

Home Exercise #1 Requirements

Intended learning outcome

After passing this exercise the student will be able to explain and exemplify some of the most common ways of specifying the requirements of a system.

Problem description¹

A car manufacturer and retailer chain “Molvo” wants to expand the services they are offering their customers and offer a car-ride sharing service. They hired your company to develop the application, but first they need your help to elicit the requirements and write a specification for the project.

The following information has been collected so far from interviews:

- The application should enable car owners to list their rides and available number of places. Interested users can then book/unbook a ride as well as chat with the driver.
- In order to list rides as a car owner, you need a car-owner profile where you are required to submit an ID, your vehicle make, model and registration as well as some other information. This information is then verified by “Molvo” and if no issues are found the account is approved. The member data need to be protected and the management should comply with GDPR.
- It shall be possible to book rides a month ahead, for instance, for daily commuting from home to work.
- The application should be available both as an app and in a web-browser.
- It is possible to rate both the car owner and the passengers. The administrator can follow up if someone is rude and expel them from the system.
- In the back-end of the system administrators run on an internal network with ordinary PCs and a database management system.
- It is important that it is impossible to double book a ride and that un-booked rides can be booked by others in a timely manner. For a ride un-booked less than 48 hours in advance 50% of the ride price is retained.
- A payment system serves the car owners using services from major credit card vendors or direct bank payment at major banks in the country where the system operates.
- The company will take a 3% commission on all transactions of which 1% will be donated to environmental programs. The sustainability policy must be well-visible on the company homepage.
- In order to differentiate themselves from the competitors “Molvo” wants to connect this application to simulation models they use for car development, to estimate the reduction in CO₂ emissions for each trip when sharing a ride instead of taking your own car. This work is also run on the internal network with a special simulation server.

¹ Original idea: L. Buffoni

Task

Your tasks this week are:

- a) Write 2 different use cases associated with 3 different actors in total. Actors can share use-cases, so you don't need to have 3 actors for each use-case. Draw a use-case diagram for these use-cases and actors. Please remember that the description texts for the use cases shall not just describe a basic function of the system, such as login. Use standard-UML as shown in the lecture.
- b) Write down 5 functional requirements of some part of the system. Don't forget to describe which system part you are writing about.
- c) Write down 5 non-functional requirements of the system.
- d) Create 5 user stories for some part of the system. Don't forget to describe which part of the system you are writing about.

You may make more assumptions of features of the system than those given in the Problem description, but in that case, you shall explain your assumptions in the solution.

Report

Use-case diagram (separate sheet).

Use-case texts. Requirements texts. User story text. (1-2 A4 pages)

Pass criteria

Understandable use-case description texts, user story texts, and sensible requirements.

Requirements shall be numbered, testable and consist of complete sentences.