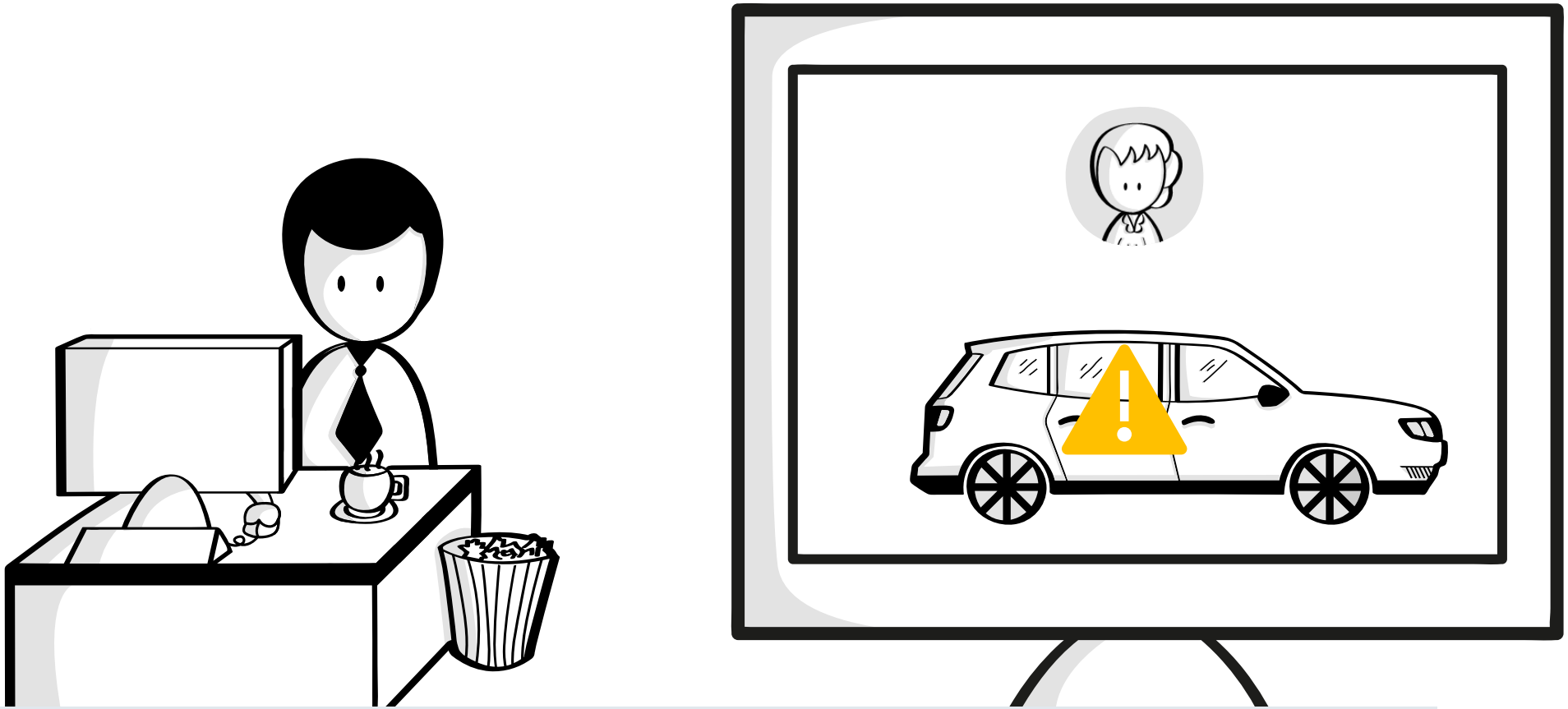
Use Case



Julia just left work and is now on the way home, When car suddenly suffers a breakdown
She has no clue why, she is unable to figure out the cause of the problem, And Julia contacts the roadside assistance through ADAC app, but is not able provide any additional information.

ROADSIDE ASSISTANCE STORY

Use Case



Julia just left work and is now on the way home, When car suddenly suffers a breakdown
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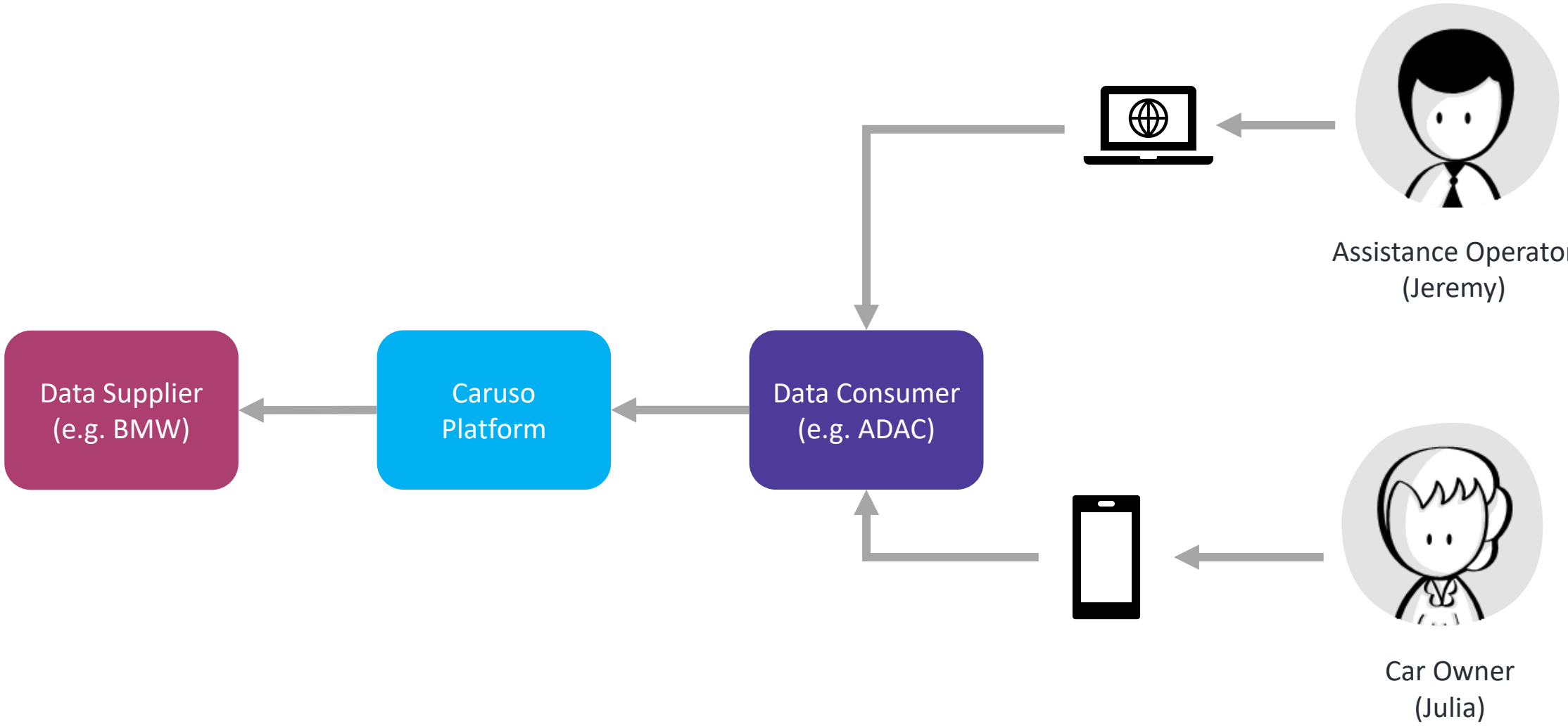
ROADSIDE ASSISTANCE STORY

