MSP Report - Sprint 1

Franka Traupe, Roschanak Babai, Niklas Sander, Valeriia Baida, Guilherme Fernandes

Github Repository: `https://github.com/niklassander/MSP/releases/tag/Sprint1_Submission`

Roles

Scrum Master: Franka Traupe
Product Owner: Guilherme Fernandes
Quality Controller: Niklas Sander
Development Team: Roschanak Babai, Valeriia Baida

Features

(Proposal for sprint 2 highlighted in bold)

Basic Features (Implemented in prototype)

- Register account
- Register type of vehicle
- Define route
- Alert if speed limit is violated
- Calculate estimated time of arrival

Features from Existing System

- **Bookmarking (home, work)**
- Avoid tolls
- **Recent destinations**
- Show current speed (implemented already as part of speed alerts)
- Parking lots
- **Hazard reports**
- **Change units**

New Features

- **Statistics: usage and driving quality (rate of speed violations etc.)**
- Walking route
- Shared ride

Project Planning

Task Table

Task ID	Task	Duration (days)	Depends on
1	Explore original app & choose features	3	-
2	Review chosen features	1	1
3	Develop BPMNs for each feature	4	2
4	Review BPMNs	1	3
5	Front-end development	7	4
6	Back-end development	7	4
7	Integrate front-end and back-end	2	5,6
8	Testing	2	7
9	Bug Fixing	1	8

