

Hotel-project

Week 3: Design 2

This week's topics are: *Business rules, Use cases, System operations* and *Activity diagrams*.

Assignment

Format

Please hand in the report through mail as a **single** PDF file. Add your group number and the names of all group members to the report's front page. The report should be named **assignment_3_group_x** with **x** being your group number. Attach previous reports either as one separate file or included in the new assignment.

Business rules for domain model

Think about constraints which are not possible to express in the domain model (by using multiplicities etc.) but which are natural for the problem domain, so called business rules. They can be seen as invariants for the domain model. Write five business rules. Do not forget to specify in which context they are valid.

One example could be: A customer can only book up to 5 rooms. If more rooms shall be booked, the booking has to be done through the hotel staff.

Use cases

Use cases are often used to communicate with the client. They are easily understood and give the opportunity to model the interaction with the system in a concrete and rather detailed way.

Use the priority list for use cases that you did last week and pick a few which you will describe in detail. The use cases shall cover the booking process (including the search for free rooms), checking in and out and two of your own choice. These use cases should be the most important in the sense that they depict activities central to the system, and that they are expected to have a large influence on the system design.

The detailed use cases shall be constructed following the pattern of the use case lecture notes.

You can use the following questions as a guidance:

- Is the use case a complete use case?
- Does it result in a clear goal?
- Are the action steps and blocks explicit?
- Who are the primary actor(s)?
- Which are the main and alternative flows?

Remember to use the vocabulary you created last week and to keep the target readers in mind.

System operations

From your complete use cases, collect all system operations. These are the actual methods/operations that the system will offer in terms of an API to the outside. You will use them in the next week to define the interface of your system component(s). You can collect these operations by systematically checking the inputs and outputs of each of your use cases' action blocks!

Activity diagram

For the booking use case you should give both the use case in text and as an activity diagram in Papyrus. Attach the diagram to your report as a picture. To export a diagram as an image file in Papyrus, right-click somewhere in the opened diagram and choose File → Save as Image File.

Checklist

- Five business rules for the domain model.
- Five complete use cases.
- A list of system operations with short description (1-2 sentences).
- A textual description of the booking use case.
- An activity diagram for the booking use case, modelled in Papyrus.

Literature

- Craig Larman, "*Applying UML and Patterns*", chapters 6, 7, 10, 11, 28 and 30.