Use Case

Julia is happy, Right service without delay, No hassle to contact and explain, ADAC is happy, Information was quickly processed, Right action was taken, Reduced operational costs, Increased customer trust

ROADSIDE ASSISTANCE INFORMATION FLOW

Use Case



ROADSIDE ASSISTANT

Use Case

Which systems to build

- Assistance Operator Dashboard
- Driver App

Assistant Operator Dashboard (Desktop)

- Receive help requests
- Fetch and display vehicle information
- Visualize problem
- See possible actions that can be taken
- Contact driver
- Contact towing/ on-site repair
- A simple request or customer overview

Driver App

- Vehicle information
- Send help request
- Receive instructions from the call center

VEHICLE TRACKING

Use Case

Data Items

Location, Vehicle status (door/ window/ engine/ light/ trunk/ sunroof), Last trip, Mileage, Speed, Acceleration

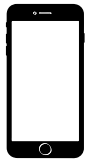
Alex

Car Owner

Lukas

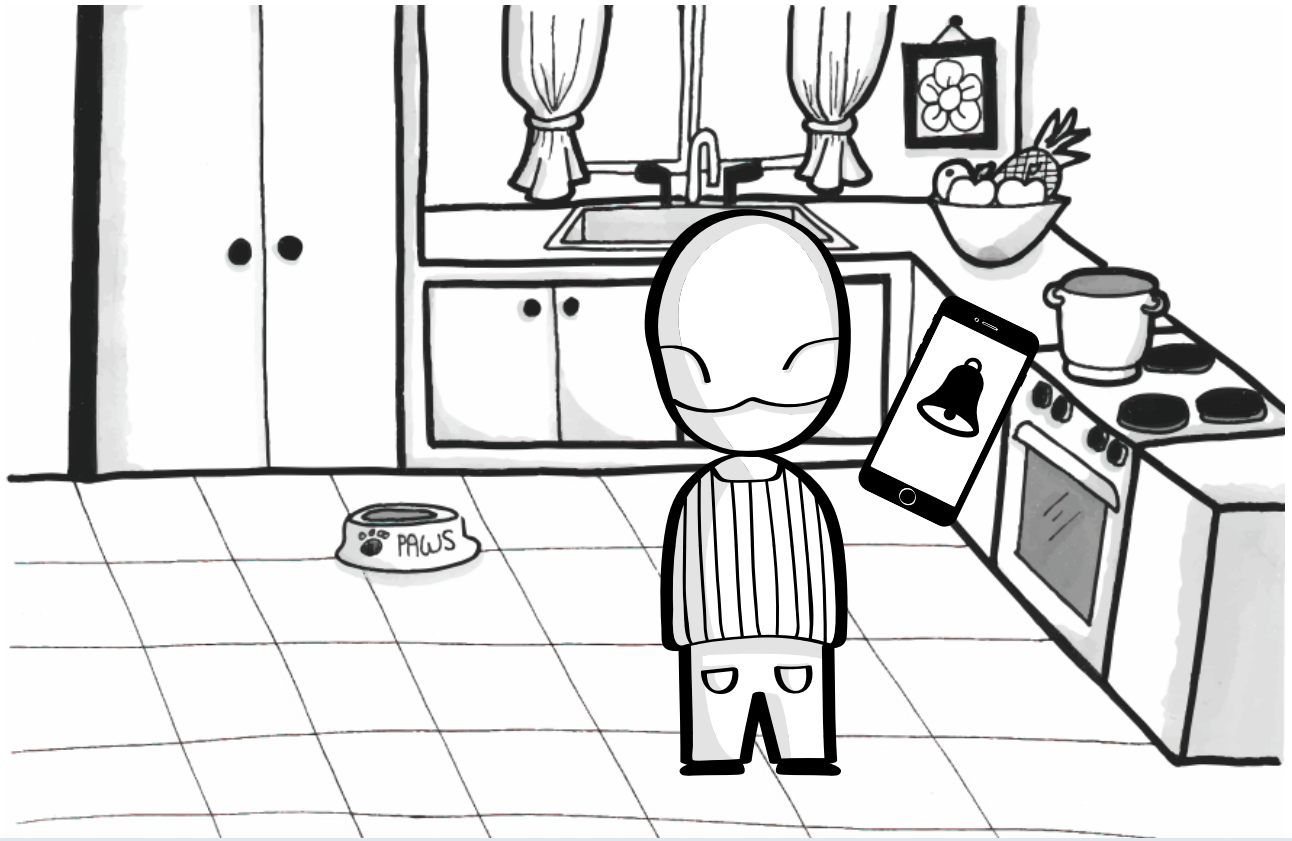
Son of Car Owner

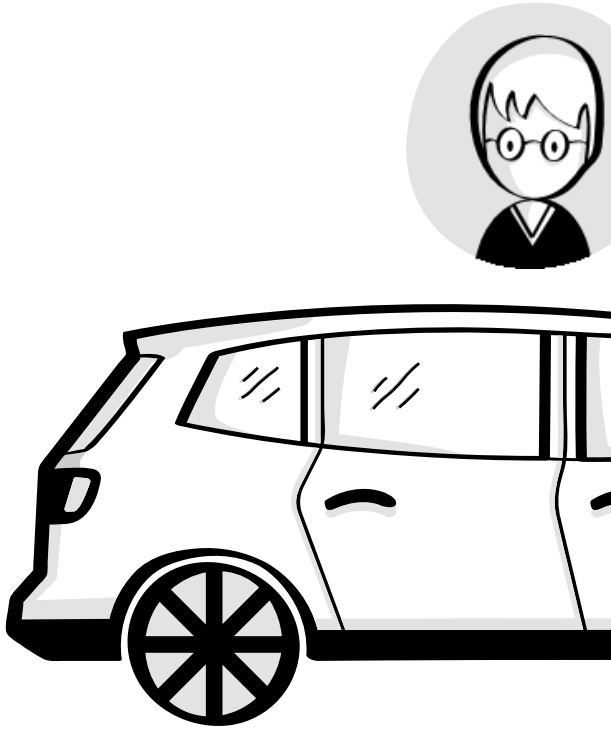
Devices



VEHICLE TRACKING STORY

Use Case

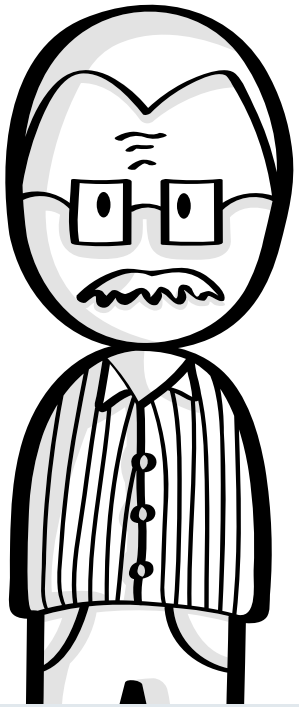


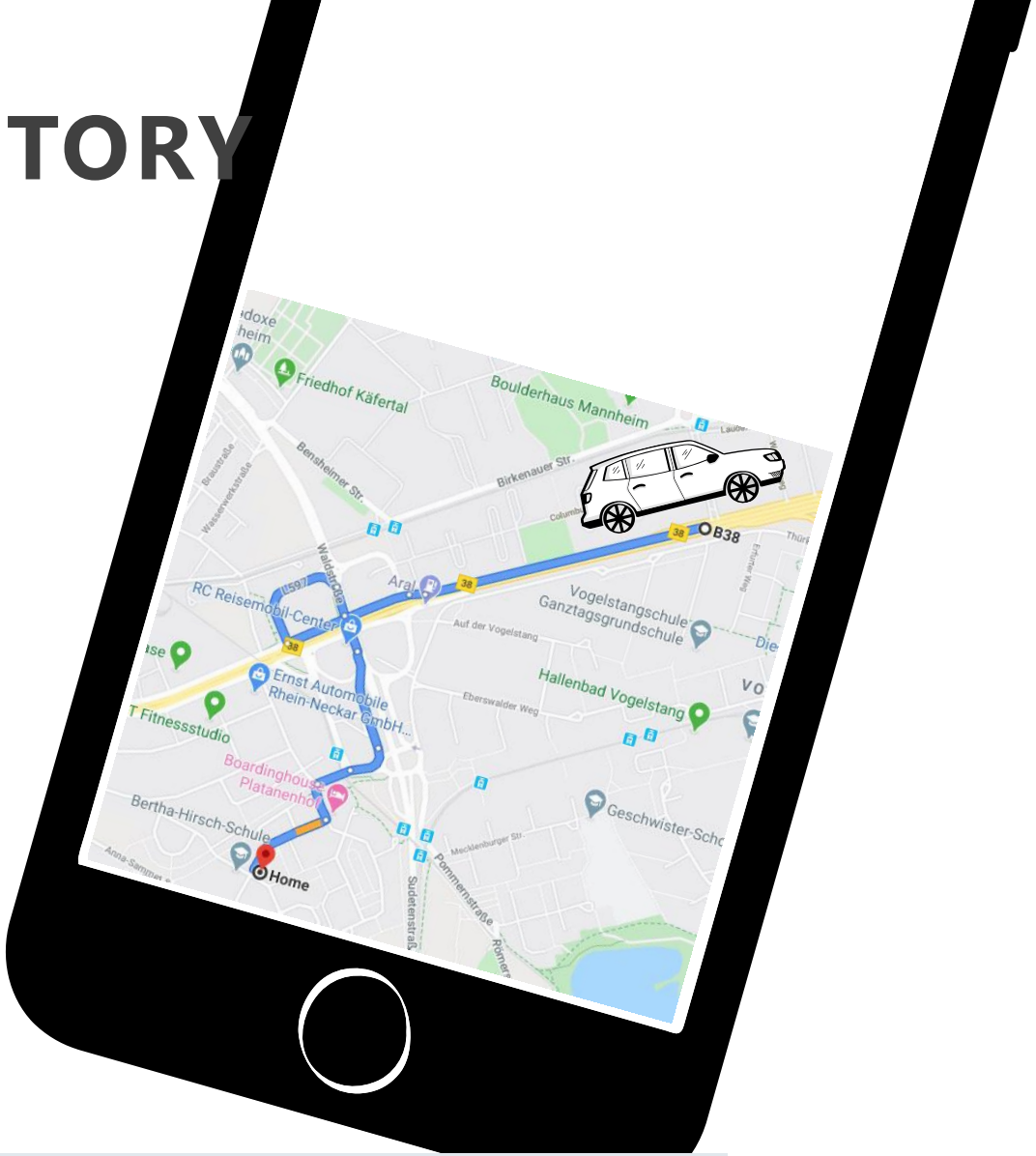


Alex was cooking after coming back from office. All of a sudden, he hears an alarm from his App.
Apparently there is some suspicious activity. He looks outside the window, someone has stolen his car!

VEHICLE TRACKING STORY

Use Case





Luckily for Alex he has installed a vehicle tracking app and can see the car's driving path and location.
He shares the information with police. And they are able to retrieve the car.