Table 1: Task List with Dependencies

Gantt Chart

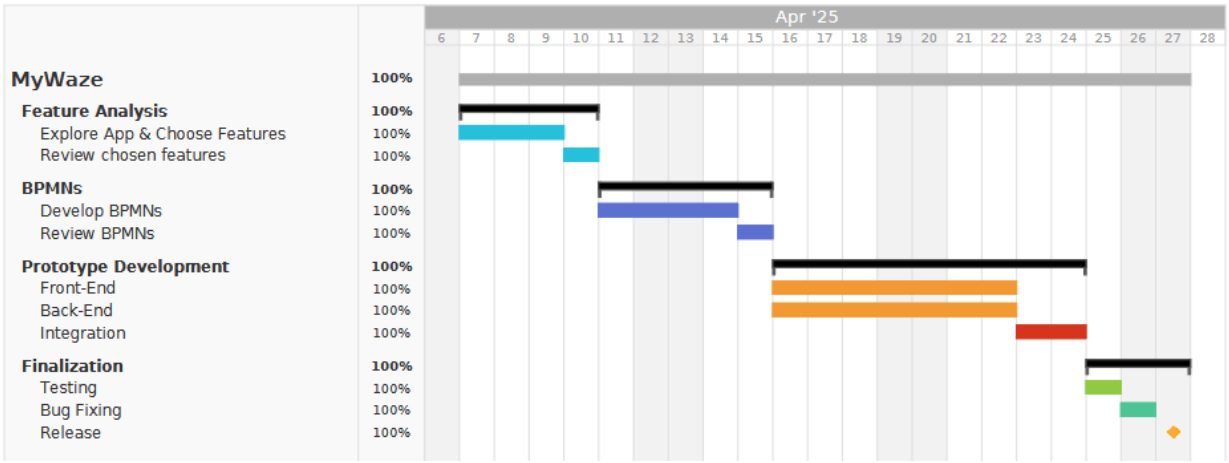


Figure 1: Gantt Chart

Burndown Chart

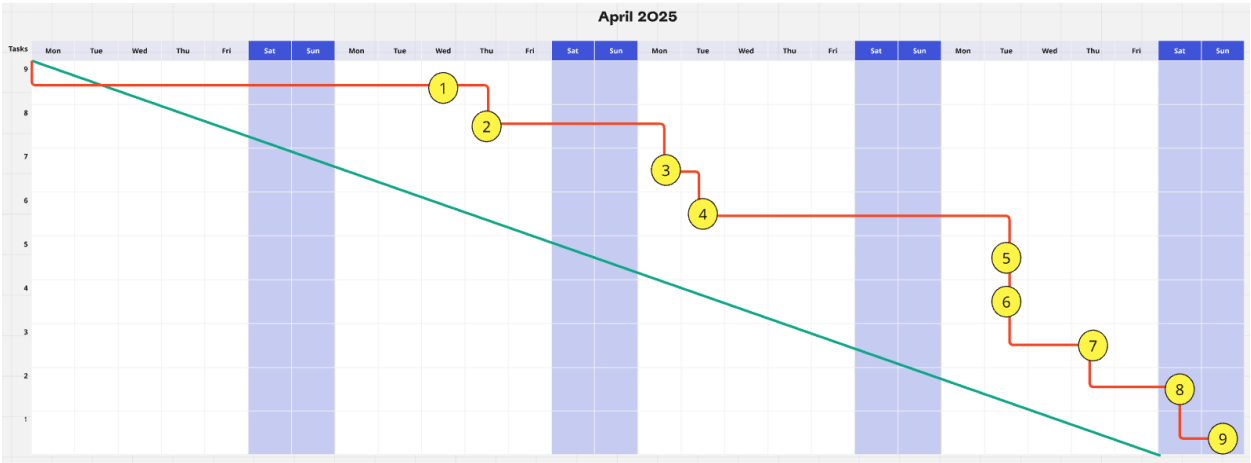


Figure 2: Burndown Chart

Requirements Diagram

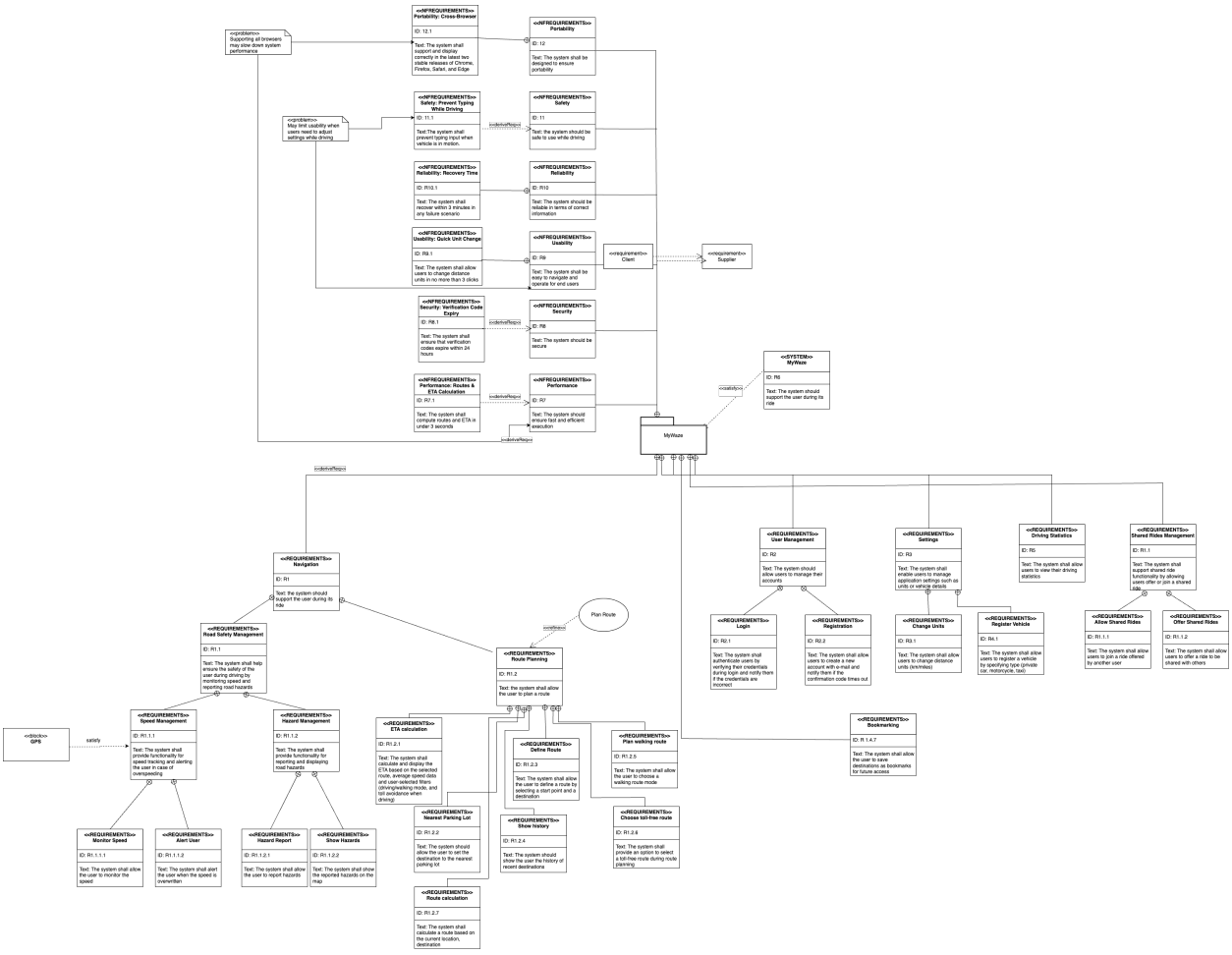


Figure 3: Requirements Diagram

Mapping from Features to Models

Feature	**Model**
Overall process	MyWaze.bpmn
Register account	MyWaze_registerAccount.bpmn
Recent destinations	MyWaze_defineDestination.bpmn
Define route	MyWaze_defineRoute.bpmn, MyWaze_calculateRoute.bpmn
Avoid tolls	MyWaze_defineRoute.bpmn
Walking route	MyWaze_defineRoute.bpmn
ETA	MyWaze_defineRoute.bpmn
Current speed	MyWaze_navigate.bpmn, MyWaze_speedMonitoring.bpmn
Speed alert	MyWaze_navigate.bpmn, MyWaze_speedMonitoring.bpmn
Find parking lots	MyWaze_navigate.bpmn, MyWaze_defineRouteToParkingLot.bpmn, MyWaze_calculateRoute.bpmn
Hazard reports	MyWaze_navigate.bpmn, MyWaze_reportHazard.bpmn
Share ride	MyWaze.bpmn, MyWaze_registerRideOffering.bpmn, MyWaze_arrangeSharedRide.bpmn
Bookmarking	MyWaze.bpmn, MyWaze_createBookmark.bpmn
Statistics	MyWaze.bpmn, MyWaze_provideStatistics.bpmn
Change units	MyWaze.bpmn, MyWaze_changeUnits.bpmn
Register vehicle type	MyWaze.bpmn, MyWaze_registerVehicleType.bpmn

