Adapting a Hotel Reservation System to Camping Reservation

A look into the mind of a camper

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KTH Computer Science and Communication

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Abstract

Adapting a Hotel Reservation System to Camping Reservation

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This thesis describes an adaption of an online hotel reservation system to a camping reservation system. By investigating existing reservation systems and conducting a user survey, an idea of what a camping system should contain is formed. The hotel reservation system is explored and the changes that can be made are implemented in a prototype.

Features, such as an interactive map of the campground, that cannot be added to the system in its existing state, with the limitations on this project, are discussed in the conclusion.
Referat

Anpassning av ett hotellbokningssystem till campingbokning

En inblick i en campares värld

Examensarbetet syftar till att anpassa ett hotelbokningssystem till att bli ett campingbokningssystem. Genom att undersöka existerande bokningsystem och genomföra en användarundersökning, bildas en uppfattning om hur ett campingbokningssystem bör se ut och bete sig. Hotelbokningssystemet utforskas, och de ändringar som är genomförbara implementeras i en prototyp.

Den funktionalitet, så som en interaktiv karta över campingen, som inte kan läggas till i systemet i dess nuvarande form, med de begränsningar som finns på projektet, diskuteras i slutsatsen.
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Chapter 1

Introduction

1.1 Amadeus

Amadeus is one of the leading technology providers to the travel industry in the world, providing marketing, distribution and IT services worldwide. At any given website where you book flight, bus or train tickets, hotel rooms or cars, chances are that you are using one of Amadeus’ systems. The hotel branch of Amadeus handles several different systems. The hotel platform needs to handle administrators for large hotel chains, administrators for hotels, bookings from travel agents and bookings from end customers in need of hotel rooms.

1.2 IBE

One of the systems on the hotel platform is the Internet Booking Engine (IBE), to which ordinary people connect to search for hotels. The system is produced to be sold to hotel chains, so that a hotel chain can embed the booking system on their website. The system is hosted by Amadeus but a search for hotels in the system will only produce results of hotels from that chain.

1.3 Problem

Amadeus decided 2010 to get into the camping business as well. The purpose of this thesis will be to evaluate how to adapt the IBE for camping reservation and create a prototype. This prototype will be used by the marketing department to sell the concept of a reservation system to chains of campgrounds.

1.4 Limitations

During my time at Amadeus, the IBE is still being developed. To make changes to a program that is still under development can be a bit complicated. The IBE is the
client side program. The hotels/campgrounds have to be created and managed in
an other system. Overlapping with the development of the Campground IBE, an
existing hotel booking administration system was being adapted to be a campground
administration system. This work was begun more than a month before the work
on Campground IBE started, and it meant a lot of collaboration had to be done
between developers. Working together to agree on how the systems should store
and communicate data was essential.

One of the preexisting constraints was that both systems would be adapted
without making any changes to the xml messages used to communicate with other
systems. The IBE communicates with a system and asks for available hotels. The
administration system (called Admin Light) communicates with yet another system
to store the created hotels. These systems do not use the same kind of messages,
and the communication between them was not visible or obtainable. This meant
that most fields and properties of a hotel were called different things in the different
messages, and that some properties that could be set from the Admin Light was
not available from the IBE.
Chapter 2

Background

2.1 Camping

Optimizing camping reservation systems by surveying campers what they wanted was done as early as 1973. Federal resource agencies in the USA tested two campsite reservation systems, and over 2000 questionnaires were sent out to survey campers who had come into contact with the reservation system. About 75 percent of campers preferred one campsite reservation company to sell reservations for all Federally owned campgrounds [1]. This was before the Internet and the reservation systems existed only at the campground, and at travel agencies.

What the users wanted from a system that they themselves could interact with was not shown in the report, and that is the kind of information which is needed to build an online reservation system. This information was not to be found anywhere else, and this thesis attempts to find out what the campers want to know when using a reservation system.

