Hotel-project
Introduction

First of all

This is a very different problem from what you are used to at Chalmers. Usually you obtain a problem and are then asked to give a solution. Here the problem is a lot more complex; as a group you have to define the problems, make the requirements and models for the solution and then implement them. This might sound simple, but it is far from that. Some of you will find this extremely frustrating, even to the extent that you donÕt know what to do.

Well, this is what you will have to deal with when you have finished your studies. You will not get your problems clearly defined and served on a golden plate in industry. The problem to solve will not be clear for you before well into the course. You will only get there by working hard and redoing the design a number of times.

In summary, you have to:

- Find the problems to be solved

- Argue that these are the problems

- Find the best possible solution for every problem that is consistent with the other solutions

- Motivate your solutions

Supervisor and hotel manager

The course assistants and the course responsible will play two roles in the project. The first role is as a supervisor, explaining the issues related to modeling and how these models can be applied in a general setting. This will be the main role. The second role is as a hotel manager, the person who has the money (money can be recalculated into course points here) and wants as good a system as possible. Here we will explain a bit more what we mean by this role.

We have picked a domain, hotel business, which most people know something about. Within this domain we believe it is possible to make a system which is better than those systems which exist today. Due to the time limit it will be more or less impossible to make a system which is better than existing systems in all possible ways.

We, the project managers, have been travelling to many of the corners of the world, for business or holidays. So, we have some understanding on how a hotel works, in particular the booking part. To gain even more knowledge, we have conducted two interviews ourselves and studied how one can book hotel rooms through the internet. Based on this knowledge, we have had discussions on how we think a hotel system should work. We are more than happy to share this domain knowledge with you which we have partially done through this document. Our knowledge will be enough for you to produce a project which will pass the course, but for a better picture of the domain you should also retrieve information from other sources than from us and this document.

We do not know or cannot know all the solutions of this project, because there is not a single solution, but several. The benefits of a solution depends on what you want to achieve with your system. What we can do is to guide you to make sure that your solution does not become too simple or too complex. For example, a hotel system which can only handle one room would be far too simple and would be considered a failed project. On the other hand, a failed project can also be a successful project in terms of this course as long as you have been working hard, learned how to model, and you know why the project failed. But, of course it is easier to argue why a good project is passed.

One tip from us: It is crucial to work together a lot during the frst part of the project. We have done the project which we expect you to do. For example, for domain models (which you will do in the second week) we spent four hours. We rewrote the domain model completely 2 or 3 times, and we have made a number of changes to our final model. We spent a considerable amount of time even though we are experts in how to produce domain models. We would expect you to spend two to three times as long on this part, and you have the time for it as well. Domain models are the back bone of any object-oriented system. Without high quality at this stage it is very hard to obtain a good system.

The hotel system

You shall build a system which can be used to support the running of a hotel. The system should be as flexible as possible so that it can be used for different hotels. If your system can be adopted to different hotels it will be much easier to sell it. On the other hand, it shall be concrete enough

to be implemented and tested. Of course, we cannot expect you to come up with a system which can be used in any hotel. You have to find out what hotels have for procedures and based on that information you should create a system which makes it efficient. You need to find out how a hotel system works on the internet, use your own experience and make good use of the hotel manager that has placed the order (which happens to be your supervisor). Your system does not need to be more efficient or have more features than hotel systems which exist today, but it should be a help for the staff of the hotel as well as for the customers.

To be more precise, your system shall not support the finding of a hotel, but the running of a hotel. The focus of the system should be on how to make a booking, checking the availability of rooms and the checking in and out procedures. The system should also facilitate the administration of rooms and customers such as adding and removing rooms, adding regular customers etc. The system does not need to support the running of the economics of the hotel such as salaries, but it needs to be able to calculate what a customer has to pay based on things such as how long the customer has stayed in a particular room and what extra facilities has been used not covered by the room price.

Rooms

The cost of a room depends on its type. The different room types vary from hotel to hotel but most hotels has single and double rooms, family rooms, suites, and weeding suites. Some hotels even have dormetries where several people share one room. In the latter case, one pays per bed and not per room. Sometimes rooms are linked together, for example a hotel room can contain a bed and be linked to a bath room, or a hotel room can consist of a bedroom, living-room, and bath room. Some rooms do not have their own bathrooms but have access to showers and toilets in the corridor. There are also conference rooms which can be booked but not slept in.