BPMN Models

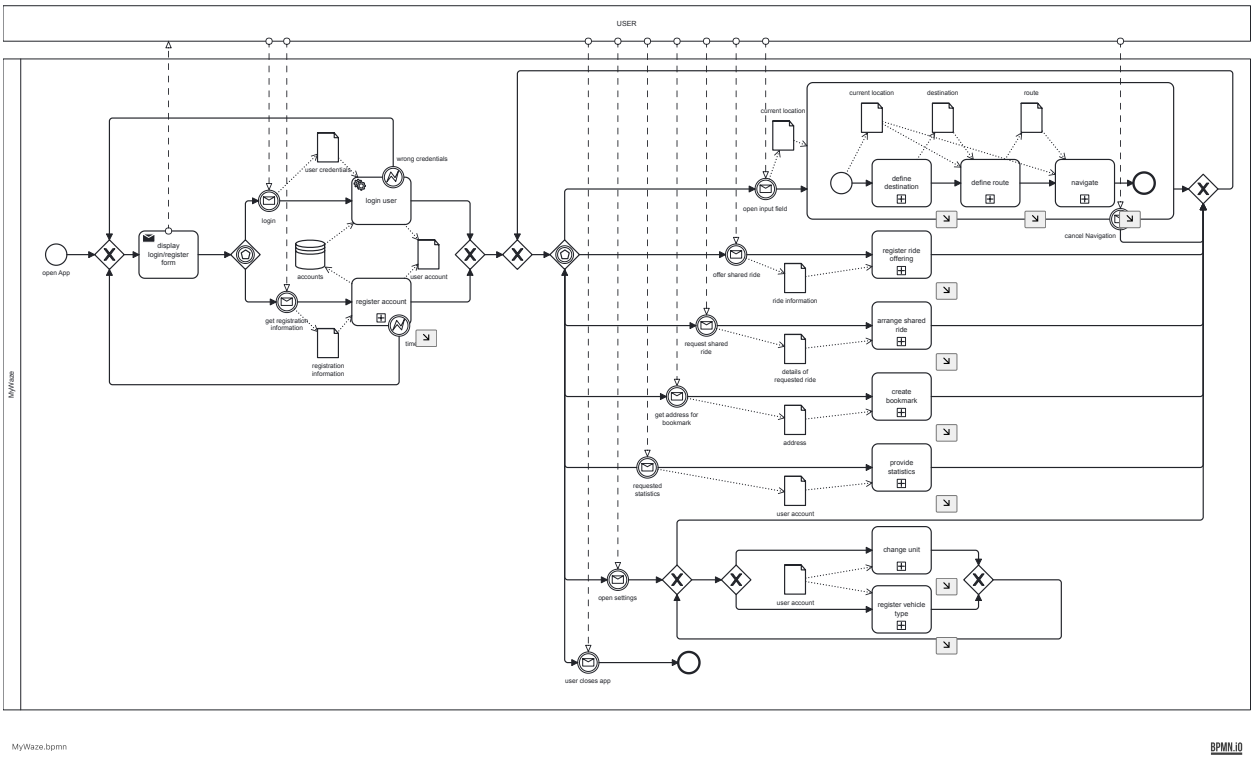


Figure 4: Model: MyWaze

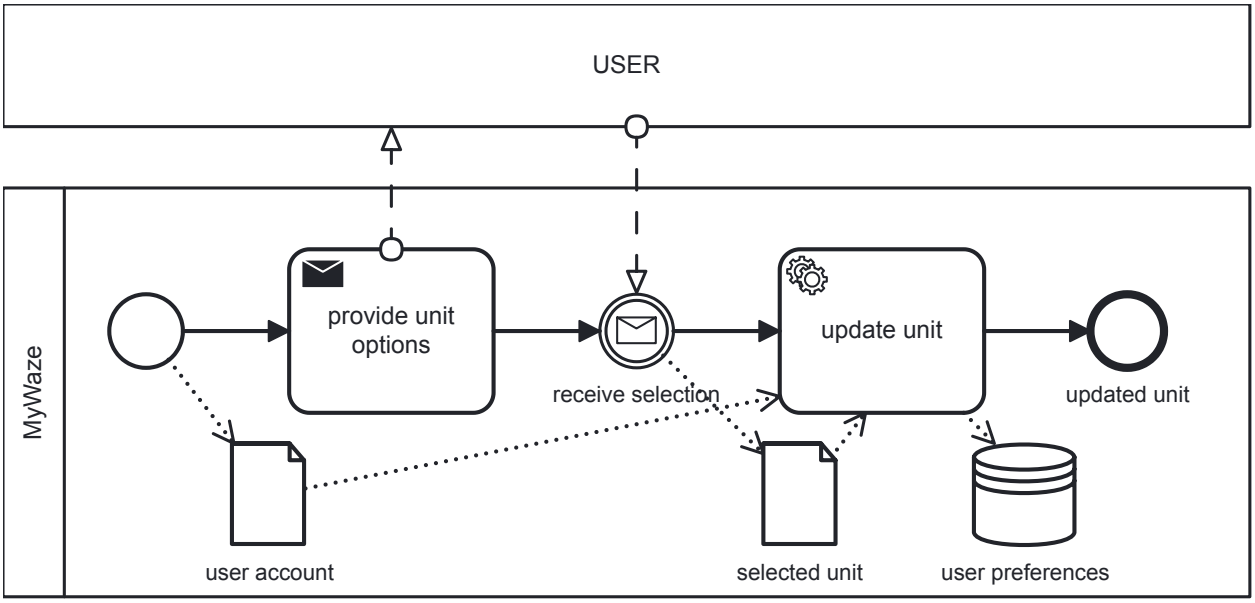


Figure 5: Model: MyWaze˙ChangeUnit