2.2 Existing IBE

To know what changes had to be made to the existing system, the system had to be investigated. The IBE is a Java program, built with the Wicket framework [11]. There are 5 different pages or views: Search, Select Hotel, Hotel Details, Select Rooms and Book Rooms, see 2.1. The first page is the search view, from which the user is directed to the Select Hotel View. In this view it is possible to either view the Hotel Details page or go directly to Select Rooms. From Hotel Details the user also ends up in Select Rooms, and in that view the user go on to the Book Rooms view.
2.2.1 Search

In Search a user will supply the system with:

- Destination
- Arrival Date
- Departure Date
- Number of Rooms
- Occupancy (number of adults and children in each room)
- Max Price
- Promotion Code
- Location
- Equipments

Under Equipments the user can choose any number of different equipments that he/she requires from the hotel, such as Free Wifi, Meeting Rooms, Restaurant or Parking. These are marked with checkboxes.

2.2.2 Select Hotel

When a user clicks the search button on the previous page, Select Hotel is displayed. In this view the users search criteria are displayed in text at the top, next to a map of the chosen destination, where the results are marked out. Underneath the map and search criteria is a list of the resulting hotels, with a thumbnail picture and a short description of each hotel. In the search criteria, the equipment list is still interactive and the user can change the requested equipments which makes the result list change in realtime.\(^1\) In each hotel list item there are two buttons, Details and Rates. Details leads the user to the Hotel Details page, and Rates goes straight to Select Rooms.

\(^1\)When the list is sorted in realtime, no new messages would have to be sent to the request new data, but the results not fitting the new search parameters are merely hidden from display. All the available search results are stored at the client side, and a change in selections will not require a reload of the page, but merely an update of what is visible.
2.3. RESERVATION SYSTEMS

2.2.3 Hotel Details
In this view a more detailed description of the hotel is shown. There is a general description, photos of the hotel and information about the hotel amenities. If the user is happy with the description, the next step is to click Select and go to the Select Rooms view.

2.2.4 Select Rooms
Here all the available rooms in the chosen hotel that fit the users requirements are listed. Each list item shows a description and price, and the user has a possibility to choose how many rooms he/she wants of each type before proceeding to the booking page.

2.2.5 Book Rooms
This view looks like most other booking pages. The total price of the booking is displayed, and the user is asked to fill in his/her contact information and to agree to the terms and conditions.

2.3 Reservation Systems
Most campground reservation systems existing in 2010 are old fashioned, and some are hardly reservation systems at all but single forms to fill out and be handled [2]. Some are systems which work like hotels.com but for camping, i.e. the user searches between a lot of different campgrounds in a certain area [12]. The system that Amadeus want to develop is targeted at chains of campgrounds and single campgrounds, to be put on their own websites, where a user easily can book a campsite. Only campgrounds from that chain will show up in a search.

The existing reservation systems on campgrounds webpages today can be a single form where the user fills out when he/she wants to visit the campground and his/her credit card information [2]. A request is then sent to the campground, and the customer has sent credit card or billing information without even knowing if there are free campsites at the campground. This can be compared with sending a request in an e-mail, which has the same effect and allows the user to withhold the billing information until he/she knows a reservation can be made.

Research done on reservation systems when this report is being written mostly consists of research on flight and other travel bookings. What little can be found about accomodation booking is mostly about the booking itself, the structure of the system and payment and cancellation policies.

2.3.1 Online Travel Planning Survey
In “Online Travel Planning Survey”, Jurca analyses six airlines and four travel agencies, all with online reservation systems [3]. She looks at the business models,
the customer needs and the commerce protocols. The study finds that a lot of work has already been done in moving the reservation business on the Web, all current systems share the same implementation approach: the user has to input his/her travel preferences then choose from existing possibilities. It also discovers that the later the user has to register in the reservation process, the easier a reservation system is to use.

That most current systems share the same implementation means that there might not be a lot of innovation in the reservation system area, but the customer will recognize the structure of systems he/she has not used before and understand how to use it without a lot of instructions. That the structures of booking systems are usually similar, is something this thesis takes advantage of. In the adaptation of the hotel reservation system, the structure of the system will not be changed.

