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INFORMATION SYSTEM FOR ACCOMMODATION SERVICE SEARCHING AND MANAGEMENT

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Abstract

The purpose of this study was to do a research about information systems and databases and implement an information system for accommodation service searching and management. The information system took part of two fields: the system for properties which provide accommodation services (hotels, entrepreneurs, etc.) and the system for the clients. The information system is web-based application.

The purpose of the system for properties was to do a business by providing services that an administrator of the property could manage his reservations by using this application. The system has functionality to manage rooms and bookings of the property by adding, editing, deleting and viewing them. One of the goals was to make it in a way that it would not require much cost for implementation. Because of that, this service would be affordable for small hotels and entrepreneurs.

The reason of creating the system for clients was to help to advertise the registered properties. This is separate web application which has functionality for clients to search a suitable room and reserve it. This application uses the same database as the application for properties. Moreover, it is free of cost.

The result of the work is that the information system was successfully implemented. It is able to provide accommodation management service for properties administrators, and searching, reserving service for clients.

Keywords

Information system, web application, user interface, project development

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1   INTRODUCTION

These days' people try to find opportunities to travel, to get to know or just to have some rest somewhere at their home or foreign country. Because of that, the demand for tourism services increases every day, and therefore it increases the business for transportation, renting and lodging information systems. There are more small enterprises for renting and resting services. These services can be small hotels or entrepreneurs.

One of every property's goals is to always get new clients. In that case, advertising is needed, but it is not enough to have services from advertising agents. Advertisement can also mean the results in the search engine (information system) of specific services, when clients see or even order some services on the internet.

This project is about properties which rent rooms (hotels, motels, entrepreneurs, etc.). They all have to gather the required information about reserved rooms, clients, who checked-in or checked-out, or for additional services such as breakfast, additional bed, internet connection. The business of accommodation services gets more clients who want to use these services, so it's no use to store all the information about them in the notebook. Saving important data should be automated to make collecting and searching information easier and faster. By looking from a client's side, the client wants to get all the information about properties and available rooms from the internet to easily choose a place or service.

The majority of renting business management and monitoring systems are applied for big companies. They have a lot more different functions than small companies usually need. Too bad, large information systems require high expenses and there's no possibility for small or private businesses to afford them. Also, to make a property's management simpler, the information system should relate to the web application for online booking, so that clients could make reservations and order services by themselves.

The goals of this project are to do a research about information systems and databases, and implement an information system for properties providing short-term accommodation services and for clients. Therefore, the system has to have one part for managing accommodation business and other part for searching and reserving rooms online. First part would make their administrator's work more effective, easier and faster, other would provide clients to easily find a suitable room and reserve it. The system should also accurately provide information on the required room's availability and reservations. It must be available to use anytime and be reached from any place.

The structure of the project contains of nine chapters and conclusion. The following two chapters explain the theoretical information about information systems and databases, how do they work and why do we need them. Chapter 4 starts planning the implementation by choosing the suitable tools and software. Chapter 5 describes the idea of the practical part and Chapter 6 lists the main requirements for the information system. Other chapters illustrate the process of implementation and describe its functionality in detail.

2   UNDERSTANDING INFORMATION SYSTEMS

Every business has their own data which have to be stored. Therefore, most of them have databases and user interfaces of their own or they use other commercial products specified for their business field. These are called Management Information Systems, shortly MIS.

2.1   What are management information systems?

"Management Information Systems are broad systems that provide decision-makers with information necessary to make effective decisions. As a separate discipline, MIS deals with the study of information and its impact on individuals, organizations, and the society. It is a system that creates, processes, stores and generates information within and outside an organization. The objective of MIS is to furnish information for decision – making, planning, initiating, organizing and controlling the operations of the

subsystems of the firm, and also to provide a synergistic organization in the process." (Sarngadharan & Minimol 2012, 32.)

In simpler words, Management information system, later will be called information system or IS, is a user interface related to a database. All input information from the user goes to a database and, when needed, the information is taken from the database and manipulated, or just shown as output in the user interface.

2.2 Components of information systems

Information system has these types of components:

- Hardware - physical devices
- Software – programs which tell hardware what to do
- Data - information manipulated by software
- People – users that are involved
- Process - steps to accomplish a goal (input, output of information)

Also, other component might be a network, if remote management is required. Networking manages availability for remote connection. However, to put it in another way, hardware is needed for servers to run an operating system and software which supports a database and user interface to let users carry out processes to accomplish the manipulation of data.

2.3 Software quality requirements by the ISO standard

When creating an information system, some attention should be given to ISO International Standards to correspond to quality characteristics. According to Standards article in their official website, ISO International Standards (2017) ensure that products and services are safe, reliable and of good quality. For a business, they are strategic tools that reduce costs by minimizing waste and errors and increase productivity. They help companies to access new markets, level the playing field for developing countries and facilitate free and fair global trade.

Accommodation service management and searching information system should correspond to ISO/IEC 09126 or the newer ISO/IEC 25000:2014

standard, called Systems and software Quality Requirements and Evaluation, which says that software should have these requirements for external and internal view and for a user's view. These are shown in Figure 1.
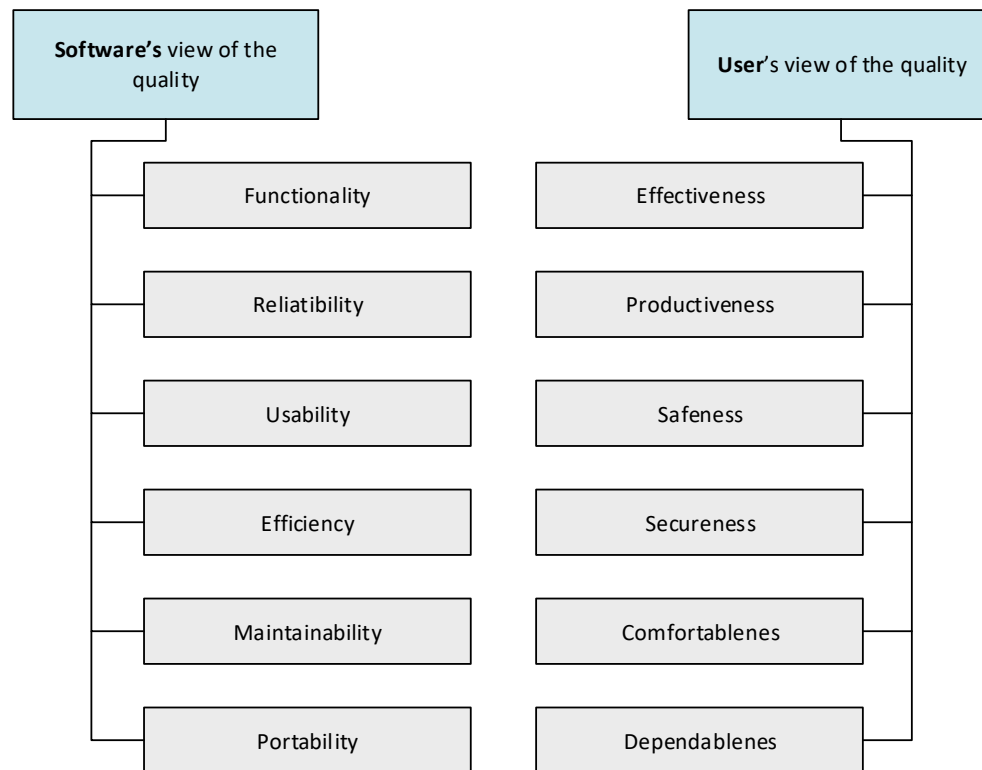
Software's view of the quality	User's view of the quality
Functionality	Effectiveness
Reliatibility	Productiveness
Usability	Safeness
Efficiency	Secureness
Maintainability	Comfortablenes
Portability	Dependablenes

Figure 1. Software requirements ISO/IEC 09126 (Standards 2017)

To sum up, the Management Information System consists of several components and many requirements which are needed to make a business automated, faster and easier to manage.