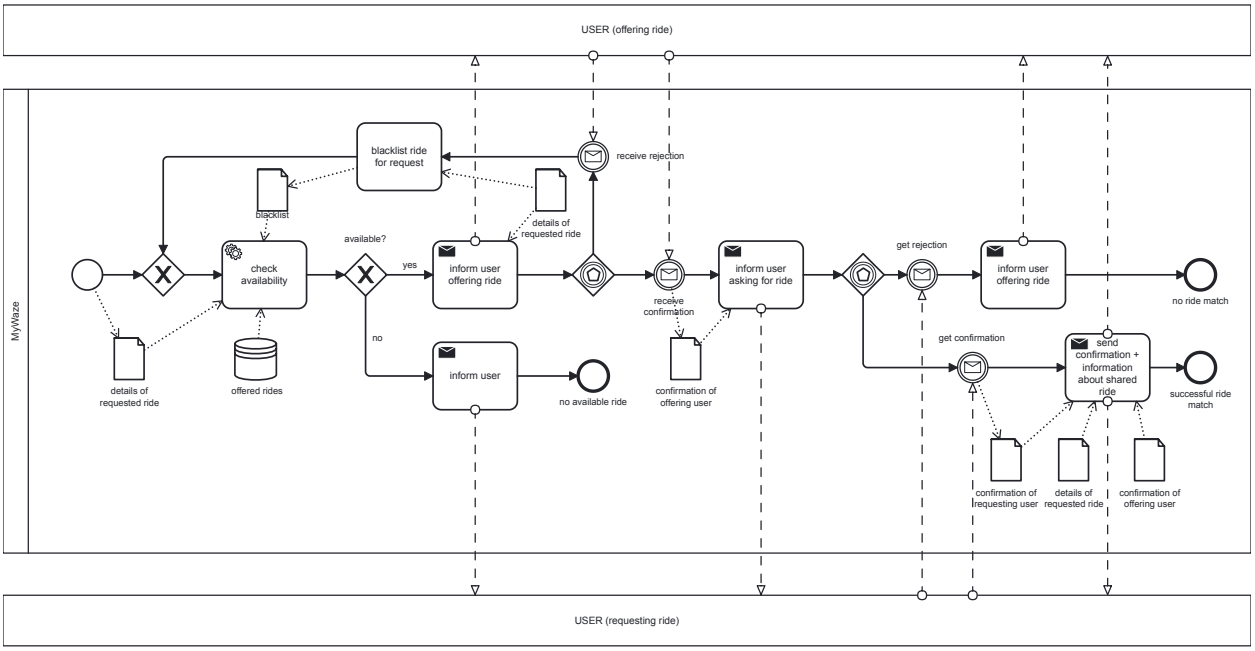


Figure 6: Model: MyWaze˙arrangeSharedRide

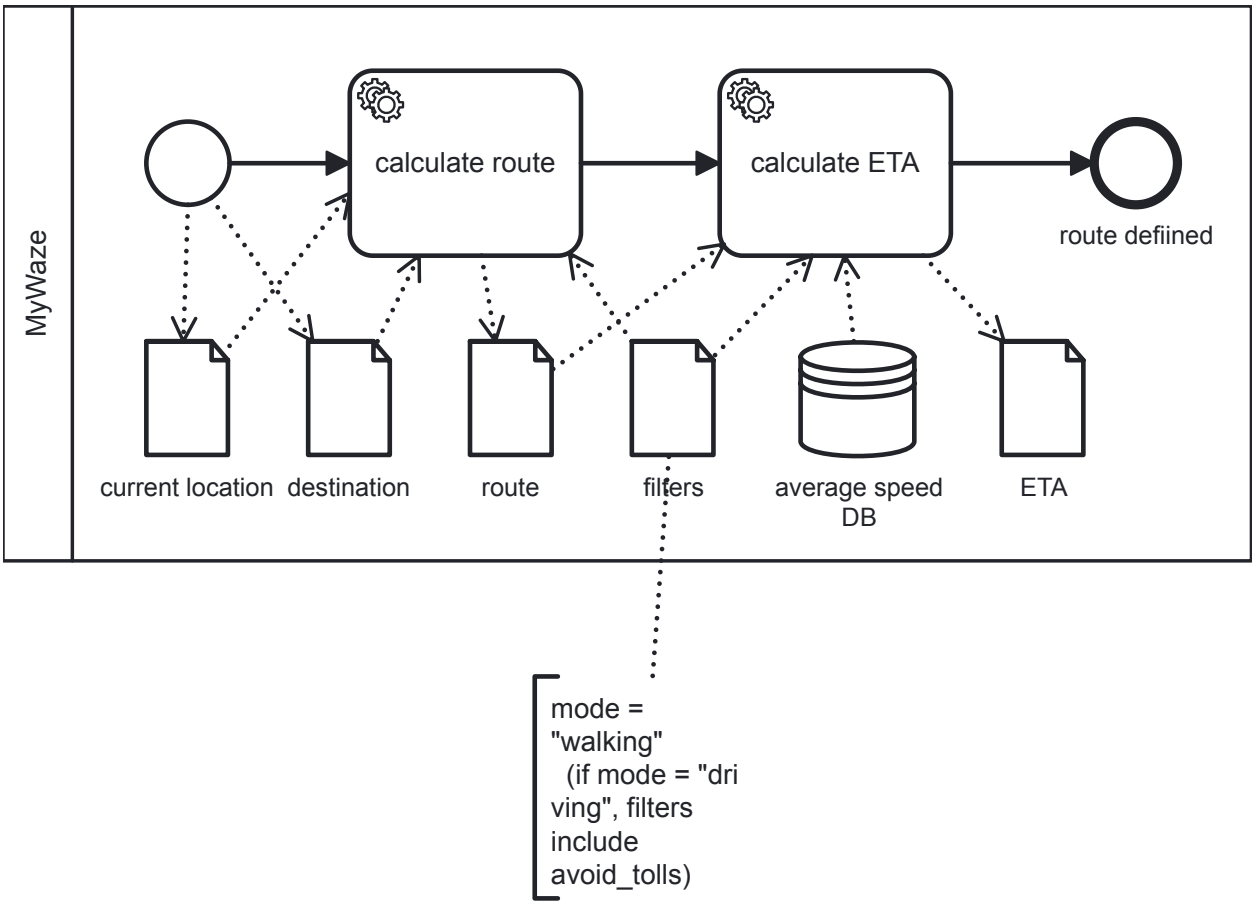
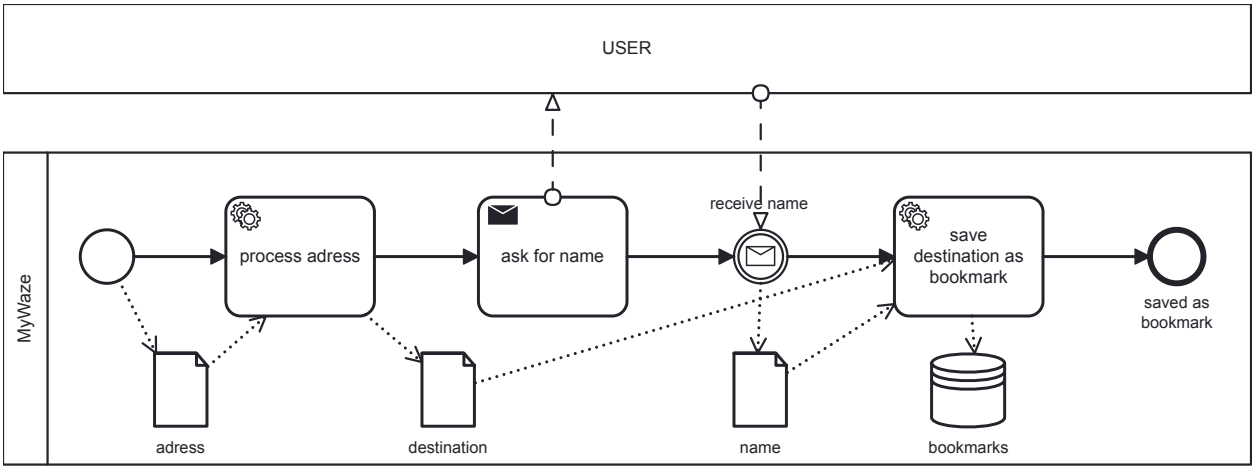