That the system is easier to use if a possible registration process occurs late in the process, is unfortunately not something that could have been changed in the adaptation done in this thesis. However, in the existing IBE a user does not have to register or sign in until the last part of the booking process, which means the IBE can be counted among the easier systems to use.

2.3.2 Different Types of Patterns for Online-Booking Systems

Teuber and Forbig looks at patterns in design of online reservation systems [4]. The pattern concept has been applied to the analysis and user interface design of booking applications. Just as Jurca, they look at the conceptual design and the structure of systems, and they recommend different patterns for first time users and registered customers. Teuber and Forbig recommends that one should outline the different steps in the booking process. They also discuss patterns for visual appearance of the user interface, and suggests the user should influence the use of controls (check boxes, buttons etc.) and the location and format of standard display components. As with Jurca’s report, the ideas about changes to structure is not something that can be used in the case of this adaptation, but a user survey has been conducted, and the results of the survey has affected the placement of new controls and components in the system.
Chapter 3

Method

3.1 Existing Camping Reservation Systems

Before any other research, it was necessary to try out existing campground systems. I went through the whole booking process, trying all alternatives (such as tent/RV/cabin, different sizes and different hookups.), as far as possible without actually booking a campsite. I tried out Reserve America [12], Camping.com [13], UK Campsite [14] and Camping.se [15]. This gave a base knowledge of what a campground reservation system should contain, but the reservation systems were different enough that it was difficult to say which parts were important to the users.

3.2 User Survey

“The real users and their goals, not just technology, should be the driving force behind development of a product.”[5]

To know what the users wanted from a campground booking system it was decided that a user survey would be done, with questions based on what could be found on existing campground booking pages and based on what should be possible to change in the IBE.

Campgrounds correspond to hotels, and campsites/pitches correspond to hotel rooms. Because of the way the IBE was built, with a search for hotels first and when a hotel is chosen, a list of rooms to choose from, what was interesting to know was what a user of a camping reservation system wanted to know about a campground before choosing campground, and what the user wanted to know about the sites on the campground.

From the first thought of a survey, the plan was to reach campers over the Internet. More people could be reached, and people from different countries with different cultures and views on what is important could answer. The survey would have to be answered by people who could be possible users of a camping reservation, and I had no resources to send out a paper survey to a big group of random people.
Using an online survey, all the answers would be gathered in one place, and the
time spent on administering the answers could be minimized.

Asking questions to campers in real life, I could have asked follow-up questions,
and have them explain what they meant by specific answers. This would mean
the survey was no longer anonymous. In this case answers probably would not
differ very much depending on whether the survey was anonymous or not, since the
questions are not very personal. However, I did not have time or resources to spend
on visiting campgrounds to ask campers questions in person. Had I traveled to the
nearest campground to do interviews, I probably wouldn’t have received more than
a handful of answers since it was low season. People at the same campground are
not a wide spread user group (after all they chose the same campground) and it
would probably not be worth the result.

For the survey I decided to use a Google Form, without having researched other
alternatives much. I have used Google Forms before and I knew that I could do what
I wanted with the form and that it would be simple to create a survey in short time.
Since people know of Google and people usually are more comfortable with what
they know, it was my conclusion that a lot of people would trust Google and would
participate in a Google Form survey more than if the survey looked home made and
was hosted on some random website. Of course there are people who do not trust
Google at all, but there is no need to be signed in to any account to participate in
the survey, so the survey probably would not loose very many potential participants
because of the decision to use Google.

There was a choice between having the respondent choose answers in drop-
down lists, and letting him/her write down any answer in a free text field. The big
advantage of dropdown lists is that it makes the analysis of the survey results much
easier. The answers are groupable and one can easily see how many people think a
certain thing is important. However, this kind of answering alternative can seriously
limit the survey takers to the answers that are supplied to them to choose from.
People generally ignore the opportunity to volunteer a response and simply select
among those listed, even if the best answer is not included. Therefore, a closed-
ended question can only be used effectively if its answer choices are comprehensive,
and this is difficult to assure [10]. There could be something that is really important
to campers, which is not among the possible choices. It was therefore decided that
free text field answers was the best alternative.