Rooms might have facilities such as internet, telephone, TV etc. A bathroom might contain a shower, or a bath. There are facilities which might cost extra. The cost of the stay also depends on whether the customer has used anything from the mini-bar, bought things from the hotel by putting it on the room tab. Breakfast might be included in the price of the room or not. These are all things that you have to consider if you want a system good enough for us to buy it.

The system has to be able to find free rooms, using some clever scheduling and taking into concern the requirements of the customer. Such requirements can be non-smoking or wheel-chair access.

Customers

Most hotels pay extra attention to some customers. Regular customers, Gold members and such might get some benefits as lower rates, as well as being upgraded to a better room. Sometimes non-regular customer will be upgraded as well. For example, if a customer wants a single room, but there are none available the answer is not to deny the customer a booking. Instead you check if there are plenty of double rooms, and if so, the customer can have one for the price of a single room.

There are other things to consider when it comes to customers. For instance, Chalmers gets reduced prices at some hotels (which happens to be those hotels we recommend to foreign guests). Some hotels belong to chains and give their customers points which can lead to rebates or free nights.

A customer should always be able to see their own bookings in the hotel system.

Bookings

To every booking there has to be a valid credit card (the card issuers demand different information) and enough money on the account. The booking system does not check the card info, but sends it to the bank that handles the hotel's money. The bank then gives an OK or discharges the card. Most of the time when one books a hotel one does not pay up-front. But due to the amount of customers who try to avoid paying it is a good custom to reserve an amount exceeding the cost of the stay on the card at checkin.

While a booking is made the rooms that are under discussion are not available through the system. The rooms are locked for a certain time period and if the booking is not completed when the time is up the rooms are made available for others to book.

A booking has severable steps. First the customer has to specify what s/he wants to book, then the system has to see if there are any rooms that fulfill the customer's wish. If so, the customer is asked for some personal information and a valid card. The last step is that the system returns a booking number or the customer cancels the attempted booking.

Make sure you have a good understanding of the different steps in a booking and their sequencing since this is a central issue in the following weeks project work.

Staff

The hotel receptionist can see not only all the bookings of one customer but all the bookings for all customers. If a customer wants to make a booking for an exceptional amount of rooms or days or if they happen to be the Rolling Stones, the booking shall be made through a receptionist.

An administrator has the rights to add and remove rooms, and to make other major changes to the system. A member of the staff might have the combined rights of the receptionist and the administrator. For smaller hotels it is typically so that the manager will have full rights to the system.

Praxis

Many booking system have business rules. We will give some examples for you: A customer cannot book rooms more than one year in advance, not book more than 8 rooms and/or not book a room for more than 30 days. These parametres vary from hotel to hotel.

1   How to work

There are some critical points to consider if you want to finish the course with a smile on your lips.

1.1   Read the literature

This is a project course and many students seem to assume that it is enough to read most of the lecture slides. They are wrong. First of all, lectures can't cover all aspects of the material. More importantly, the more you read the more certain you will be when you carry out the assignments. The time you spend reading will make a huge impact on the time you spend arguing and discussing how to do things within the group. A sound theoretical understanding of the models you are using will also mean less time wasted on re-doing your assignments after the supervisor has discarded them.

1.2   Hand in your assignments on time

We will read your assignments and comment on your work. But only if you deliver on time. Make sure that the supervisor gets your report in time and that all parts are included in the report. Otherwise you will miss out on the opportunity of getting feedback on your work.

1.3   Motivate

There should always be a motivation to your solution. And a discussion of what you have excluded from your solution and why. Never draw a model without explaining what it represents. Diagrams should be given names and be referred to in the textual description of your system so that it is clear what process/structure it represents and why.

1.4 Work as a group

It is tempting to divide the job between youselves to save time and effort. This is alright. But make sure that everyone in the group knows and understands your models. You will otherwise get stuck during the final examination when you are asked precise questions about the report and the implementation. In total you should spend anything up until a total of 200 hours on the course.

1.5 Iterate

Work in an iterative style and everything will become easier. Go back and make sure that your old models are consistent with your new models. Change old models as you get a better grip of what is happening and how things interact. When you implement you should always start with a small part of the system and by testing and debugging make sure that it works before taking on a new part. Having a system with several nearly completed processes/classes is not going to impress us.

Conclusion

The description above is far from complete, but gives at least some indication on what we will expect from your hotel system. If you have any questions or are uncertain about something it is always a good idea to ask the supervisors/hotel managers. We are the ones that will make the final decision. If you want to influence the process it always pays to have good arguments. A good supervisor listens to good arguments.