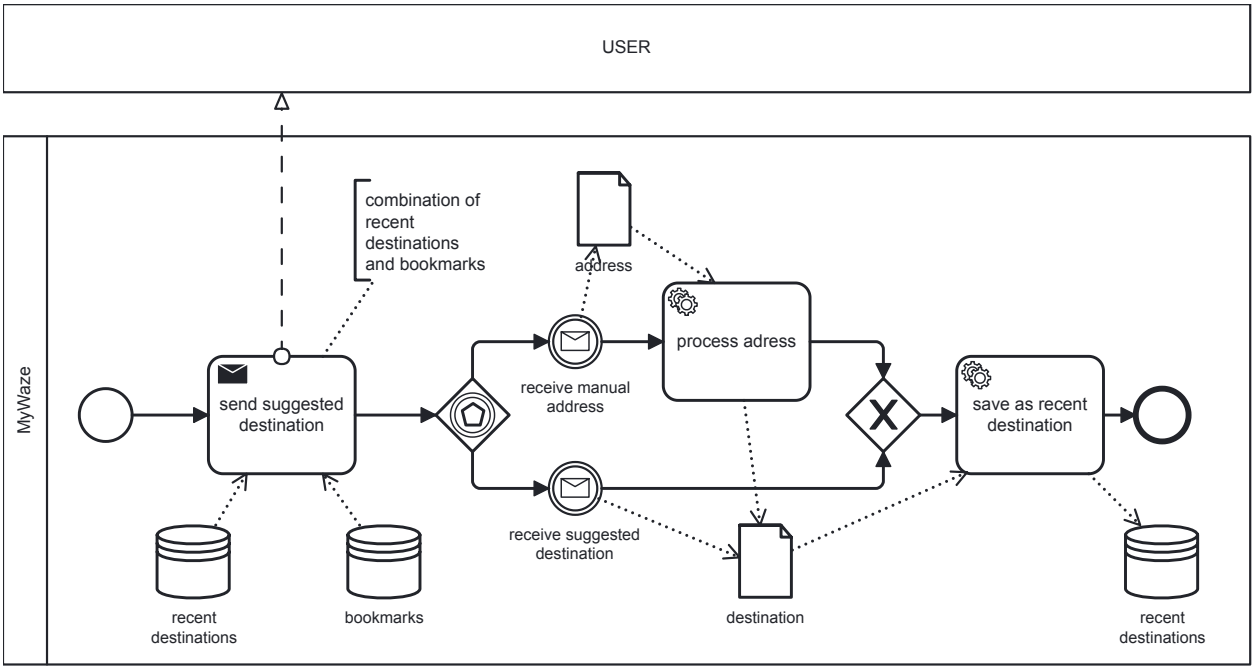
Figure 7: Model: MyWaze˙calculateRoute



MyWaze_createBookmark.bpmn

BPMN.iO

Figure 8: Model: MyWaze˙createBookmark



MyWaze_defineDestination.bpmn

BPMN.iO

Figure 9: Model: MyWaze˙defineDestination

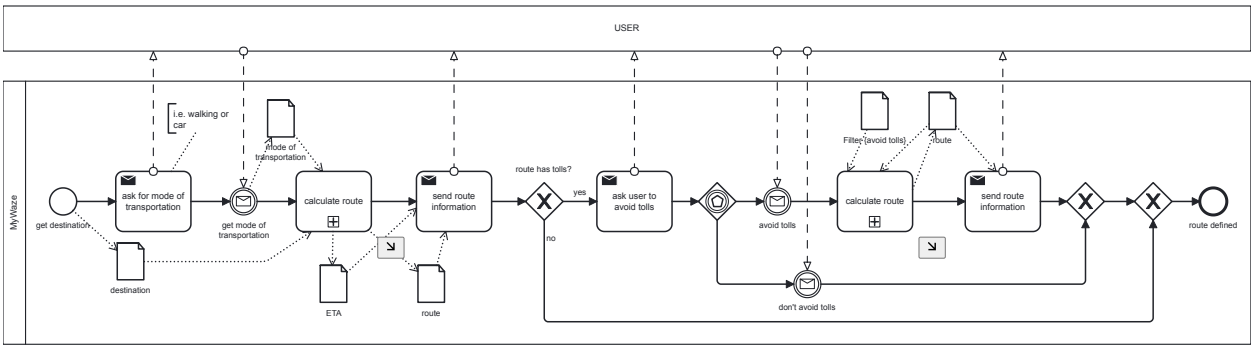


Figure 10: Model: MyWaze˙defineRoute

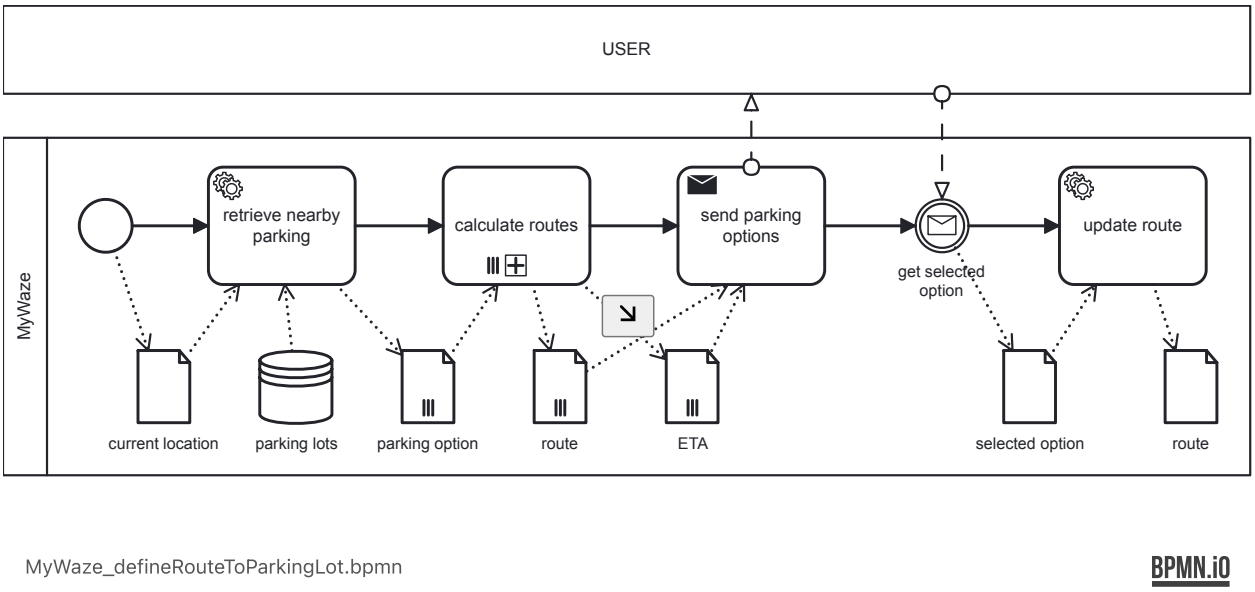


Figure 11: Model: MyWaze˙defineRouteToParkingLot

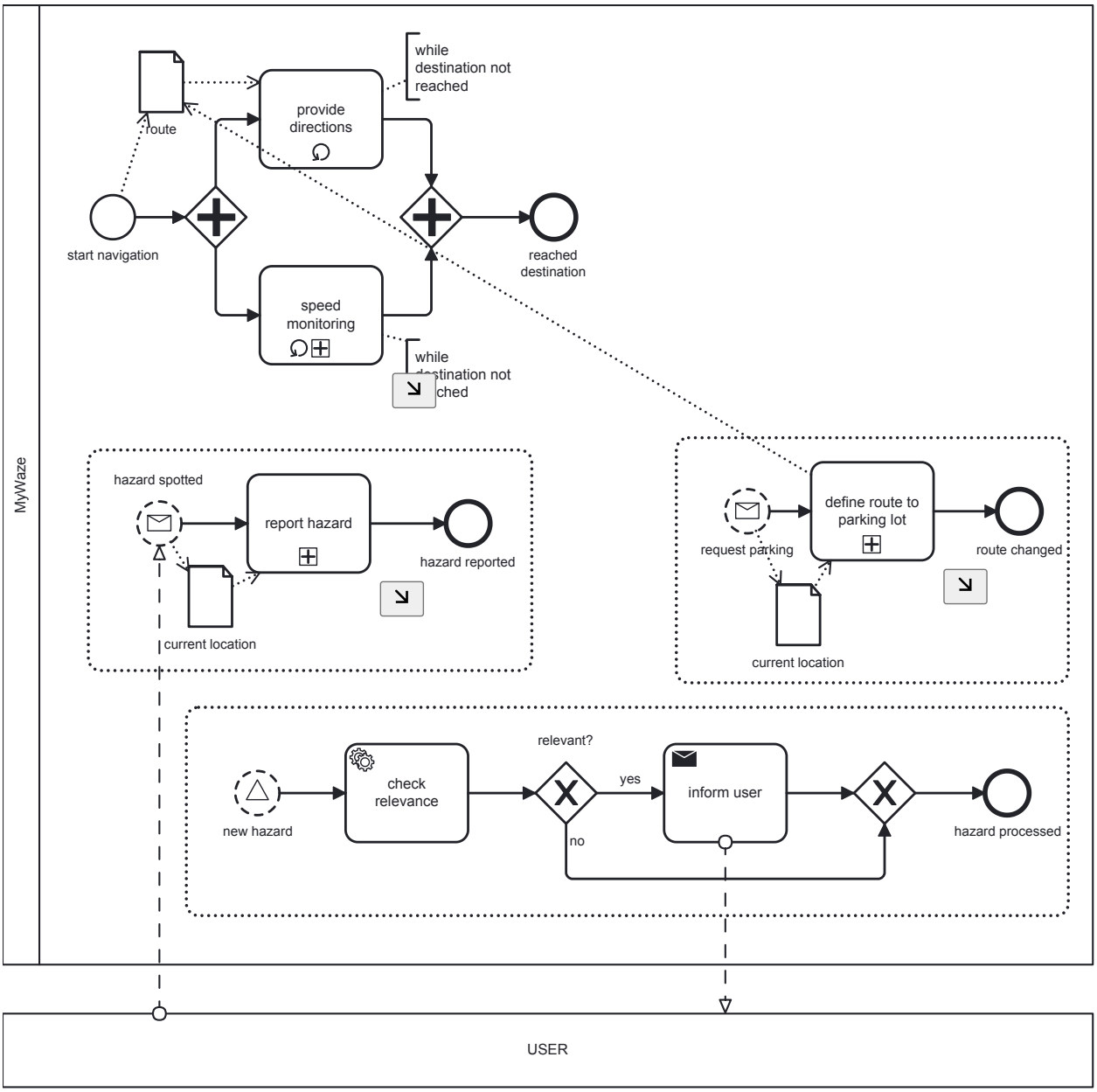


Figure 12: Model: MyWaze˙navigate

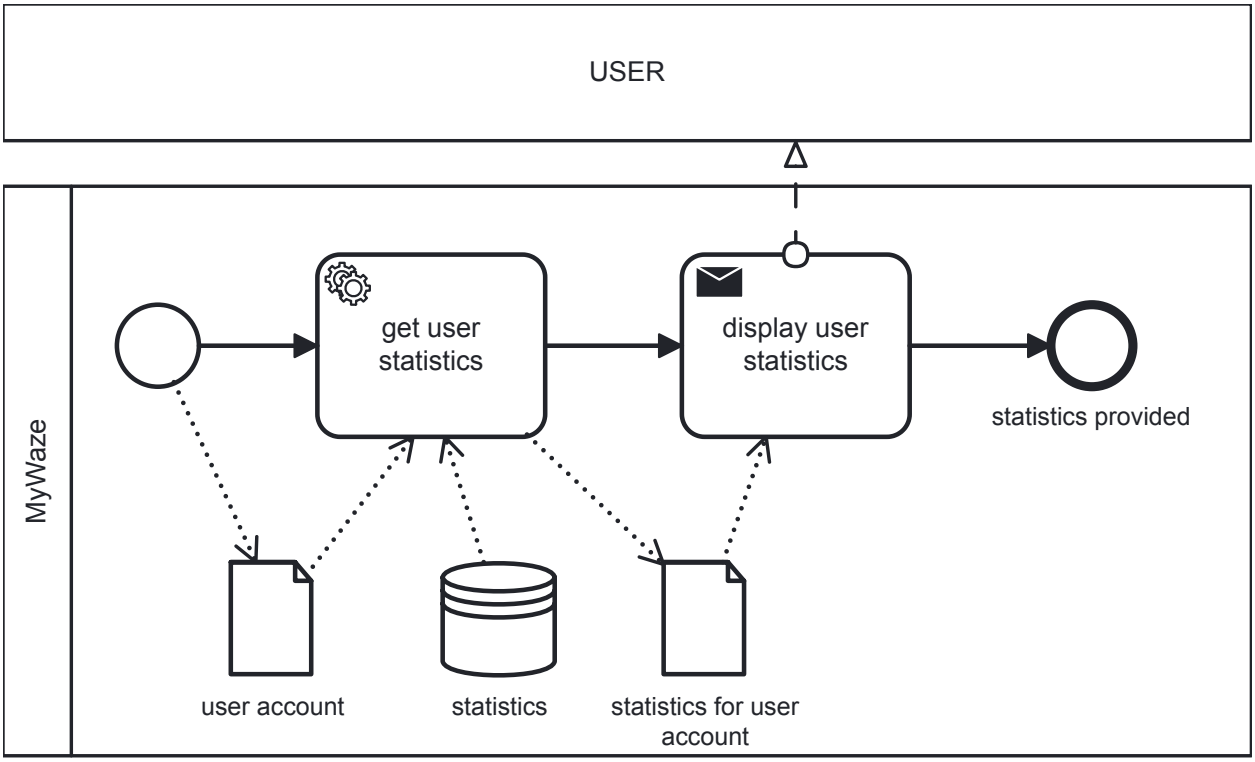


Figure 13: Model: MyWaze˙provideStatistics

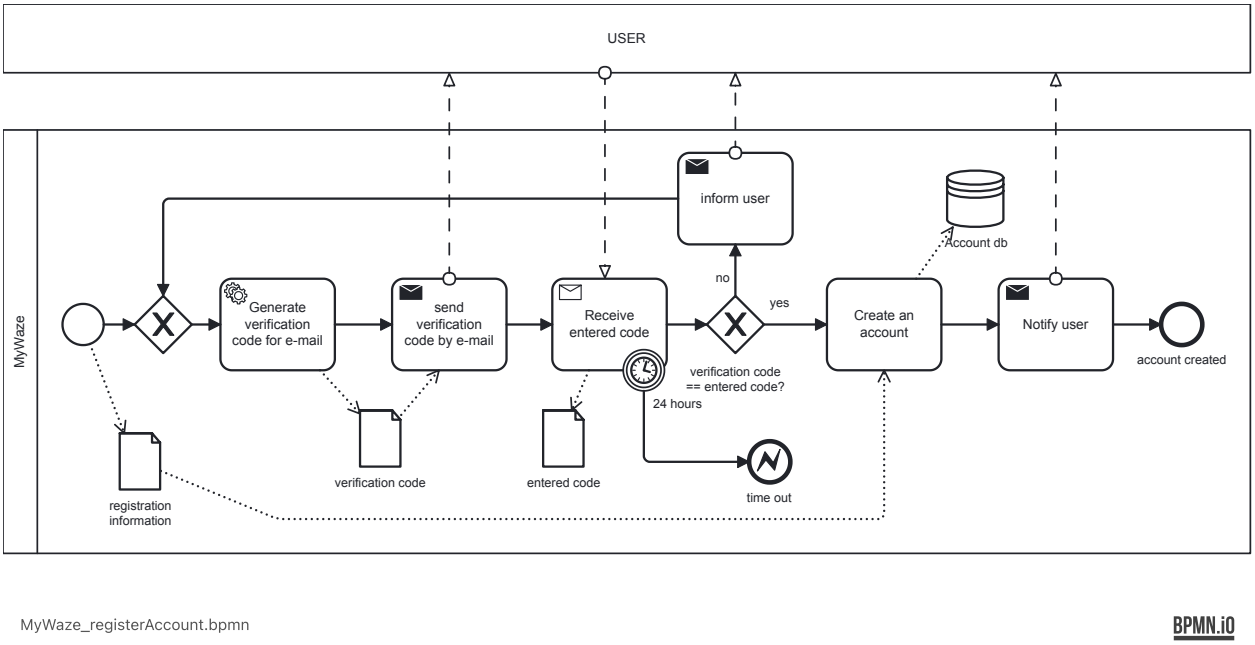