The longer the questionnaire or survey, the less likely people will respond [9]. If
the survey was too long, participants might tire after a few questions and decide to
quit the survey. Since this is an adaptation of an already existing system, there is a
limit to what can be done with the system, and it was relatively easy to put some
constraints to what was important to know.

Booking systems are about searching for and finding the right accommodation
and then being able to reserve the one you want. What was interesting for us to
know, is what is specific for campers. The big differences is that the users search
for a campground instead of a hotel and choose a campsite or a type of campsite
instead of a type of room. A decision was made to ask the participators for the
3.2. USER SURVEY

things they found most important when choosing a campground, and what things they found most important when choosing a campsite.

In order to not miss anything important, there was a question in the end asking if there is anything in particular that the users found wanting with existing systems, or if there was something they appreciated especially much.

The easiest way to reach out to campers turned out to be camping forums on the Internet. Messages were sent to the Swedish Tourist Association (STF) to see if their members could be contacted by mail or e-mail, but their response was that it was not possible, and that they were not interested in letting their members participate. The IBE is an online reservation system. Online surveys are often employed in studies of Internet use in order to reach a population with Internet experience [8]. There are several camping forums on the Internet, where people interested in camping can discuss everything from campground views to what kind of sleeping bag is best, and in some of these forums the survey was posted. Since Internet is spread across the world, forums can have users from several countries and a question was added to the survey to ask users whether they were from the USA, UK, Sweden or some other country. From the existing reservation systems it looked as if camping is different in different areas of the world.

The survey was posted in the camping forums as a link, with an explanation that this was a study for a master thesis, and that a prototype booking system would be developed based on the answers. The answers started rolling in. After about 24 hours almost no answers had come in from the US. Apparently the forums that were first approached were mostly British. Two American forums were found, and the survey was posted there too. In total the survey was posted in five English speaking online camping forums and one Swedish. ¹

3.2.1 Questions

The questions asked were

- What are the 3 most important attributes of a pitch/campsite?

- What are the 5 most important things when searching for a campground?

- In existing camping reservation systems, is there anything that you appreciate particularly much, or something you think is missing?

Unfortunately, using Google Form, it was not possible to choose to have five text field answers to one question, and the questions were rephrased to “What is the

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¹After a day or two I found myself banned from one of the forums, and a few days later another forum had banned me too. Having read the forum rules, I could find nothing that led me to think that I had broken the rules, but at least one of the forums belonged to a website that had their own camping reservation system, and maybe they did not want competition. This meant that the whole thread was deleted, so that the users could no longer see the link to my survey and I could no longer see if anyone had voiced any opinions outside of the survey.
most important attribute of a pitch/campsite”, “What is the second most important attribute [...]” and so on. See Appendix A.

After eight days the survey was closed and the gathering of the results started. In that time the survey had received 104 answers, which was more than I had dared hope for.

In order to group the answers together I had to interpret what the survey takers meant with some of their answers. For example “Peace and quiet”, “Quiet at night”, “Peace”, “Noise rule enforced” and “Away from highway noise” where all translated to simply “Quiet”.

The respondents were asked to answer in order of importance, but when analyzing the answers, it became difficult to weight the answers. Instead, the amount of people answering the same thing on any of the 5 questions about campgrounds were added up, and the same thing was done for campsites/pitches.
Chapter 4

Results

Figure 4.1. Top answers to question about campground

The survey was answered by 104 people. There were 55 answers from the USA, and 49 from Europe (out of which 33 were from the UK). The results of the survey differed a bit between Europe and USA. On both continents the location was the most important attribute when searching for a campground (10 answers in Europe and 21 in USA), but in Europe this was followed by Toilettes and Showers (6 answers), while in USA the second most important thing was Full Hook-ups (5 answers). This particular difference probably means that there exists more campgrounds in Europe that do not have toilettes or showers, and not that Americans are
less interested in that kind of facilities. Another possible explanation is that more of the campers have RV’s (with toilets and showers in them) in the US, which would also explain why “Full Hook-ups” is more important to Americans than to the rest of the respondents.