3 UNDERSTANDING DATABASES

As mentioned in Chapter 2.1, every information system gathers required information of a business. All important information is saved into databases. Mostly companies gather information about their production, for example, what and how many products they produced, how many and for how much they sold and to who or what company. Therefore, with the help of an information system, gathered data is saved into tables which consist of attributes (columns) of different data types and length. All tables and attributes have their own unique names. Every table has an indexing attribute to have a unique number for each row. So, after storing the information can be used to

manipulate it or just to show it as a user interface with some kind of structure by using tables or creating different blocks to show.

3.1 Databases

One of the IS components is data, and data is saved in a database. Without a database, an information system would have no purpose. All the needed information has to be saved and used, when required. "A database consists of some collection of persistent data is used by the application systems of some given enterprise (Date 1994)."

According to Sekliuckis, Gudas & Garsva (2006), it is important to consider the following data characteristics when making a database project:

- integrity
- non-redundant
- non-conflicting
- safe
- independent

Data has **integrity**, when it corresponds to some conditions, and when modified, has to keep the same conditions. **Non-redundant** means that the database cannot be overloaded with not required information and should avoid data duplication as much as possible. Also, pieces of data cannot **conflict** each other: information of the same group can't have different types. Of course, information should also be **safe** from intentional or unintentional data modification, deleting or forbidden access to the data. Information systems should have different user groups with the required rights. And **independent** means that, if a user interface and data storage method change, the database's arrangement, entity and attributes don't have to change, too (Sekliuckis, Gudas & Garsva 2006.)

3.2 Database systems

"A database system is basically a computerized record-keeping system; that is, it is a computerized system whose overall purpose is to maintain information and to make that information available on demand" (Date 1994).

In other words, a database system creates the ability to store information in the database as input and to be shown as output. Input means the process of storing an information into the database by the user interface or generated by a program, output is the process of displaying the data in a user interface or printing information from the database.

According to Date (1994), the user of the system will be given facilities to perform a variety of operations on such files, including the following among others:

- Adding new, empty files to the database
- Inserting new data into existing files
- Retrieving data from existing files
- Updating data in existing files
- Deleting data from existing files
- Removing existing files, empty or otherwise, from the database

Moreover, databases are used to work with programmed user interfaces on a terminal or workstation. Database systems give facilities to communicate between user interfaces and databases.

Database systems can be divided into SQL and NoSQL systems. SQL systems use queries of Structured Query Language (SQL) to manipulate data in databases. NoSQL systems have their own application programing interface which dictates its unique rules to communicate with database. What's more, some of NoSQL databases support SQL.

3.3 Data types

Companies gather different types of information: plain text, numbers, date, time and more. Also there are different types of text, different types of numbers and other elements. For example, in SQL text the CHARACTER type can hold character strings with a fixed length, but VARCHAR can hold any number of strings, but not longer than the specified length. Numbers can be of the INTEGER type which stores just integer numbers, or FLOAT type to store any type of number. Date and time are stored in two ways: separately (DATE

and TIME types) or together (TIMESTAMP type). Every attribute has its specified maximum length. Mostly the length is specified by a database system user, but there are exceptions that some data types have their length beforehand, such as numbers' type REAL with the maximum of 64 characters, and it cannot be changed, or BOOLEAN which doesn't need to have length, because it stores just TRUE or FALSE values. Data types are used to protect databases from wrong data input and store the data more efficiently.

4 TOOLS FOR IMPLEMENTATION OF THE PROJECT

There are many ways to create an information system: web-based, standalone (require installation on every device), mobile applications, etc. They all require different tools to implement and it should be considered what type to use, depending on the business requirements.

4.1 Programming tools

This project is for hotels, entrepreneurs, and other properties administrators, and also for clients – internet users. The system should not require much expense, and in that case, it can't require too many expenses and time to develop. Therefore, it was decided to create the project by using these tools:

- HTML (Hyper Text Markup Language) – markup language to tag web page content in blocks.
- PHP (Hypertext Preprocessor) – dynamic programming language for applications which can communicate with the HTML language. PHP is a server-side language, which means that code need to be executed on a server.
- CSS (Cascading Style Sheets) – design language supposed to define web pages' layout and design. CSS is used to describe HTML document style.
- JavaScript – object-orientated scripting programming language. JavaScript is usually used to impact or manipulate what's already in HTML tags. This project mostly requires it for JavaScript modules, like jQuery which is able to make websites more interactive, for example through adding animations or better forms and colors.

- SQL (Structured Query Language) – structured query language for storing and manipulating data stored in a database. The most of the database systems support SQL.

However, why was it chosen to use these languages? First of all, a web page is the easiest and the most effective way to implement the required information system, because every device, such as a computer, tablet, or smartphone, supports it. A website could also be created by using the Java programming language, but the PHP user interface is a lot simpler, and doesn't take that much time to program. Another option could be to create software for the Windows operating system, for example, using Java or C#, but it wouldn't be available remotely and would take more time to implement.

4.2 Software

The last details to mention in this chapter concentrate on creating the practical part of the project and using it on a personal computer, not implementing it for an enterprise. It should be first created by using the easy configurable software, then to implement on servers or hosting services. This mainly requires:

- a HTTP server (Apache, Nginx, etc.) with installed PHP packages to execute PHP language codes and to reach IS remotely.
- a database system (MySQL, MariaDB, PostgreSQL, etc.) to store, manipulate and manage data in a database. Here is used MySQL which is one of the most popular database systems with the SQL language. In MySQL data is stored in tables. Every table consists of a different type of information (objects) and has relationships to other tables.
- a text editor to write and edit code.
- a web browser to test the information system.

There are several options to consider how to implement the system: to create a server with required software, use specified software, in this case XAMPP, for easy web implementation or to buy the hosting service. However, it was

decided that the following software will be used to implement the information system:

- The XAMPP software gives facilities to execute web applications and use a database system. XAMPP includes an Apache server to support web applications, the MySQL database system, FileZilla for FTP server to transfer files remotely and TomCat to execute web applications created with the Java programming language. In this case, Apache is useful, because it has PHP modules and MySQL to gather and manipulate data in the database.