Figure 14: Model: MyWaze˙registerAccount

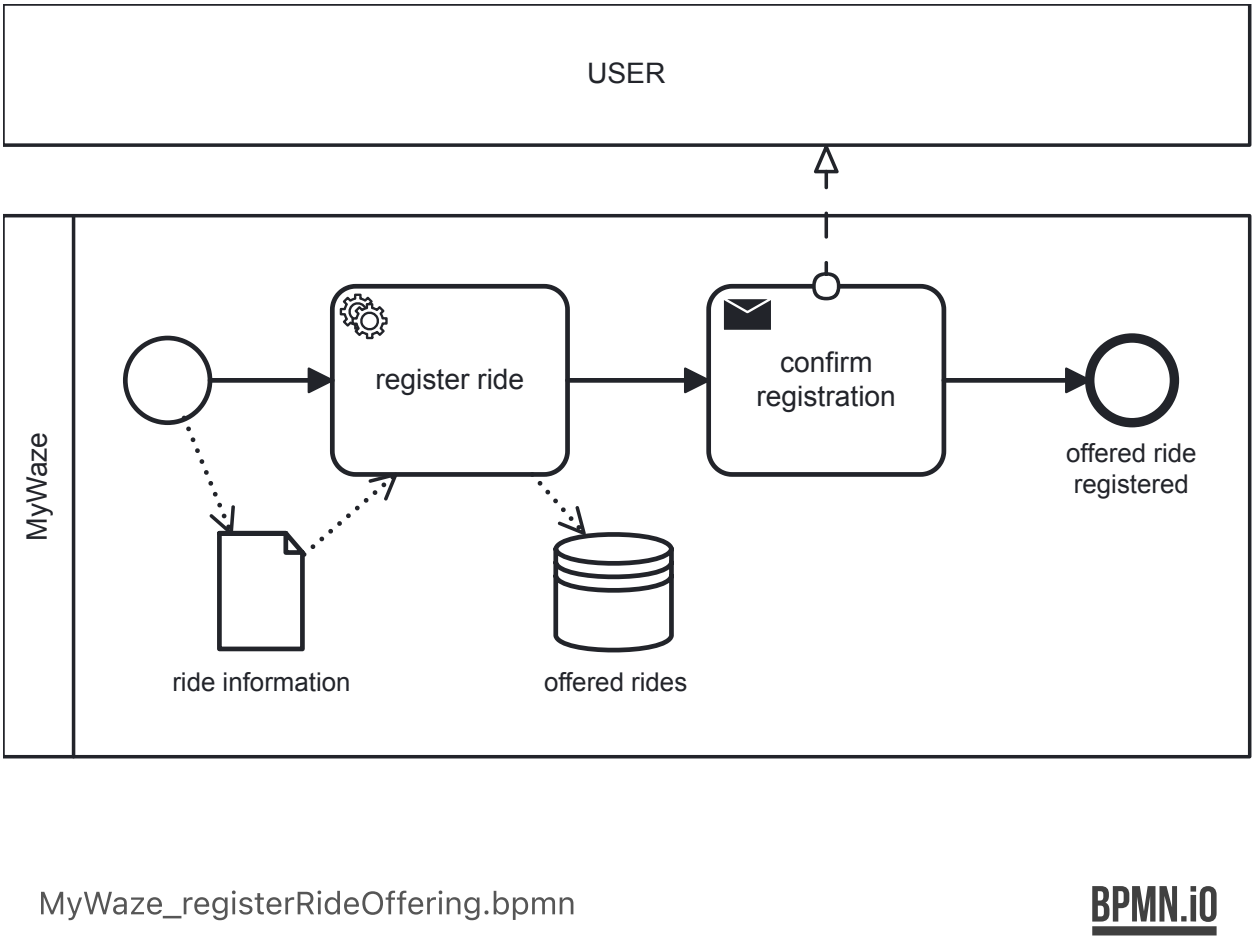


Figure 15: Model: MyWaze˙registerRideOffering

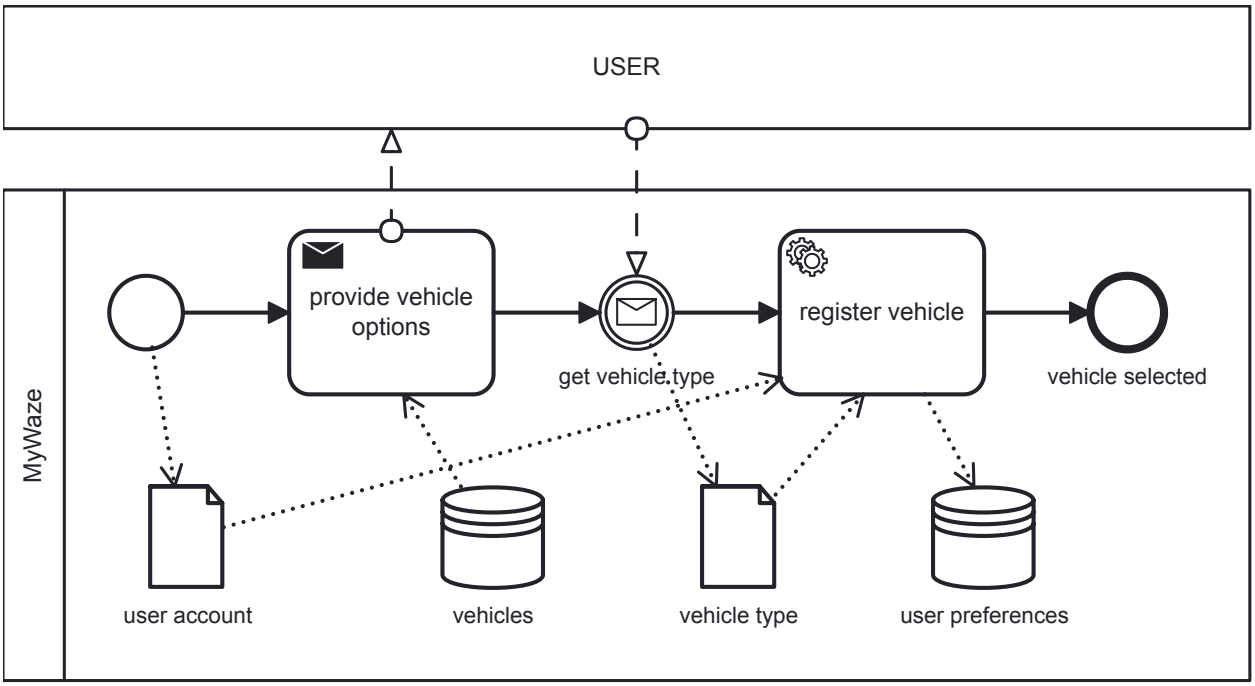


Figure 16: Model: MyWaze˙registerVehicleType

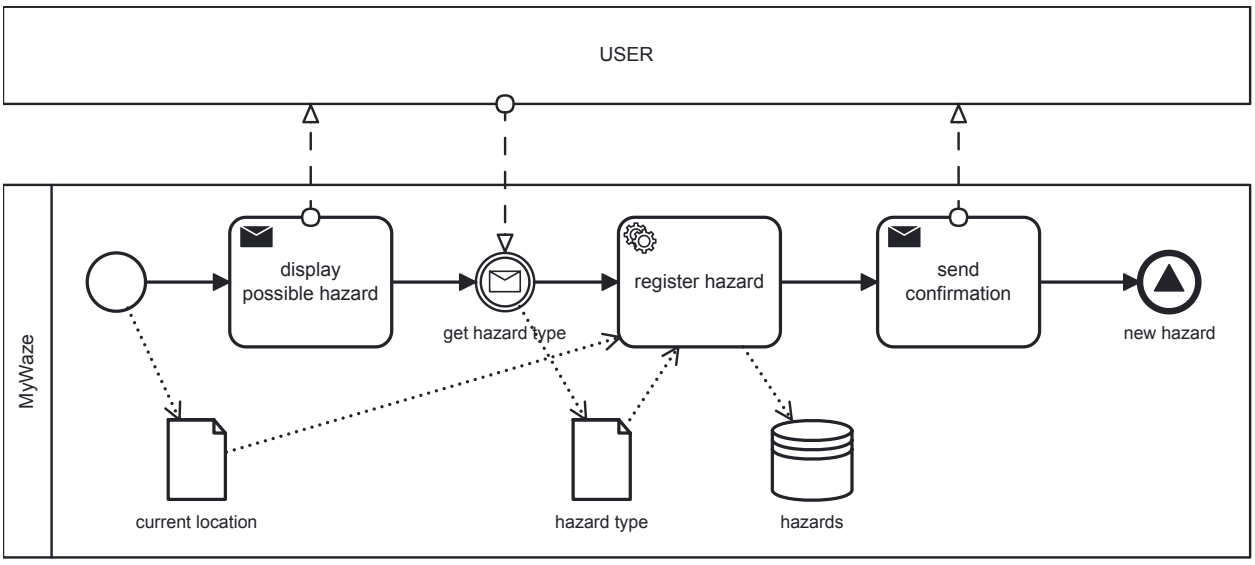


Figure 17: Model: MyWaze˙reportHazard

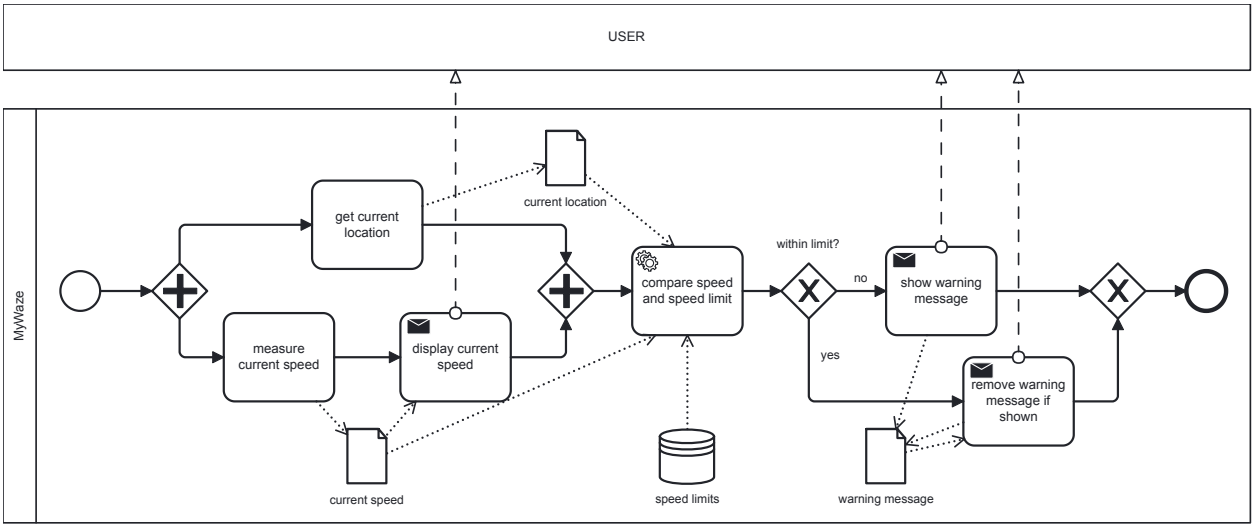


Figure 18: Model: MyWaze˙speedMonitoring

Prototype

Running Instructions

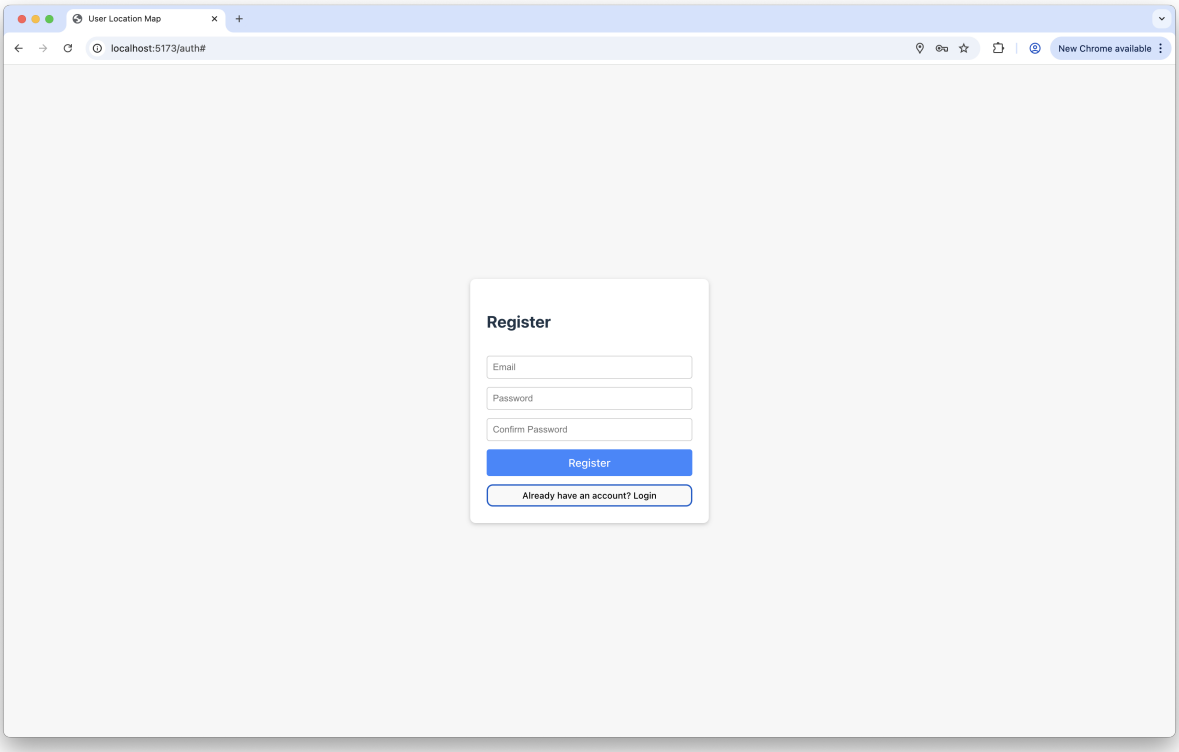
```
cd msp-mywaze-backend
npm i
npm run dev

cd msp-mywaze-frontend
npm i
npm run dev
```