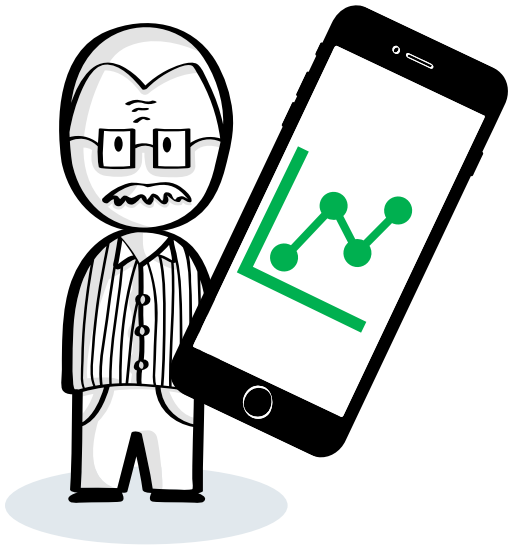
VEHICLE TRACKING STORY

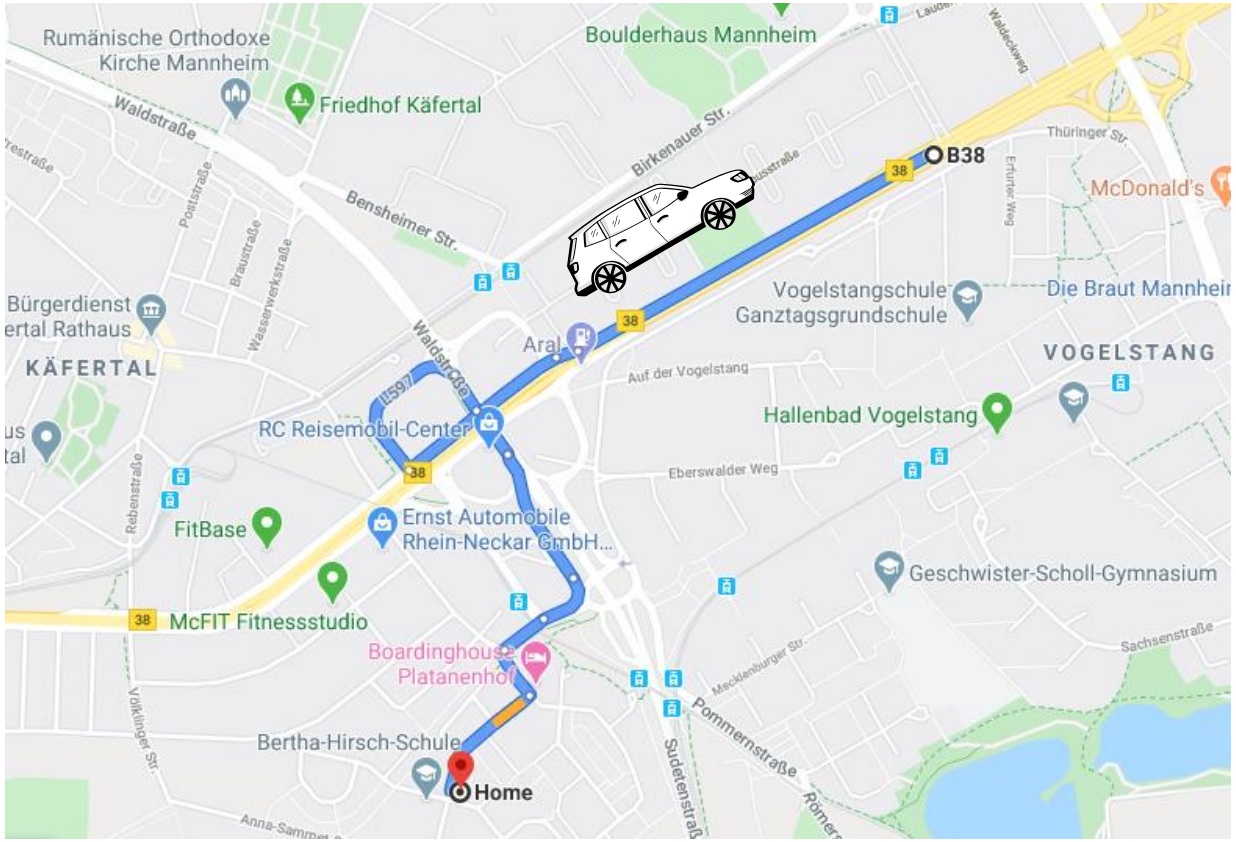
Use Case

On a different day. The son, Lukas is asking for car keys from his father Alex.
Alex says he would give him the keys, but Lukas has to drive carefully!

VEHICLE TRACKING STORY

Use Case





Alex starts vehicle tracking and can see Lukas how Lukas is driving and where he is.
To his satisfaction and ease of mind, Lukas is driving very carefully.