- Notepad++ is a text editor which supports many programming languages. The main benefits are that the software can see and modify several files at once, and it makes clearer syntax in different colors and requires very little hardware resources.

- Several types of web browsers will be used, such as Chrome, Opera, Firefox, Edge, Internet explorer. One is not enough, because the information system needs to be tested on different browsers.

The common benefits of all the above software is that there is no cost, and few hardware requirements, and they are easy to use and configure. These could be other options: running several servers (HTTP, SQL and Mail) or buying a hosting service, but these two are needed for business implementation, not for creating the system. Instead of a text editor, Microsoft Visual Studio or JetBrains PhpStorm could be used, but it's not free and all coding languages used in the project don't need to be compiled, so it can be written just by a simple text editor. Of course, they have additional tools and functions which help coding, such as error checking, code and file navigation and more. However, it's better that the system wouldn't have any costs.

4.3 Email service

When the system for clients makes a new reservation, it should send emails to both the client who made the reservation and to that property's administrator. To make that system would send emails, it requires an email provider and PHP code which would handle that.

The process of sending emails requires SMTP (Simple Mail Transfer Protocol) server. There are several choices of getting SMTP: using software, such as XAMPP, implementing SMTP server or buying a hosting service. In this project was decided to buy the hosting service which would provide emailing.

The most efficient way to send emails by PHP is to use some code library of other developers. In this case, the PHPmailer is going to be implemented. PHPmailer provides code classes and examples to send emails. With the help of this library, the system should connect to the SMTP server provided by the hosting and send emails with the information about the reservations included.

4.4 Working principle of web-based application

The information system has the graphical user interface and database, therefore, the web server and database system are used for the implementation. The application is reached by the web browser, which connects to the server, passes the requests, get requested data and displays it into the web browser's interface.

PHP language is a server-side scripting language which means that it uses a web server. A web server must have PHP modules installed to recognize the language. HTML, CSS and JavaScript aren't server-side languages, therefore, they don't need any additional modules installed. In this project XAMPP software is used, because it has everything included that regular web application would need. Moreover, HTML language with a help of CSS builds a structure of the website, CSS formats objects and creates the visual style of a page. JavaScript takes just a small part in this project of creating interactive objects, such as Datepicker.

Web application communicates with the database by using PHP and SQL. PHP code sends the SQL query to the MySQL database system which recognizes and executes it. The following example of code connects to MySQL and executes the query:

```
$connection = new mysqli('localhost', 'database_username',
'database_password', 'database_name');
$result = mysqli_query($connection, "some_query_of_SQL_language");
```

Every web page of information system is in the different files. Also classes and some other objects that are used in more than one page (panels, content areas, gallery, etc.) are in the separate files, and they are included when needed.

5   UNDERSTANDING THE IDEA OF THE PROJECT

This project contains of two parts, or in other words, two information systems. One is for the property administration, the other is for the client. The system for the property administration is the main part and receives the most of attention to create, because it is a product which is going to produce income. Its main purpose is to manage property business by managing bookings. The client system's purpose is to connect all the properties which are registered in the administration's system to one platform, to make them visible for the clients. It is an additional service for advertisement and automatization purposes by relating the reservation processes in both systems. To make it clearer, Figure 2 shows these two parts and how they are related to the database and users.
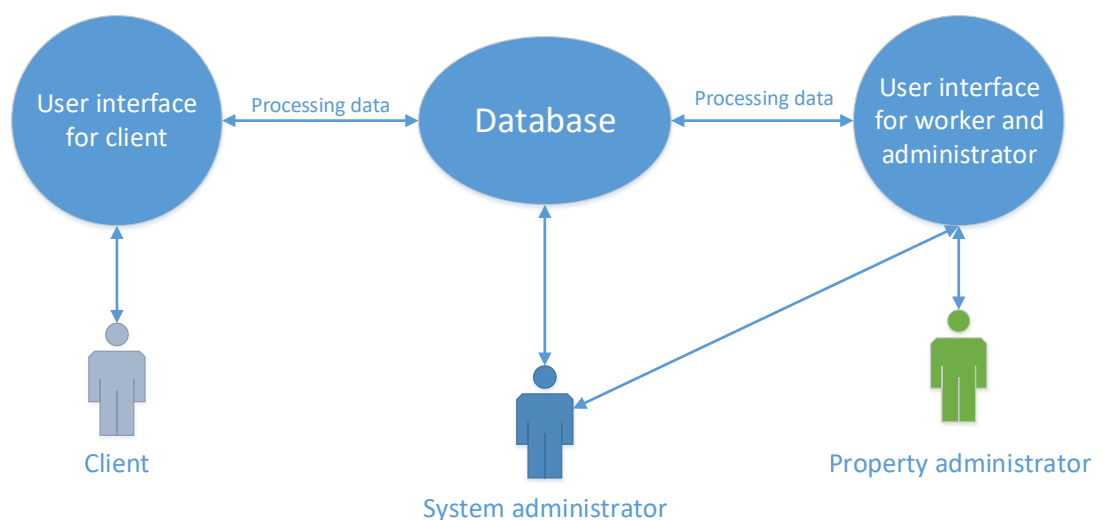
Figure 2. Model of information system

The administration's information system has the following main functions: checking, adding and managing bookings, rooms of the property and clients. Also, the system should have the functionality of showing reports of summaries about reservations. This system should make the property's management more functional, simpler and faster. The client's IS is supposed to have a search engine to find suitable and available rooms and to let clients reserve the rooms, manage their own reservations in anytime. However, these two information systems need to be related to each other and have the required features to make business go well.

6 REQUIREMENTS FOR IS

Before implementing the project, the information system should correspond to as many requirements as it takes to implement the product for the highest quality. There can be different types of requirements, such as requirements for visual components, functionality or fail checking to avoid mistakes in information input or output.

6.1 Main requirements

For implementing the information system for business, the system should correspond to the most important requirements, for example to have enough hardware resources or be accessible remotely in anytime. Based on the international software standard ISO 09126 (see Chapter 2.3), some requirements for an IS are that it should be simple, safe, stable, fast and multifunctional:

- **Simple**. An IS should have a simple and clear graphical user interface which would give facilities to easily manage the system, see, add or manipulate the information needed.
- **Safe**. User data have to be secured with authentication (username and password). The system cannot have input, output or edit errors.
- **Stable**. The system should withstand all the traffic going in and out the server to have as many users logged in at the same time.
- **Fast**. It is important that loading a page wouldn't take more than a couple of seconds. The user couldn't work effectively and fast, because of long page loading time.

- **Multifunctional**. The IS should have all the functions that a small accommodation business would need.

All these requirements are needed to maintain a users' positive attitude to increase the demand. Even a fail of the one requirement can cause the break to the demand.

6.2 Functionality requirements for the project's IS

Functionality is the capabilities of the application, what it can do and what results can get for a user. The information system for accommodation management and searching services consists of three types of users: system administrators, property administrators and clients. Therefore, the following lists explain the requirements that each user would require:

For system administrators:
- **New user creation**. Only system administrators can create a new account for the property worker. A user can be created by entering its email and the administrator's password. Then the user can complete a registration itself in the registration page.
- **Users management**. The administrator has the ability to see, edit and delete any user.