The top 9 results for campgrounds and pitches are displayed in Tables 4.1 and 4.2. More detailed graphs of the answers can be found in Appendix B.

4.1 Analysis

The results of the survey gave a reasonably clear picture of what a campground booking system should contain, and I will describe both what I wanted to do and what was done below.

Hook-ups are obviously important to campers, both when choosing a campground and when choosing a campsite/pitch. Full hook-ups include water, electricity and sewage [6]. The most common electric hook-ups are 15, 30 and 50 watts.

The users also want to know what amenities are available on the campground. This already exists in the IBE as we have seen, but in camping the amenities are a bit different from hotels. Air Conditioning and Bar is not as important as Shower, Convenience Store and Playground. Among the top results in the survey, the answers relating to amenities and equipments were pretty equally distributed. It became difficult to decide which amenities and equipments were more important than others, and instead the number of checkbox searchable equipments was in-
4.2. COLLABORATION

creased from seven to nine. Since the checkboxes were visually displayed in a three times three grid, increasing that number did not change the layout.

When it comes to pitches, campers who camp with tents tend to want to know what kind of terrain the pitch/campsite has (grass/sand/stony). Other interesting attributes of a campsite/pitch is the size, location and if it is situated in the sun or not. These attributes will be used for filtering the results when choosing the campsite/pitch. In the existing IBE there is no filtering at all in the Select Rooms view, but since it is only filtering results, and this implies changes to the client only, it is relatively easily done.

Though an interactive map of the campground was not possible at this stage, a map of the campground was very important to the users. This was easily done by adding an extra picture (the map) to the Select Rooms view. The map should mark each campsite or pitch with a name or number, so that the user knows which site is which. To be able to make the connection between map and bookable pitch/campsite, the list of available pitches had to display each single pitch and not just a kind of pitch. In the existing IBE, if there are 5 rooms of the same sort that are available, they will show up as one list item, since hotel guests seldom know any difference between the rooms.

4.2 Collaboration

The administration system for campgrounds (Campground Admin Light or CAL) was already under implementation when the work on Campground IBE begun. The Campground IBE had to be tuned to display the campgrounds created with the Campground Admin Light correctly. Most of the functionality that the survey takers wanted was already written in the CAL, but a few changes had to be made to CAL to include sewage hook-up and some extra campground amenities.

The CAL had the same restrictions as the Campground IBE, no changes to the message or database structure could be made. CAL therefore saved campsite specific data in the id of the campsite/pitch object. The id was set to be a combination of letters and numbers that was matched to some specific properties. For example, a campsite with partial shade, electric hook-up and stony terrain was represented by a type id starting with the letter F. A campsite with partial shade, electric hook-up and grass terrain was represented by an id starting with the letter G. The second digit/letter in the ID stood for a range of pitch sizes. The way the system was done, there was a different letter for electric hook-up, water hook-up, no hook-up and electric and water hook-up together.

This way of mapping data would have been a problem for the campground map in the Campground IBE which required that several objects with the same properties could be created. This would have meant several objects would have the same ID, which was not possible in the database. However, in the implementation process, it was soon discovered that this id number was not ever sent with the messages used for communicating with the IBE, and the data had to be stored in
other ways. Instead the new mapping was done with help of Room Amenity Type codes, see Table 4.1.

### 4.2.1 OTA codes

The Open Travel Alliance (OTA) is a non-profit organization working to establish a common electronic vocabulary for exchange of travel information. It defines messages using the eXtensible Markup Language (XML). OTA has produced lists of codes, such as Room Amenity Type (RMA) and Hotel Amenity Code (HAC). These are lists of amenities that can exist in a hotel or room, and each amenity is mapped to a specific code [7].