The only prerequisites are a current version of `node` and `npm`. The database is implemented as SQLite, so no manual setup is necessary.

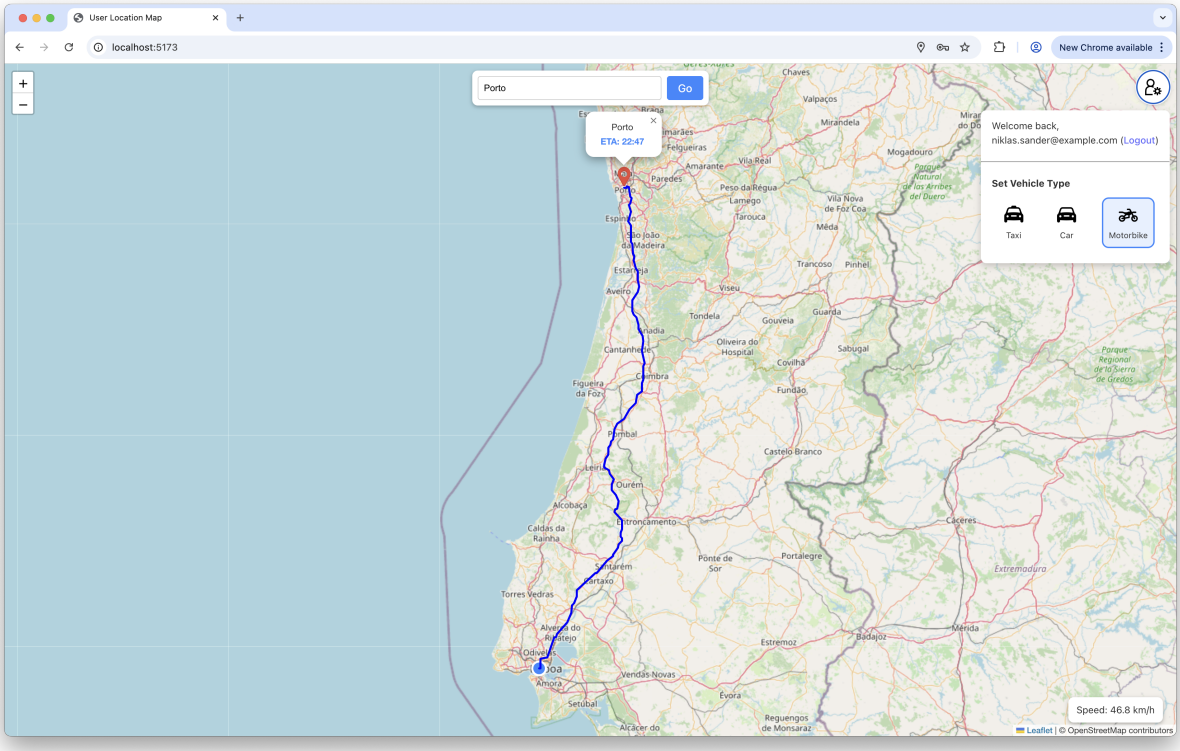
Routing uses OpenRouteService, which is quota-limited (daily) in the free version. If it stops working, please wait one day or change the variable `ORS_API_KEY` in `msp-mywaze-backend/src/routes/routing.ts` to your own (free) API key obtained from `https://openrouteservice.org`.

Features Implemented

- **Registration**: User can register and login on home page.



- **Vehicle Type Registration**: User can configure their vehicle type in the drop-down user menu on the top right of the screen.
- **Define Route**: User can define a route by entering the destination name or address into the text field at the top center and clicking *Go*.
- **ETA**: ETA is displayed in a popup above the destination after a route is defined.
- **Speed Warning**: Current speed will turn red if the user moves over 50 km/h. To test speed warnings on desktop, click on the speed value to generate a random speed around 50 km/h.


User Location Map
localhost:5173
New Chrome available
Porto
Go
Porto
ETA: 22:47
Welcome back,
niklas.sander@example.com (Logout)
Set Vehicle Type
Taxi
Car
Motorbike
Speed: 46.8 km/h
Leaflet | © OpenStreetMap contributors