For workers:
- **User and property registration**. A worker can register a new user, if a permit is given by the system administrator. The property can be registered after the user registration.
- **Adding and reserving rooms**. A worker has a possibility to add new rooms which relate to the property and reserve them.
- **Information editing**. A worker can edit the profile's, property's, room's and booking's information.
- **Room review**. The system provides the list of rooms registered in the property with the main information included. There every room's information can be accessed in detail. This information consists of the description, photo gallery, availability and a list of additional services.

- **Ordering additional services**. A worker, in a process of adding a room, has to add a list of additional services (such as additional bed for a child, sauna or breakfast) if available, which can be reserved by filling in a room reservation form.
- **Booking review and searching**. Bookings are shown either on a home page in the booking table or in the page with a list of bookings which also can be filtered by specified criteria. Each booking can be shown separately in the table with all needed information included.
- **Reports**. The system provides reports of summarizing the business of the property process. Reports are needed to sum up the gathered information and to manipulate it in some way to get more information on how the business is doing: reports about bookings, rooms' availability, for example, a report of reservations of current day or last month.

For clients:
- **Searching for a suitable room**. A client uses the separate information system (other part of the web application) which supports an automatized rooms' availability check and ability to search them by specified criteria.
- **Booking a room**. A client has the privilege to reserve any room included in the system. After a reservation process the client receives information about the booking and the payment receiver which are shown in the web page's content and sent to the client's email. The property administrator also gets an email with an information that the client has reserved a room.
- **Booking review**. Clients can check their reservation's information by entering the booking's number and password that they got after reservation process.

To sum up, different user types have different roles in using the system. System administrators take place at user management, property administrators at rooms, bookings and clients management, and clients at room searching and reservations.

6.3   Use-case model

According to article Guidelines: Use-Case model (2002) a use-case model is a model of the system's intended functions and its surroundings, and serves as a contract between the customer and the developers. Use cases serve as a unifying thread throughout system development. The use-case model contains four components: the system's users, the system itself, processes and lines showing the relationships between components.

The use-case model is a useful and easily understandable way to show the system's functionality requirements. Figure 3 shows this system's use-case model of the main functionality for the both parts of the system – the property administrator's part and the client's part.
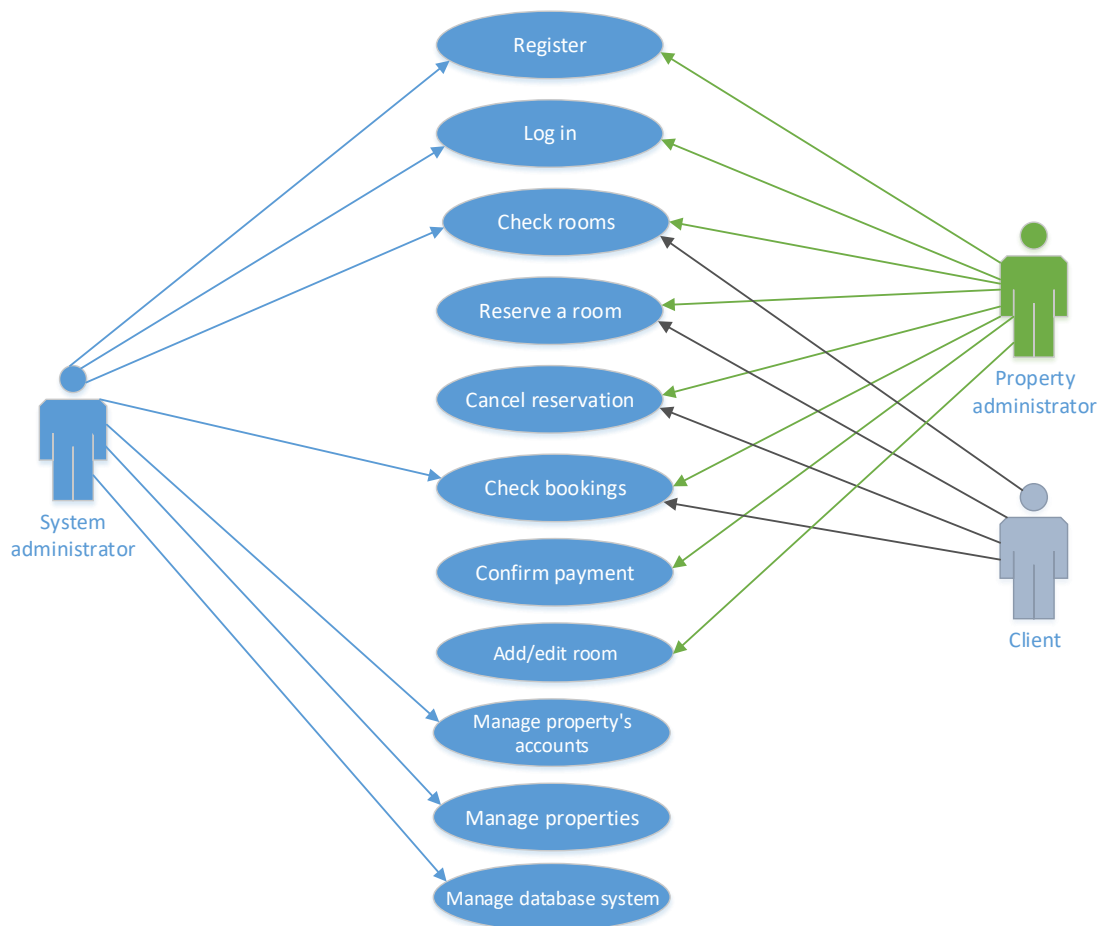
Figure 3. Use case model of an information system

Figure 3, the use-case model of the information system of accommodation service searching and management, shows that the system administrator's purpose is to monitor and manage workers', clients' and properties'

information and the database system. A property's administrator monitors and manages one property's rooms, bookings and clients. Clients check rooms and manage bookings by themselves.

However, the use-case model shortly explained processes related to users. Some of the processes are related to only one user but some has more than one relations, such as checking or reserving a room. All these requirements show what users need, what they would want to see, and what functions to use to not be disappointed of buying the services of the information system.

7   SOFTWARE INSTALLATION

To make the environment for creating an information system is quite easy. The following instructions are for the installation and configuration of software to have an Apache server for the ability to use PHP language and to reach remotely, a MySQL server for database management and a text editor to write a code.

Installing XAMPP

The installation of the XAMPP and Notepad++ software on the Windows operating system is quite simple, because it requires just a few additional configurations. XAMPP can be downloaded from this internet address: https://www.apachefriends.org and Notepad++ from: https://notepad-plus-plus.org/download/v7.3.1.html .