The original Admin Light system creates hotels with certain amenities and saves these. The original IBE receives search results with hotels and their amenities by codes. The messages used by the CAL and the Campground IBE are the same messages as used by the original systems, though the codes are different depending on what amenities a campground or pitch has. The two systems have to have the same rules and have to interpret the codes in the same way. A mapping of amenity codes was decided upon, see Table 4.2.

<table>
<thead>
<tr>
<th>HAC code</th>
<th>Hotel Amenity</th>
<th>Campground amenity</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>Ice machine</td>
<td>Water Hook-up</td>
</tr>
<tr>
<td>50</td>
<td>Housecleaning daily</td>
<td>Sewage Hook-up</td>
</tr>
<tr>
<td>113</td>
<td>120 AC</td>
<td>Electric Hook-up 15W</td>
</tr>
<tr>
<td>114</td>
<td>120 DC</td>
<td>Electric Hook-up 30W</td>
</tr>
<tr>
<td>115</td>
<td>220 AC</td>
<td>Electric Hook-up 50W</td>
</tr>
</tbody>
</table>

**Table 4.1. Hotel Amenities**

<table>
<thead>
<tr>
<th>RMA code</th>
<th>Room Amenity</th>
<th>Campsite amenity</th>
</tr>
</thead>
<tbody>
<tr>
<td>219</td>
<td>Exterior corridors</td>
<td>Back in</td>
</tr>
<tr>
<td>222</td>
<td>Interior corridors</td>
<td>Pull through</td>
</tr>
<tr>
<td>121</td>
<td>Water purification system</td>
<td>Water Hook-up</td>
</tr>
<tr>
<td>237</td>
<td>Dish cleaning supplies</td>
<td>Sewage Hook-up</td>
</tr>
<tr>
<td>23</td>
<td>Converters/Voltage adapters</td>
<td>Electric Hook-up 15W</td>
</tr>
<tr>
<td>35</td>
<td>Electrical current voltage</td>
<td>Electric Hook-up 30W</td>
</tr>
<tr>
<td>152</td>
<td>Spare electrical outlet available at desk</td>
<td>Electric Hook-up 50W</td>
</tr>
<tr>
<td>62</td>
<td>Knock light</td>
<td>Partial shade</td>
</tr>
<tr>
<td>63</td>
<td>Laptop</td>
<td>Full shade</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>No shade (default)</td>
</tr>
<tr>
<td>220</td>
<td>Gulf view</td>
<td>Grass</td>
</tr>
</tbody>
</table>

**Table 4.2. Room Amenities**
4.3 Resulting Aim

It was decided that the camping systems would use an adapted version of the RMA and HAC code lists to store camping specific data. The mappings were done as in the Tables 4.1 and 4.2.

In all views the words Hotel was changed to Campground and Room was changed to Campsite/Pitch.

Figure 4.3. The resulting Search view

4.3.1 Search

In the search view the hotel equipments would be changed to campground equipments, but otherwise work the same way, see Figure 4.3. A possibility to choose hook-ups from checkboxes would be added, and if electric hook-ups was chosen, a drop down menu would be enabled, from which the user could choose 15, 30 or 50 watts. The number of people who answered that electric or full hook-ups is important to the choice of campground is very large, and because of this the hook-
ups choice was placed above the equipments in this view and the next one (Select Campground).

4.3.2 Select Campground

As in the search view, the equipments were to be changed and the hook-ups choices would be added. In this view the result list would be sorted according to the choices made in the equipment and hook-ups lists, see Figure 4.3.2. Since the choices in this view are stacked in a column with limited width, the electric hook-ups dropdown list was put below the electric hook-ups checkbox choice, instead of beside it, where the dropdown list appears in the other views.

![Select Campground view](image)

**Figure 4.4.** The resulting Select Campground view
4.3. RESULTING AIM

4.3.3 Campground Details

In this view a map of the campground would be added, and the extra amenities in table 4.3 needed to be possible to display. The seven first amenities are based on the answers to the user survey. The rest of the amenities, including electrical appliances, might seem strange to include in the details for a campground, but these amenities can be found in a bungalow or cabin at a campground. See Figure 4.3.3.