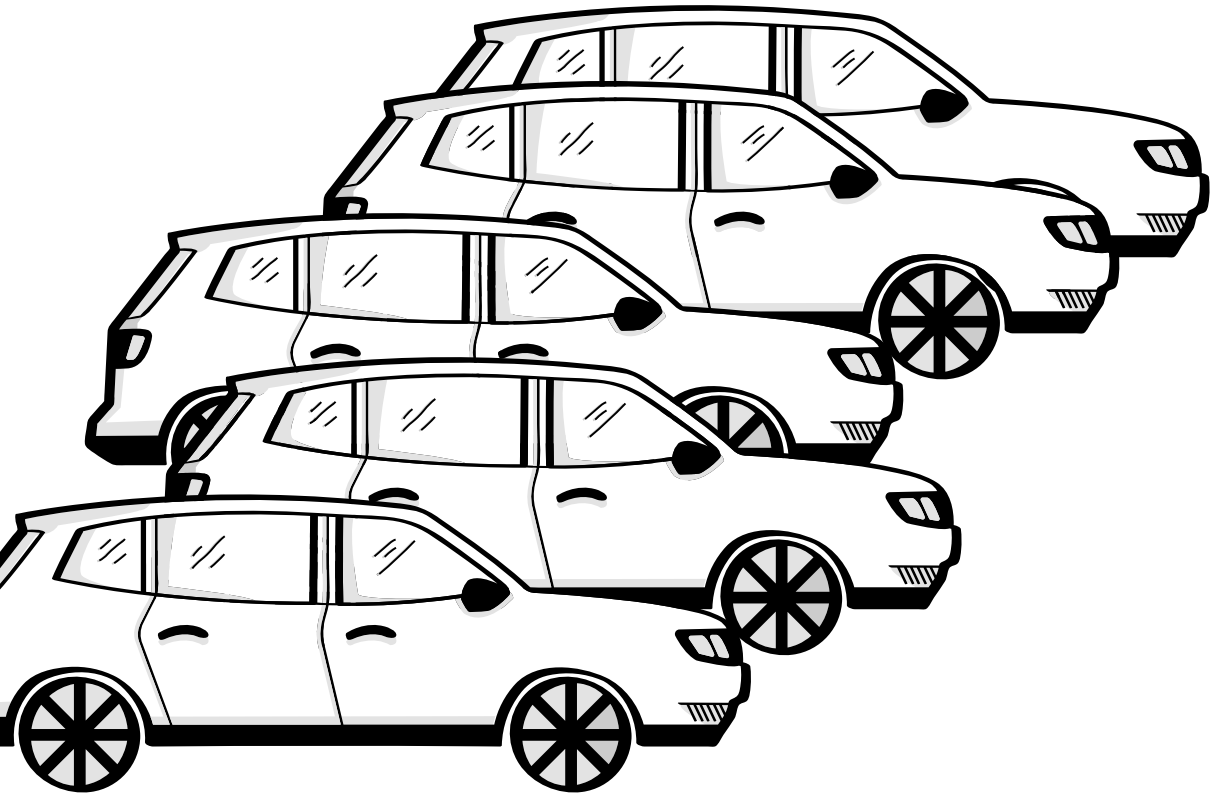
VEHICLE TRACKING STORY

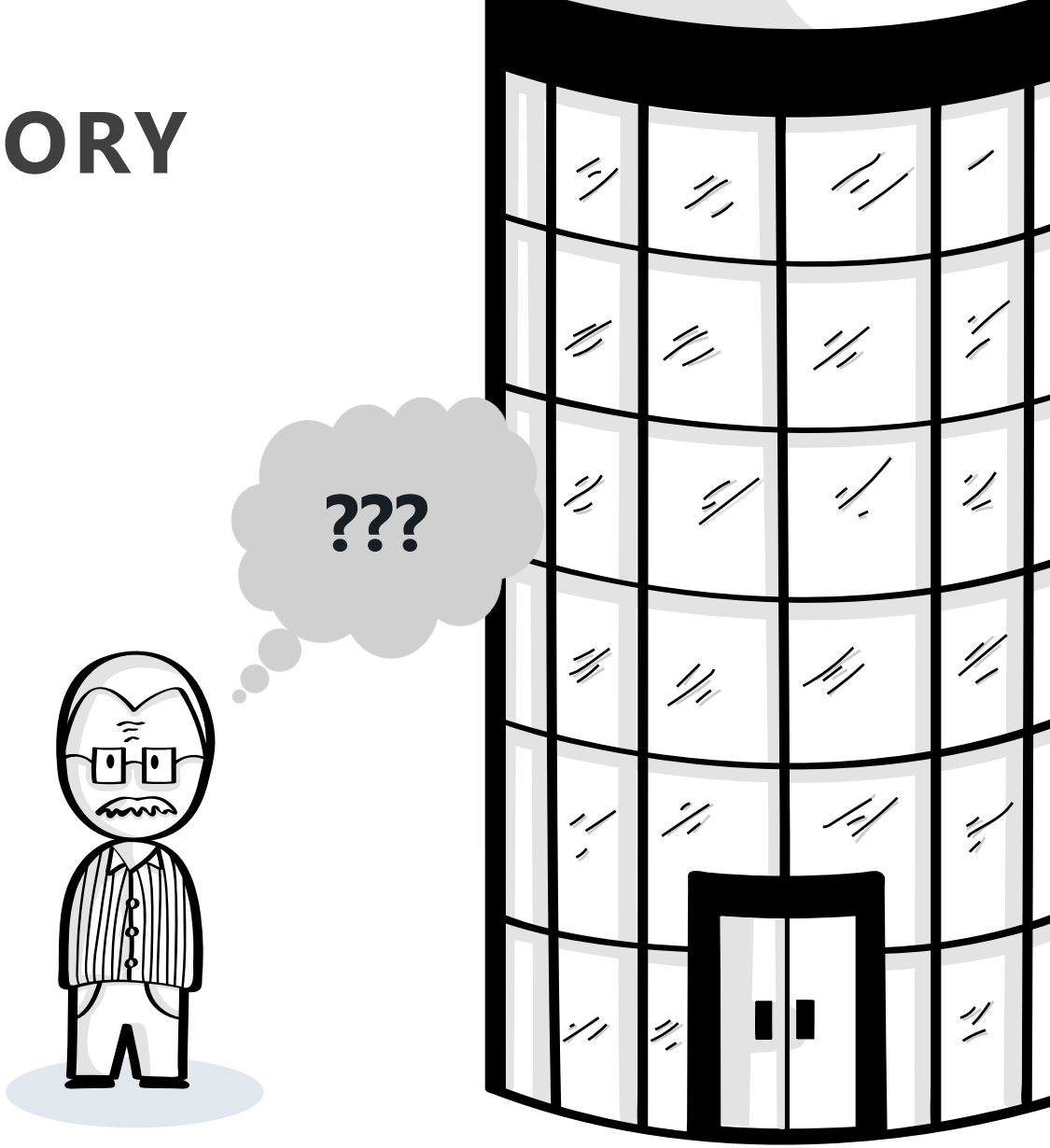
Use Case

A week after Alex has come to a business meeting in another city.