To install XAMPP, a downloaded file has to be started, and then just installation guide needs to be followed with default options. To start the Apache and MySQL services, the xampp-control.exe file in C:\xampp directory opens the XAMPP control panel window shown in Figure 4. Start buttons in the Actions column in the lines of Apache and MySQL (marked by red rectangle) starts HTTP and SQL services. It's worth mentioning that the Skype application should be turned off, because Apache uses the same port and one port can hold just a single application, and Apache won't start this way.
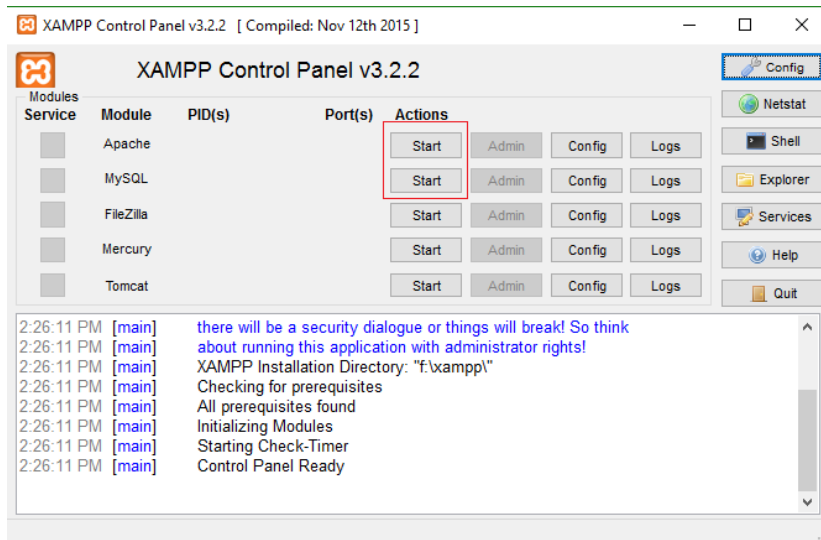
Figure 4. XAMPP Control Panel

To test Apache in a web browser the address http://localhost is used. It displays the XAMPP dashboard, which is shown in Figure 5.

Figure 5. XAMPP test page

The address http://localhost/phpmyadmin tests the MySQL database system shown in Figure 6.
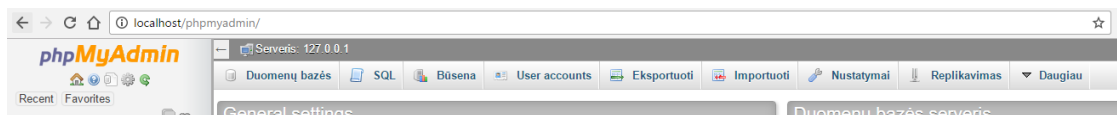
Figure 6. MySQL database system

Installing Notepad++

The Notepad++ installation guide starts with a downloaded file, and when installed, by using the default options. The Application starts using a notepad++.exe file in C:\Program Files(x86)\Notepad++ directory.

The only configuration that should be done is to change the character (letters, symbols etc.) encoding standard to UTF-8. This standard identifies almost all characters. To do that, after starting the Notepad++ application, on the upper

navigation menu, Encoding and then Encode to UTF-8 need to be pressed (shown in Figure 7).
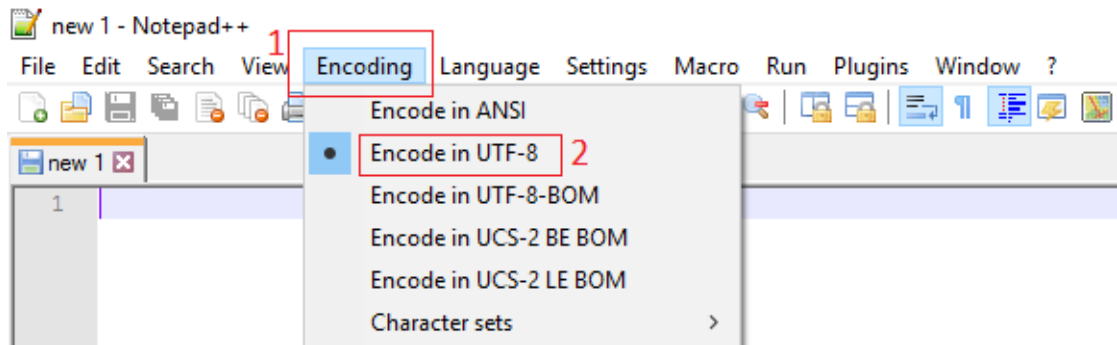
Figure 7. Configuring encoding in Notepad++

8   THE STRUCTURE OF THE DATABASE

One of the important things in the information system is to make smart and well-thought structure for the tables and relationships between them. A wrong structured database can cause some problems with storing the data and it can take too much work to recreate, because the application's code is related and needs to be repaired, too. In other words, a database has to be planned before implementing the application.

8.1   Tables

Both parts (client's and worker's) of the information system of accommodation services use the same one database. This database includes these objects: **users** (clients and workers), **properties** which provide short-term accommodation services, **rooms** in the properties, provided **services** of rooms, and **reservations**. All these objects take an important role in managing bookings. The objects are divided into tables. Every table consists of data which all is important in different cases. Table 1 shows tables included in the database which take up all listed objects.

Table 1 – list of tables

Name of the table	Description
properties	List of the properties and their contact information
rooms	Detailed information about rooms which relate to the table of properties
room_photos	Names of pictures of rooms, relates to rooms' table
inc_services	Included services of a room, relates to rooms' table.
add_services	Additional services of a room that could be ordered, relates to rooms' table
workers	Personal information about workers and login information to let workers use the system, relates to properties' table
clients	Clients who reserve rooms
bookings	Reservations of rooms which relate to rooms' and clients' tables.
ord_services	Ordered additional services of a room which relate to bookings' table.

However, the information system has nine tables which consist of different types of information. They all have one or more other tables related to them.

