

Hotel-project

Week 2: Design 1

This week's topics are: *Domain model* and *Brief use-cases*.

Assignment

Try not to do the models in sequence but in parallel.

Domain model

The conceptual model, or domain model, is an important description of the problem domain. It should be established at an early stage of the analysis and then maintained during the process. It identifies a number of entities called concepts on an abstract level and describes the relations between them.

So it is of great importance since it is the first model which is really object-oriented. Before even thinking of the design of the system, the domain model helps analyzing the problem in terms of clearly separated entities and how they relate.

The domain model with its concepts, attributes, high-level operations or responsibilities and roles is also important since it defines a common vocabulary which can consistently be used by the project members. The vocabulary defined by the domain model should be used when writing the use-cases.

Use the results from last week to identify the concepts for the domain model. Discuss for each item if it is a suitable and relevant concept. In some cases you will find that it is more suitable to make it an attribute. Make sure everybody gets a say.

The concepts should contain attributes and, if needed, high-level operations or responsibilities. Add associations to the model. They should all be given multiplicities and roles. Keep in mind that there are many kinds of associations (see lecture notes).

Vocabulary

Then compile a list of the words you have used for concept, role and association names. This vocabulary is intended to explain the meaning of the key terms that you use in your design. It is important that everyone in the group agrees on what is meant by the concepts and attributes etc.

Use cases

A use-case depicts a certain course of events. By writing several use-cases, all important activities are covered. The use cases are very straight forward and are well suited for communicating with the client.

When you do use-cases you should clearly define which are the target readers. This has effect on the contents and level of abstraction. Also, use the vocabulary of the domain model when writing the use-cases.

Identify the actors of the domain. Then produce a list of possible use-cases. After this, discuss the use-cases and prioritize them. Construct a use-case diagram which includes all actors and use-cases. Associate each use-case to the actors which are involved. Give a brief description of each use-case. The description should contain the name of the use case, a list of involved actors, a description of the goal for each actor and also a summary of the use-case in a couple of sentences. Next week you will work in detail on some of your use-cases. Add missing actors to the vocabulary with a short description. Also assign one or multiple responsibilities to each use case. This should be based on the requirements responsibilities.

Checklist

- Identify the possible concepts.
- Choose the relevant concepts, attributes and high-level operations or responsibilities.
- Create a domain-model with concepts, attributes, responsibilities, associations, multiplicities and roles.
- Write a vocabulary.
- Identify the actors and use-cases.
- Draw a use-case diagram.
- Prioritize the use-cases.
- Write a brief descriptions of the use-cases.

- Assign each use case to one or many group members based on the requirements responsibilities.