![Map of the campground with additional amenities](image)

**Figure 4.5.** The resulting Details view

Air Conditioning  
Non-smoking  
Handicap room  
Internet access  
Color Television  
Pets allowed  
Water closet  
Balcony/Lanai/Terrace  
Kitchen  
Dishwasher  
Refrigerator  
Oven

**Table 4.3.** Amenities
CHAPTER 4. RESULTS

4.3.4 Select Pitch

The top part of Campground Details and Select Pitch is the same (see Figures 4.3.3 and 4.3.4), with a picture of the campground, the name of the campground and a short description, and it is in this part that the map of the campground will be placed, so the map will be shown in this view too. Under the header, a selection of hook-ups would be added. These will not be connected to the previously made choices of hook-ups, since those were about what hook-ups are available in general at a campground and these are the hook-ups that are connected to the specific pitch shown in the result list. In this part of the view, a selection of Terrain and Soil type would also be added. The three selections (equipments, soil and terrain) were used to sort the list of results in realtime. Since hook-ups were found more important in the user survey, these are placed to the left. Shade seemed marginally more important than Terrain according to the survey, and the two choices were sorted accordingly.

Figure 4.6. The resulting Select Pitch view
4.4. IMPLEMENTATION

4.3.5 Book Pitch

In this view nothing needed changing but the words. “Hotel” was changed to “campground” and “room” became “pitch”.

4.4 Implementation

The implementation was done in Java and Wicket [11], a Java based web framework developed by the Apache Foundation.

4.4.1 Message Communication

The IBE sends XML OTA request messages with the information it wants and receives the requested information in XML OTA response messages. This information is parsed and saved in Java classes as properties, ready to be interacted with and displayed.

4.4.2 Problems and Changes

The size of a pitch was supposed to be saved as a part of the pitch description, with special delimiters. However when the messages reached the IBE, the description turned out to be empty. Some debugging and digging showed that the objects had what was called a long and a short description, and only the long description was shown in the Admin Light while only the short description was sent with the messages to the IBE. The descriptions were not limited to a certain length, so the names long and short are a bit deceptive. Fortunately, the messages used to communicate with the CAL could contain the short description field, and that was added to the CAL, and the size was sent as a part of the short description as width, height and area with “:” as delimiter (description:width:height:area).
Chapter 5

Conclusions and Discussions

A prototype campground booking system was developed without changes to the existing message and database structures. This was done in collaboration with the developers of the administration system. The completed prototype was not fully functional in the sense that all possible choices in the program did not give the sought after results, but all types of functionality could be tested and were working.

5.1 Future Development

The Campground IBE was done as a prototype that the marketing department should be able to use to sell the concept to campground chains. During the development of the prototype there was not time or resources enough to do everything that might be appreciated by the end users.

5.1.1 Message Structure

The messages used at this time used certain groups of data. For example, the equipments sent to the IBE were part of a group that was implemented in the message sent to the IBE. These groups had limitations not only in the way that it would only accept certain equipments, it also had a limited number of equipments. In the prototype Campground IBE this was solved by preparing the system to work with new messages that could send all the equipments needed. It still displayed these search options but did not have the logic working in the background for more than the 7 equipments we could map to something else temporarily. In a proper, working system the message structure per se need not be changed, but a new group of equipments/amenities needs to be created and implemented in the system that communicates with the Campground IBE.

Another problem with the message structure was the different kinds of messages. To find available hotels or campgrounds the OTA_HotelAvailRQ message must be used. The corresponding response OTA_HotelAvailRS contains what is called property information, information about the campground, with descriptions and
pictures of the property and HotelAmenityCodes. First after a specific campground is chosen a OTA_HotelDescriptiveInfoRQ message can be sent, and information about the rooms or campsites/pitches is received. If certain information about the campsites/pitches was sent at once (included in the OTA_HotelAvailRS), searches for campgrounds with eg. pitches of a certain size could be made from the first view.