8.2   Table relationships

Another important step of implementing a database is to make relationships. Without relating tables in SQL databases, tables wouldn't be able to divide whole information into smaller objects. Therefore, relationships provide the ability to divide the tables and don't lose the related data. Every table has the primary key field, which is needed for other tables to relate to. Other tables have foreign keys to store the linked primary key of another table. For example, one property has more than one worker, client and room, and one table could gather only one worker, one client, and one room. As a result, they are stored to different tables and related by primary and foreign keys which are shown in the diagram of table relationships in Figure 8.
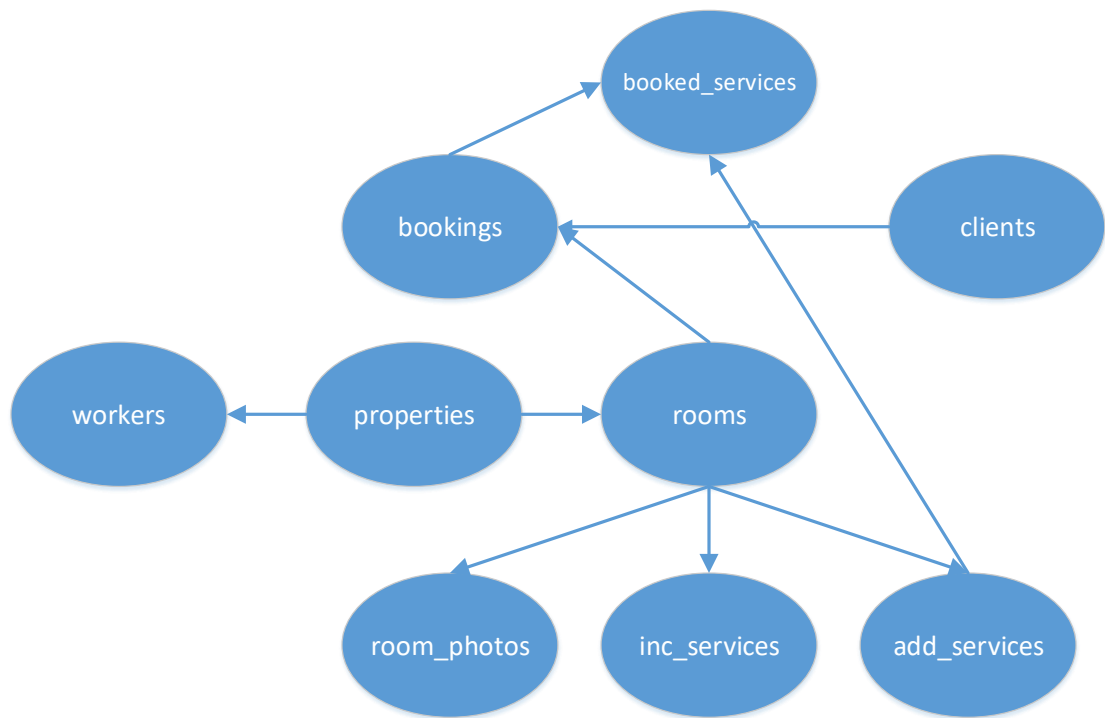
Figure 8 – the diagram of relationships of tables

As Figure 8 shows, every table isn't standing alone. They all are related to specific tables. Arrows illustrate that a relationship starts from the primary key to the foreign key of two tables. Now the database can hold multiple data in an object, such as property can have more than one room or worker, and rooms can store more than one photo.

8.3 Tables in detail

The following tables explain the database information in detail: attributes (columns), data types, maximum characters' length and other special conditions for the data.

Table "properties", shown as Table 2, gathers information about registered properties. The phone number and email are of the property director or other privileged person that system administrator could contact for some questions related to business. The property's bank account is for clients to transfer money for bookings.

Table 2 – attributes of "properties" table

Attribute's name (full name)	Data type	Maximum length	Special conditions
property_id (property's ID)	int	7	Auto-increment, primary key
name	varchar	35	-
address	varchar	70	-
post_no	varchar	9	-
phone_no (phone number of the main property's administrator)	int	15	-
email (e-mail of the main property's administrator)	varchar	255	-
bank_acc (bank account)	varchar	17	-

Table of rooms consists of the main information and the description about a room, shown in Table 3. Also it has related attribute to the property's ID to identify the property. The name for worker and for client means that in client's and worker's information system, the room name will be shown differently. For example, for worker the name is Room No. 105 and client sees it as Double room.

Table 3 - attributes of "rooms" table

Attribute's name (full name)	Data type	Maximum length	Special conditions
room_id (room's ID)	int	7	Auto-increment, primary key
property_id (property's ID)	int	7	Foreign key
name_for_worker (name for worker)	varchar	35	-
name_for_client (name for client)	varchar	35	-
amount_of_beds (amount of beds)	int	3	-
description (room's description)	varchar	1500	-
price (room's price for a night)	decimal	7	-

Table of room photos has names of pictures' files and the relation to the
room's ID ,shown in Table 4. It is used when data about a room is shown. This
separate table is needed, because one room could have more than one
picture. NoSQL database could handle this with a single table, but SQL
doesn't have this type of functionality.

Table 4 - attributes of "room_photos" table

Attribute's name (full name)	Data type	Maximum length	Special conditions
photo_id (room photo's ID)	int	7	Auto-increment, primary key
room_id (room's ID)	int	7	Foreign key
name (name of the photo)	varchar	70	-

The table of included services gathers information about included services of
the room ,shown in Table 5. This table relates to the room's ID and has a name
of the service (such as internet connection, bedding, breakfast and more).

Table 5 - attributes of "inc_services" table

Attribute's name (full name)	Data type	Maximum length	Special conditions
inc_service_id (included service's in a room ID)	int	7	Auto-increment, primary key
room_id (room's ID)	int	7	Foreign key
name (name of the service)	varchar	70	-

The table of additional services of a room, shown as Table 6, consists of the
same attributes, but also includes a price of the service. It also relates to the
room's ID and has a name of the service. Additional services are such
services that clients can decide to order for an additional price (sauna,
swimming pool, additional bed for a child, etc.), which is calculated and added
to booking's information page.

Table 6 - attributes of "add_services" table

Attribute's name (full name)	Data type	Maximum length	Special conditions
add_service_id (additional service's in a room ID)	int	7	Auto-increment, primary key
room_id (room's ID)	int	7	Foreign key
name (name of the service)	varchar	70	-
price (price of the service)	decimal	7	-

Property's workers (information system's registered users) are listed in the "workers" table and related to properties, shown as Table 7. Table includes their personal, login and given privileges (property administrator or system administrator) information. Also, to be able to log in to the system, users must have "yes" value in the "activated" attribute.

Table 7 - attributes of "workers" table

Attribute's name (full name)	Data type	Maximum length	Special conditions
workers_id (room's ID)	int	7	Auto-increment, primary key
first_name (worker's first name)	varchar	35	-
last_name (worker's last name)	varchar	35	-
pers_id (worker's personal ID)	int	35	-
email (worker's email)	varchar	255	-
phone (worker's phone number)	varchar	15	-
password (worker's user account password)	varchar	35	-
privileges (given system privileges for worker)	varchar	15	-
activated (checks if the user is activated)	boolean	-	-
property_id (property's where the worker administrates ID)	int	7	Foreign key

The client's table gathers just main information about clients who booked a room, shown as Table 8. The information about clients can be added by both the client's and worker's information systems, depending on who is making a reservation.

Table 8 - attributes of "clients" table

Attribute's name (full name)	Data type	Maximum length	Special conditions
client_id (client's ID)	int	7	Auto-increment, primary key
first_name (client's first_name)	varchar	35	-
last_name (client's last name)	varchar	35	-
birth_date (client's birth date)	date	10	-
email (client's email)	varchar	255	-
phone (client's phone)	int	15	-

The table of bookings is the main table which gathers information about bookings, shown as Table 9. The table relates to three other tables: properties, rooms and clients. It also includes booking dates and costs, password for the client to check the booking, and checks if client is checked-in and checked-out.

Table 9 - attributes of "bookings" table

Attribute's name (full name)	Data type	Maximum length	Special conditions
booking_id (booking's ID)	int	7	Auto-increment, primary key
property_id (property's ID)	int	7	Foreign key
room_id (room's ID)	int	7	Foreign key
client_id (client's ID)	int	7	Foreign key
reg_date (booking registration date)	date	10	-
check_in_date (booked check-in date)	date	10	-

check_out_date (booked check-out date)	date	10	-
serv_cost (cost of booked additional services)	decimal	7	-
room_cost (cost of room for all days)	decimal	7	-
check_in (check if client is checked-in)	boolean	-	-
check_out (check if client is checked-out)	boolean	-	-
password (password to check the booking)	varchar	35	-

The table of booked services is additional to the bookings' table which includes only information about additional services ordered with the room, shown as Table 10. The table relates to booking's ID and additional service's ID.