VEHICLE TRACKING STORY

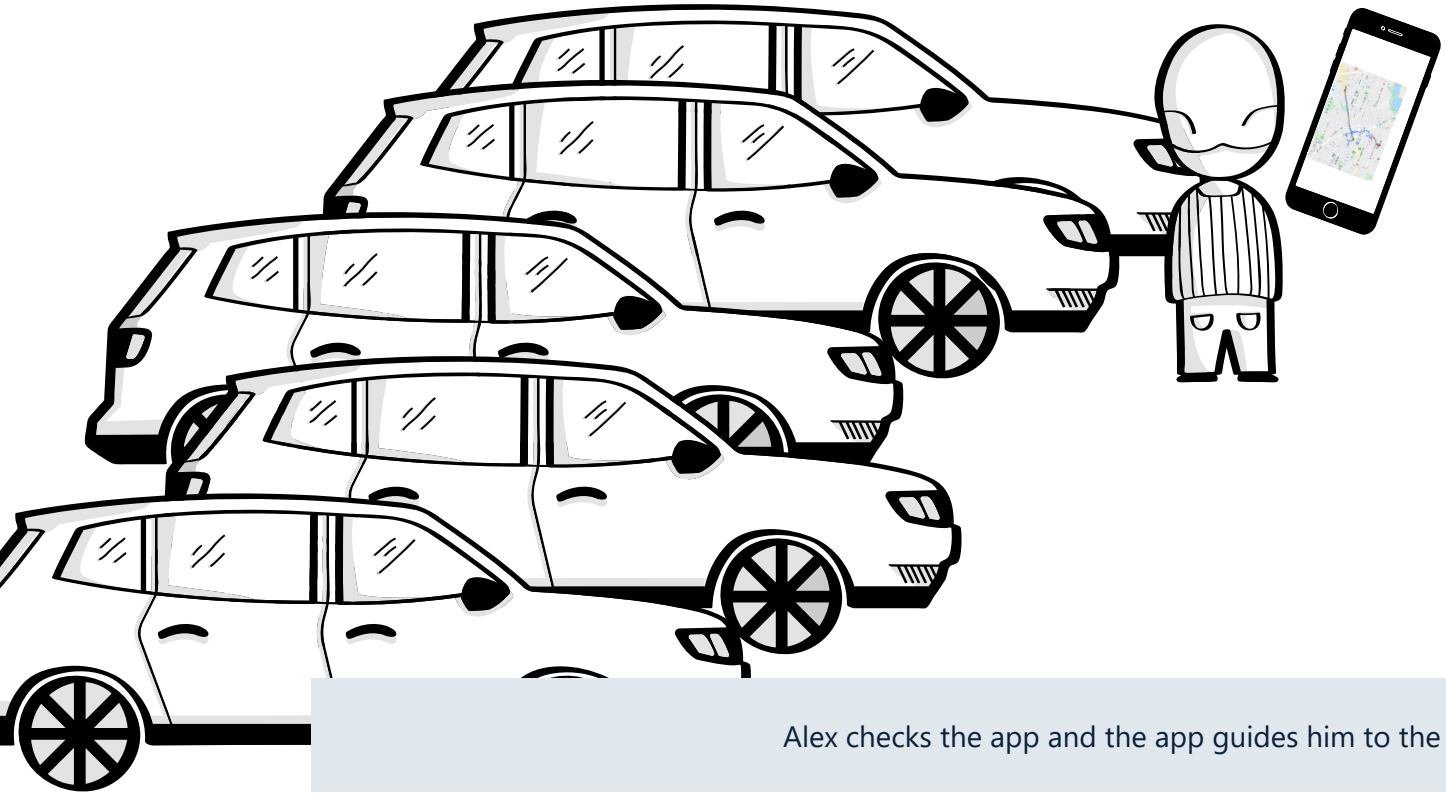
Use Case

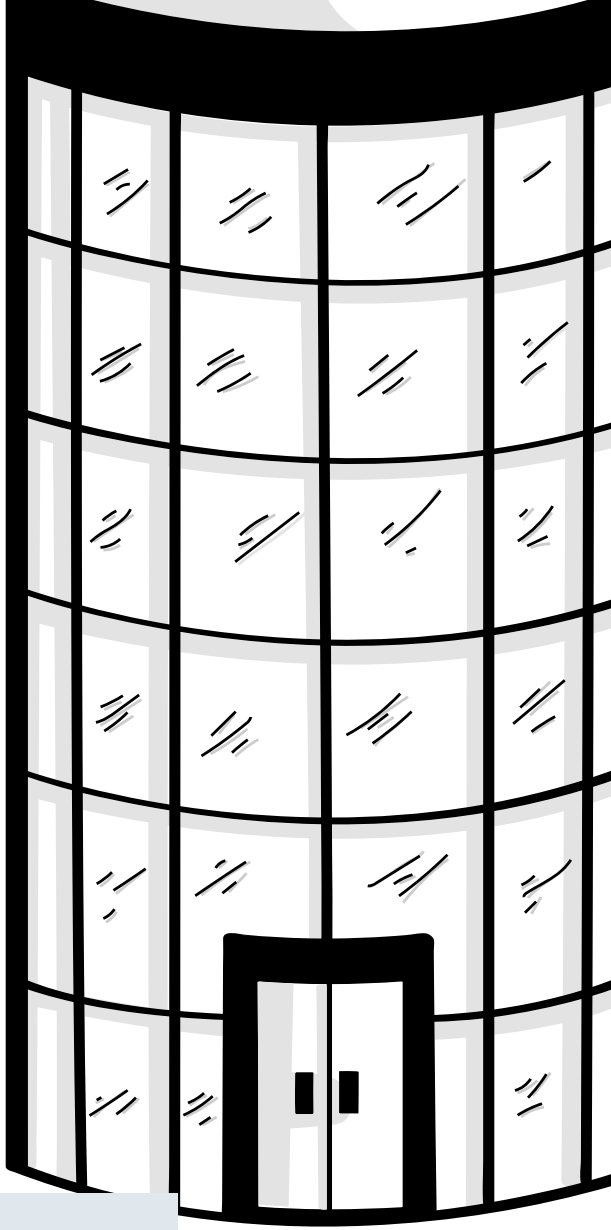




VEHICLE TRACKING STORY

Use Case

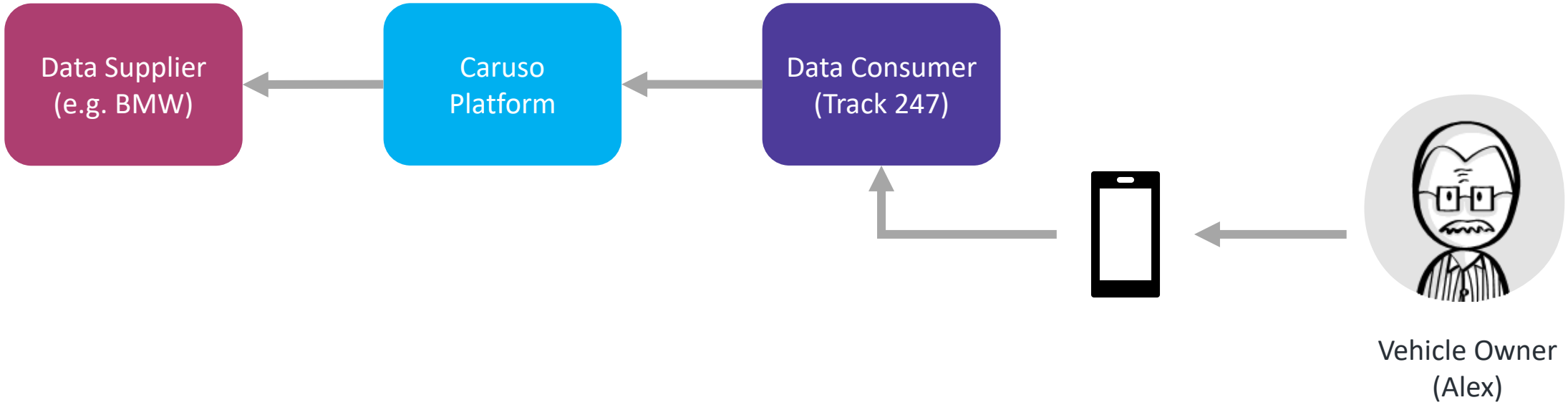




Alex checks the app and the app guides him to the parked location.

VEHICLE TRACKING INFORMATION FLOW

Use Case



VEHICLE TRACKING

Use Case

- Which systems to build
  - Driver App

- Driver App Functionality
  - Notify suspicious vehicle status – theft protection or keeping the battery charged
  - Stolen vehicle tracking
  - Enabling parents to monitor the driving behavior of their kids
  - Helping drivers to find out where they have parked
  - … (be innovative!)