5.1.2 Dreams

It would have been great if it was possible to search for pitch size and type of lodging at first search. The user would have been able to say “I have a tent of 7x11 foot and I want to find a campground in Stockholm”. However, this was not possible without changes to the message structure and it could possibly have brought on changes to the database as well.

Another idea was to display independent reviews and ratings for each campground. However, independent campground ratings were not to be found, so the functionality fell on that. To design and implement a place where users can rate campgrounds was outside the scope of this thesis.

Interactive Map

Several campgrounds have maps of their site, where the campsites/pitches are marked and a user can see which campsite or pitch he/she is about to book. This was also something that several survey takers pointed out as something they thought was important. One person mentioned an interactive map over the campground, where the user can see the available pitches and choose one he/she wants to book. However this would have required both more time than was allotted, and some changes to the database, to store geographical information about each campsite/pitch.

One possible solution would be to use Google Maps and zoom in on the satellite picture of a specific campground. The picture of the map can have so called overlays, which will show the different campsites/pitches. With the help of geographical coordinates, the system can draw the exact layout of the campsite/pitch and have the user interact by clicking on the map on the pitch he/she wants to book and that pitch will be chosen. This would require geographical coordinates to be stored and sent with the OTA xml messages, which would require changes to the message structure.
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Appendix A

Survey - Google Form
APPENDIX A. SURVEY - GOOGLE FORM

Figure A.1. Editing a Google form
Campground reservation

This survey is meant to help create a Camping Reservation System that both campers and campgrounds are satisfied with. The survey is anonymous. Thank you for your time.

* Required

Where are you from? *
France

Most important when searching for a campground

In the section below, list the 5 most important attributes of a campground that you look for when searching for a place to go camping, (eg, pets allowed, convenient store, full hook-up available...)

The answers to these questions will help decide what items should be displayed when listing campgrounds to choose from.

What is the most important thing when searching for a campground? *

What is the 2nd most important thing when searching for a campground? *

What is the 3rd most important thing when searching for a campground? *

What is the 4th most important thing when searching for a campground?

What is the 5th most important thing when searching for a campground?

Most important when choosing a pitch/site on a chosen campground

Figure A.2. The survey, part 1
APPENDIX A. SURVEY - GOOGLE FORM

Most important when choosing a pitch/site on a chosen campground
In the section below, list the 3 most important attributes of a pitch, when you have found a campground and it is time to choose a site for your RV/trailer/tent. (eg. width, hook-up, shade...)

The answers to these questions will help decide how to display the pitches/campsites to choose from.

What is the most important attribute of a pitch/campsite?
Do not answer this question if you only go camping in cabins/bungalows.

What is the 2nd most important attribute of a pitch/campsite?
Do not answer this question if you only go camping in cabins/bungalows.

What is the 3rd most important attribute of a pitch/campsite?
Do not answer this question if you only go camping in cabins/bungalows.

What would you change/keep?

In existing camping reservation systems, is there anything that you appreciate particularly much, or something you think is missing?

Submit

Powered by Google Docs

Figure A.3. The survey, part 2
Appendix B

Survey Answers

Figure B.1. Answers at least 2 people thought important for the choice of Campground

In B.1 the answers that only one person answered are invisible, since the chart became too big to display all the answers. In the chart are all the things that two people or more thought were important when choosing a campground.
Figure B.2. All answers rated as important by the respondents for the choice of Campsite/Pitch

Figure B.3. Answers from the UK - rated as important by the respondents for the choice of Campground
**Figure B.4.** Answers from the USA - rated as important by the respondents for the choice of Campground

**Figure B.5.** Answers from other countries - rated as important by the respondents for the choice of Campground
APPENDIX B. SURVEY ANSWERS

Figure B.6. Answers from the UK - rated as important by the respondents for the choice of Campsite/Pitch

Figure B.7. Answers from the USA - rated as important by the respondents for the choice of Campsite/Pitch
Figure B.8. Answers from other countries - rated as important by the respondents for the choice of Campsite/Pitch