Table 10 - attributes of "booked_services" table

Attribute's name (full name)	Data type	Maximum length	Special conditions
booked_serv_id (booked additional service ID)	int	7	Auto-increment, primary key
booking_id (booking's ID)	int	7	Foreign key
service_id (additional service's ID)	int	7	Foreign key
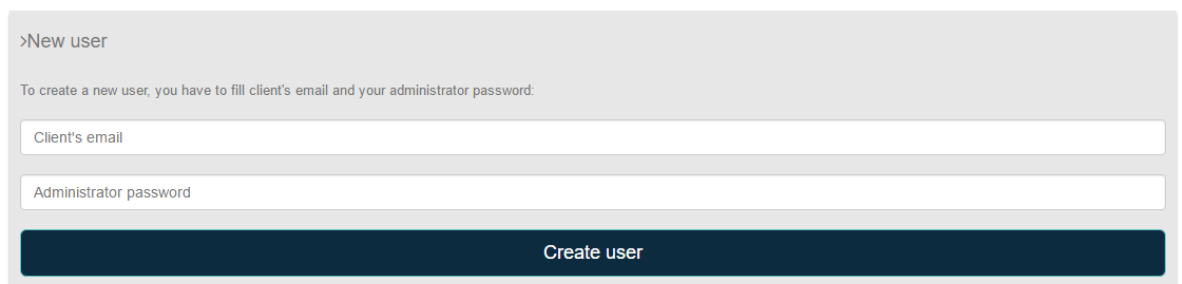
To sum up, all these tables gathers all the required information that a property administrator or a client would need. As was shown in the tables before, every table has specific relations to other tables. They all have fields of index number used as the primary key which automatically increments in every new record. It provides ability to identify the records for other tables and also when getting the data to a user interface. Every field has specific data type and length depending of the information: number, date or text.

9 THE PROPERTY ADMINISTRATOR'S INFORMATION SYSTEM

The most important part of this project is getting the information system for property's business management implemented. It requires a lot functionality to correspond to the main accommodation business management requirements. Moreover, this information system corresponds to the requirements listed in Chapter 6.2. The current chapter explains the worker's system's idea and its working principles and examples.

9.1 Getting ready to manage a property's business

To start managing an accommodation business, a property administrator has to get a confirmation from the system administrator allow to creating an account. When a client buys this information system's service, the system administrator confirms it by filling in a form through the control panel in the IS. The form is shown in Figure 9.

> **›New user**
>
> To create a new user, you have to fill client's email and your administrator password:
>
> | Client's email |
> | Administrator password |
>
> **Create user**

Figure 9. User creation page

This process adds the client's email to the database and generates a temporary password for the client. But the user still cannot login. The next step is that a client should continue creating the account (user). The first page that the system shows is a user login page (shown in Appendix 1), but to continue creating the account there's a link called "Create a new user". The link directs the user to the registration page where's a form to fill information about a worker: first name, last name, personal ID, phone number, email and temporary password. The fields in the registration form are shown in Figure 10.

Figure 10. Registration form

After filling in the registration form, the system opens a window with a form of fields to add the information about a property: name of the property, city, address, post number, contact phone number, contact email, and upload a photo related to the property. The page is displayed in Figure 11. It gathers the main information to be useful for both clients and system administrators. Name, city and address are shown for clients, and the contact information is needed for system administrators to communicate with property administrators.

Figure 11. Adding information of property

Now the system directs the user to the page for changing a password (shown in Figure 12. In addition, the system has the property's name now, therefore

the name and picture are added at upper-left corner. However, when a client has created an account, he received a temporary password which should be changed, but it is not compulsory to do it at that moment. To do it later, a user should go to any other page of the system by the navigation panel, and later go to Settings->Change password.

Figure 12. Changing user password

Let's check the home page by pressing the Home link. Home page is empty yet, because the system doesn't find any rooms (shown in Figure 13). This page consists of a table of rooms availability which makes working with bookings a lot easier. But first, it needs to have some rooms and bookings.

Figure 13. Home page

In the navigation panel Rooms->Add room is an adding room form. It includes these fields to fill in: room name for a client and for a worker, number of beds, description of the room, price for a night. The client and property administrator see different name for the room. A client should see a name which would interest him, such as "Double bed room in a nice apartment" or "Three beds at

4* hotel". And, the administrator can pick a shorter and more informational name, like room numbers or "Second floor on the left". Other fields are to have detailed information about a room. Next there's a block of room photos where the user should add up to ten photos with the vision of outside and inside the property and room. Then follows the block to add services of the property or room. There are two types of services: included in the price and additional which can be ordered when reserving a room. Included services are such as internet connection, breakfast or place in the parking lot. Additional are services that not all regular clients would want, such as sauna, swimming pool, additional bed for a child or room cleaning. Figure 14 displays the form for adding a room.

Figure 14. The form to add a room

That's how the adding rooms works. Including rooms is the last step of getting ready for work. Now the information system can make bookings. A few rooms were created to show later examples.

There are three ways to open a booking addition form: through the navigation panel on the left (Bookings->New booking), on the home page by using the Bookings table (explained later), or in the room's review page. When a window to create the booking is opened, the system asks to select a room at first. Then other fields to fill in are shown. The example is shown in Figure 15. These are the fields to reserve a room: client's arrival and leaving dates, client's first name and last name, birth date, email and phone number. Also there's the field to choose additional services and choose if the client checks-in now or later. However, a few bookings were created to show later examples.

Figure 15. The form to add a booking

After adding a booking, IS directs the user to the booking's review page. This page shows all the gathered information about the client and reservation. The example is shown in Figure 16. Moreover, the page shows who of the property administrators made a booking and when. Also, the system automatically calculates costs: sums up the room costs for all the nights and separately the additional services. At the end the total cost is shown. The top of the table has few functions. A user can change the client status, if he is checked-in and checked-out. And there are links to pages for editing and deleting the booking.

Figure 16. Detailed information about the booking

When a property administrator adds some rooms and bookings, a home page of the system becomes a very useful tool. The page draws a table which consists of booking information visually. Top headings of the tables are dates, left column is room names. By default, table shows dates' range from minus 5 days and plus 9 days to the current day. For example, if it is now April 4, the table shows bookings from March 31 to April 13. The column of the current date is marked by the green color. An example of the table is shown in Figure 17. In addition, if a user wants to see the table by a custom range, there are two fields to fill in above the table: starting date and ending date. By pressing the Show button, the system displays the table of the custom date range.

Bookings are marked by blue boxes in the table and there are first names and last names inside the boxes. So it is visually seen when a booking starts and ends by columns, and in which room by lines. If a user would press on any booking shown in the table, the system would direct him to the page with details about booking (as was shown in Figure 16). But if a user would press on any empty field in the table, the system would start a process of creating a new booking by popping up an alert box with a question "For how many nights do you want to reserve?" (shown in Appendix 2). After entering the number of nights, the booking creation page is opened as was shown in Figure 15, but with automatically chosen room, an arrival date and leaving date. This function lets the process of reserving rooms to take less time.