CONSTRAINS

Project Details

Select Use Case

Favorite and Alternative

Use Caruso API

Integrate into your Product

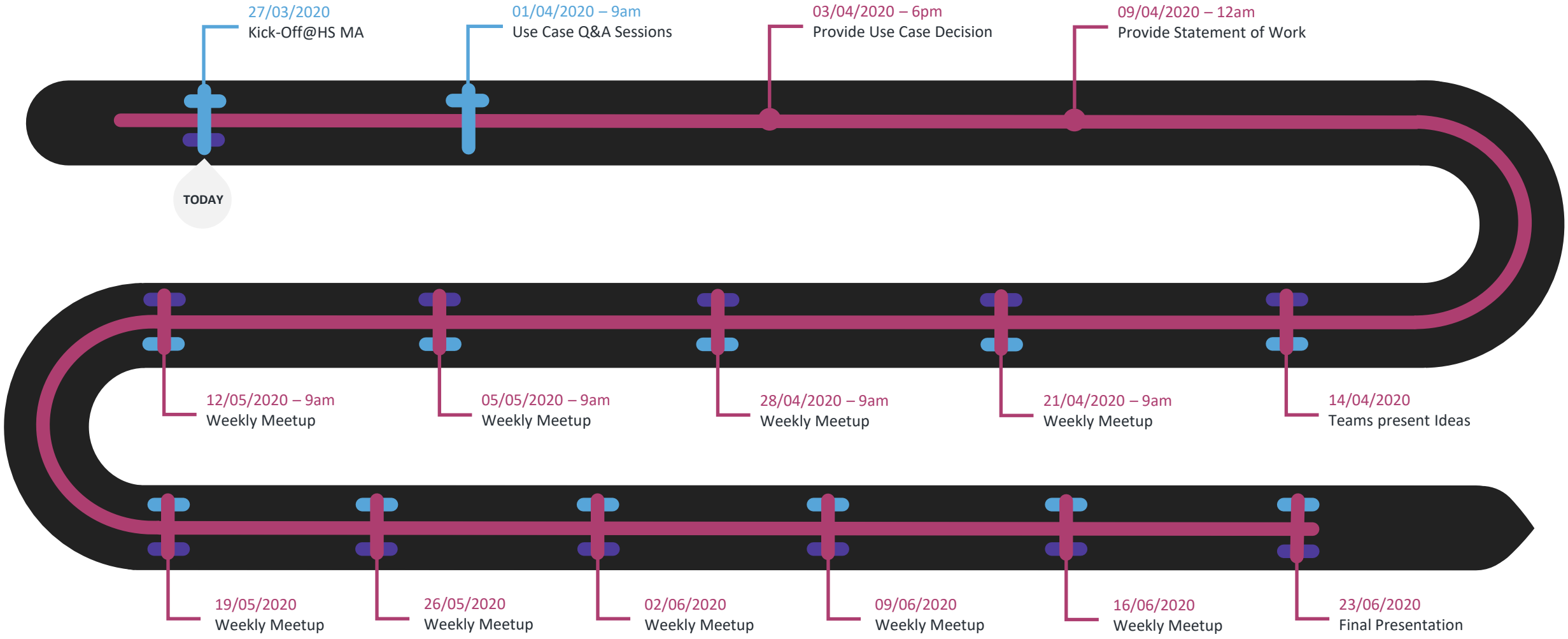
Easy to deploy

Run out of the box

PROJECT PLAN

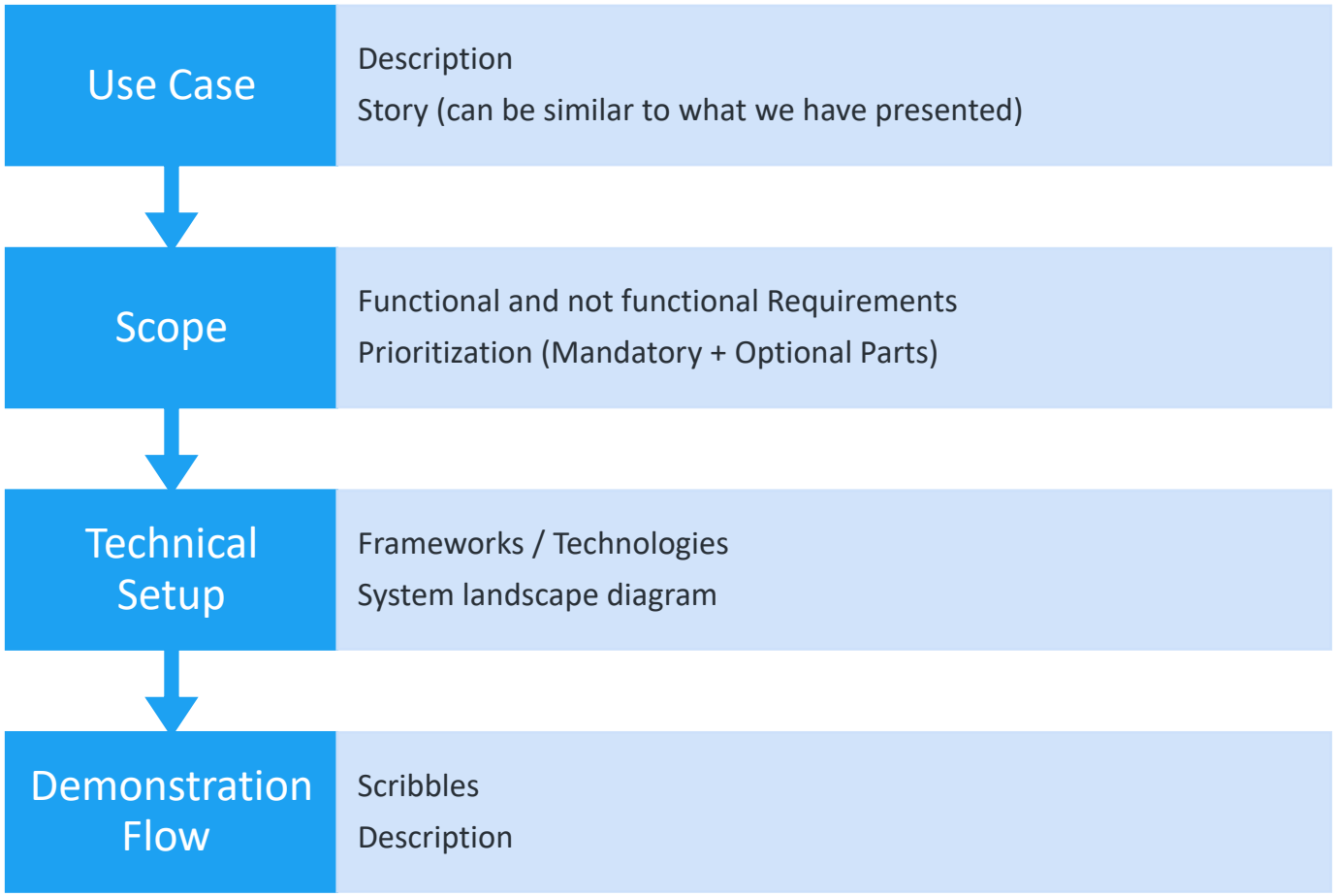
Project Details

Caruso
Students
Professors



CONTENT FOR STATEMENT OF WORK

Project Details



TECHNOLOGIES

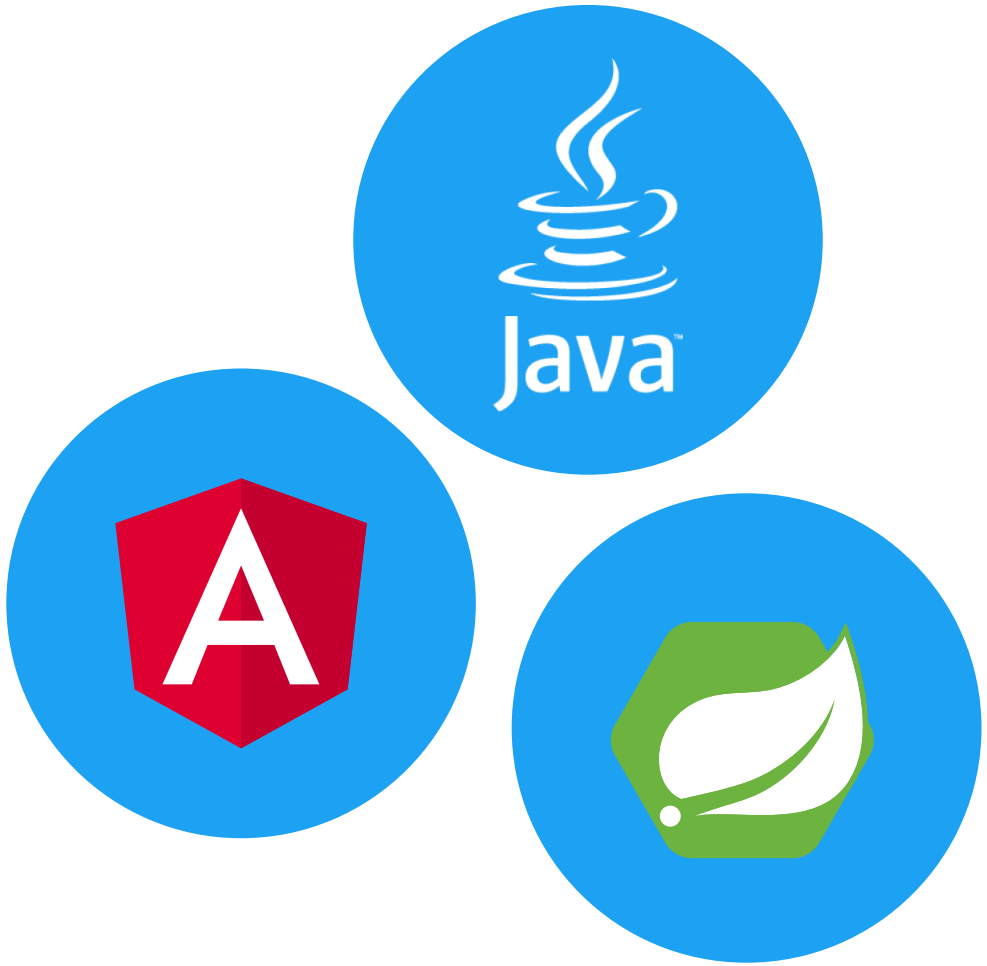
Project Details

Frontend

- Web Technologies (HTML / CSS / JS)
- Recommended: Angular 8+
- Alternative: React, Vue

Backend

- Recommended: Java / Spring Boot / MySQL (/ Redis)
- Alternative: NodeJS / ExpressJS / MongoDB (/ Mongoose)



REPOSITORY AND COMMUNICATION

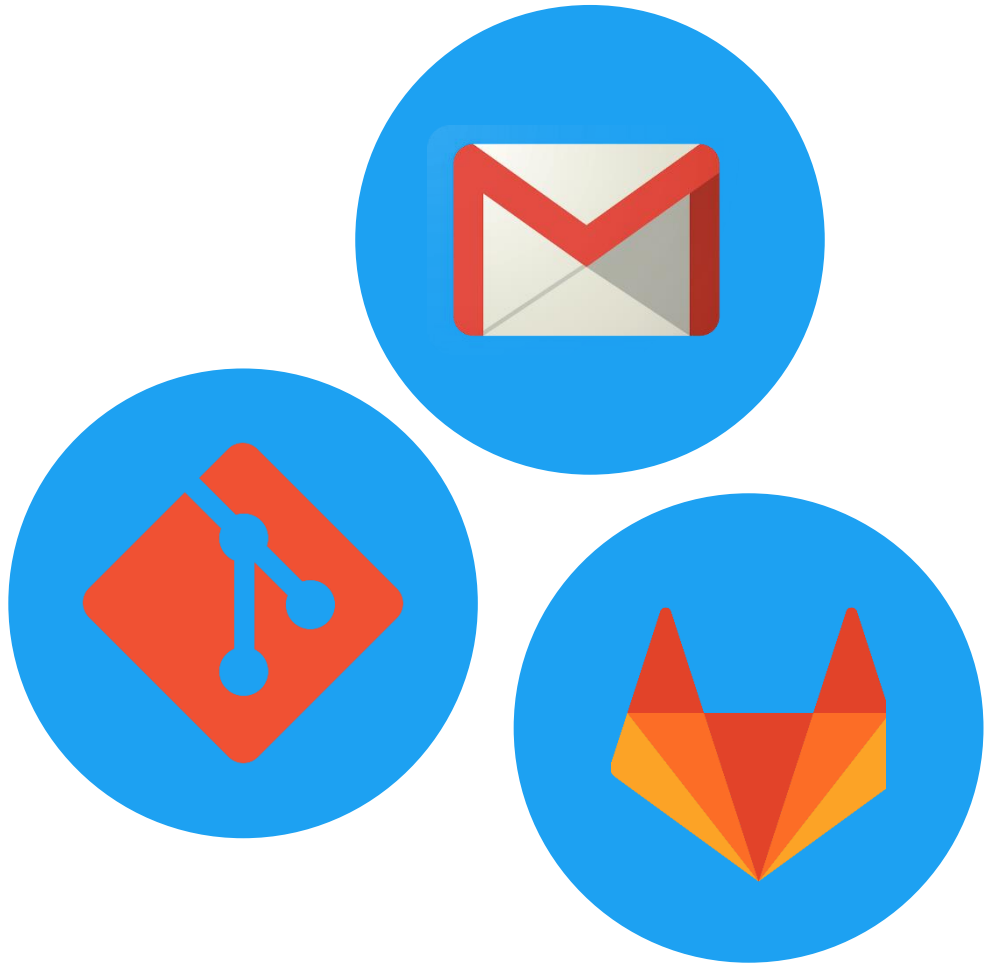
Project Details

Git / Gitlab

- Caruso provides git repositories through Gitlab

Contact per Mail

- Each group will get a dedicated contact person to ask questions
- Name one dedicated key contact per group to us
- Contact us via mail: sep2020@caruso-dataplace.com
- For urgent topics/questions, write directly. Otherwise gather questions per group & write once per day.
- We try to respond within 24h (but exceptions may happen ;-))



FINAL PRESENTATION & PROJECT SUBMISSION

Project Details

- Installation Guide
- Live Demo
- Slides in advance
- More details could follow ☺

EVALUATION CRITERIA

Project Details

Presentable

Match Requirements (I.e. Use Case, Statement of Work)

Good UX (easy to handle and understand)

Concept

Idea / Innovation (We provide the basic Use Case but you have to shape it into a detailed concept)

Artefacts

Deliverables (Statement of Work, Presentations, Installation Guide, Demonstration Flow)

Source Code (Documentation, Clean Code)

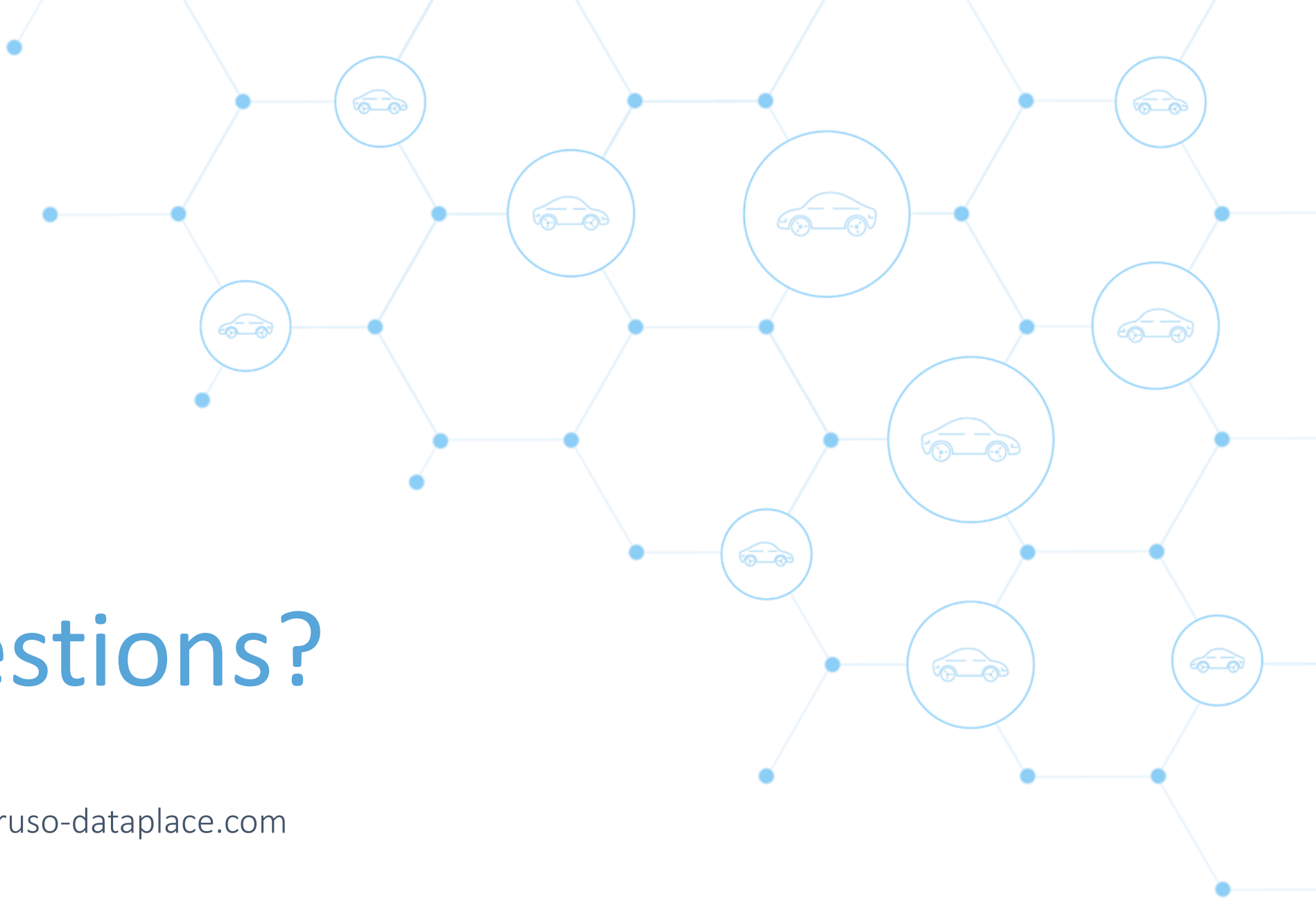
Your Motivation

Effort

Engagement

#carusodataplace

CARUSO dataplace



Thanks!

Any Questions?

Contact us: SEP2020@caruso-dataplace.com