Figure 17. Table of bookings in the Home page

To sum up, this chapter showed the main principles of starting to work with accommodation service management information system. The main idea is to add rooms and to reserve them fast and see them in the most suitable way.

9.2   Viewing information in detail

The information system also has functions to see rooms and bookings separately. The list of rooms can be reached by the navigation panel Rooms->Rooms table. The information is displayed as a table. The table includes most of each room's information as a list. Moreover, in the last field of each row there are three buttons of options: to check the information in detail, to edit the record, and to delete it. The example of the table of rooms is shown in Figure 18.

Figure 18. Rooms list

By pressing on the button to check the information in detail, the system directs the user to the page where all the information about a room (including pictures, services and availability) is shown. The example of room information is displayed in Appendix 3.

The process of viewing bookings is quite the same. Booking information is reached by the navigation panel and Bookings->Bookings table. The table consists of the main details about the client, booked room, booked services and the sum of costs. An example is shown in Figure 19. There are also three buttons with the following functionalities: a button to check booking information directs the web browser to booking information page, which was shown in Figure 16. Other buttons lead to editing and deleting booking page.

> Bookings list:

Booking ID	Client name	Client last name	Client birth date	Room	Arrival date	Leaving date	Ordered services	Sum cost of services	Sum cost of room	Sum cost	Checked-in?	Checked-out?	More info / Edit / Delete
359	Jane	Beck	1978-04-08	Room No. 03	2017-04-24	2017-04-25	-	-	€70	€70	Yes	Yes	
358	Brigita	Brown	1965-10-11	Room No. 03	2017-05-06	2017-05-10	Breakfast (€5), Bed clothing (€5),	€10	€70	€80	Yes	No	
357	Jenny	Robledo	1985-03-05	Room No. 02	2017-05-04	2017-05-06	Breakfast (€5),	€5	€25	€30	No	No	
314	Sam	Samuel	1980-02-03	Room No. 01	2017-04-28	2017-04-30	-	-	€	€0			
313	Brydgitt	JOHNSON	1990-01-01	Room No. 01	2017-04-22	2017-04-23	Swimming pool (€15), Sauna (€10), Additional bed for a child (€10),	€35	€35	€70	Yes	No	

Figure 19. Bookings list

The user can also search for specific records. The Bookings search page is found by navigation panel Bookings->Bookings search. The page also has the table as was shown in Figure 19, but in the search page it has fields to fill in above the table. The part of the page with input fields is shown in Figure 20. There are these fields to search for: booking ID, room name, first name and last name of a client, arrival and leaving dates. This is not compulsory to fill in all the fields. They are filled as many as the user need. By pressing Search button, the system filters records of the bookings by entered criteria. In the code, the filtering is done by appending statements to the SQL query, for example, appending WHERE booking_id='$id', check_in_date='$arrival_date'.

> Bookings search

> Fill in fields to search:

By booking ID:

Booking ID

By client first name:

First name

By arrival date:

Arrival date

By room name:

Room name

By client last name:

Last name

By leaving date:

Leaving date

Search

Figure 20. Bookings search

To conclude, the information system provides detailed information about rooms and bookings. Also has functionality to find specific records of bookings. Mostly it is enough to see the main information in the list of records, but sometimes users can need more detailed information.

9.3 Editing and deleting information

An information system consists of not only the processes of adding and displaying data but also manipulating, editing and deleting it. The system has the ability to edit user's, property's, room's and booking's information, and also the ability to delete rooms and bookings.

The user's and property's editing page can be reached through the navigation panel in Settings section. But to edit rooms and bookings, the table of rooms (Figure 18) and bookings (Figure 19) have buttons for directing the user to editing page. The usage of editing is similar to adding new ones in Chapter 9.1, but the fields are already filled in with chosen room's or booking's information.

The deletion process is simple. The tables of rooms or of bookings also have buttons to delete a record. By pressing the button, the system directs the user to the confirmation page which shows the selected record and a button to confirm the deletion. The example of deleting a room is shown in Figure 21. Deleting a booking is the same, but instead of the room's record, there's booking's. When deleting a room, the system also deletes included and additional services related with the room. And also in deletion process the client information and booked services of the booking are deleted, too.

Name	Amount of beds	Description	Price (Eur)
Room No. 01	2	Visit our Hotel which has modern rooms, beautiful environment. Have a wonderful rest and enjoy additional services, such as sauna and swimming pool! Hotel is located in the main street of the city.	35

> Do you really want to delete this room?

Confirm deletion

Figure 21. The confirmation page for deleting room

However, the processes of editing and deleting is required of every information system. A user can accidentally make a mistake any time, which should be corrected immediately.

9.4 Viewing reports

Reports are important to follow how well business goes. Reports can be shown as plain text, as a table or diagram which generates the useful information for a user. This information system creates reports which summarize bookings and income from different time ranges.
One of the reports is the summary of bookings and income from different time ranges. It is reached by the navigation panel Reports->Summary. The page shows the table which includes the following parts: information about bookings of a current month, of last month and of current year. An example is shown in Figure 22.

> Main summary of bookings

Bookings of current month			
Amount of bookings:	5	Income:	€250
Bookings of last month			
Amount of bookings:	0	Income:	€0
Bookings of current year			
Amount of bookings:	5	Income:	€250

Figure 22. Report of summary of bookings

9.5 Tools for the system administrator

The system administrator is a user with a higher functionality level than the regular user. This information system grants privileges for system administrators to create and manage users. System administrators have the additional section in the navigation panel, called Admin settings, which includes links to create a new user and manage them. Process of creating a new user was explained in Chapter 9.1, and users' management page is opened by using navigation panel, Admin settings->Manage users.

The user management page displays a table with the list of registered users, their personal information and properties' information they are related to. In

the last field of each row there are two buttons with the functionalities of editing and deleting. The example is displayed in Figure 23. The button for editing directs the user to the same page as was explained in Chapter 9.3 and an example of editing is shown in Appendix 4. Delete button opens a confirmation page including the selected record. The example is shown in Appendix 5.

Figure 23. List of users

Moreover, above the table there is a block of fields are for searching a user. The main information of the user and booking can be filtered to find the required record of a user. There can be any number of search fields filled in, for example, only one or all of them.

In conclusion, this whole chapter explained how the information system of accommodation service management works. Moreover, for someone who starts using this system, it should give the user an easy way to manage bookings and save a lot of time. Other advantage of the system is that it's a web-based application, it is portable and can be accessed from anywhere and anytime. Users can manage bookings not only using personal computers or laptops, but also other mobile devices.

10 CLIENT'S INFORMATION SYSTEM

As it was planned in the project, the system needs to have a second information system for clients. The purpose of this information system is to

have the search engine of rooms registered in the database and make a booking for the required room. The system should let the client to find a suitable room in as fast and comfortable way as possible. Therefore, this chapter introduces to the information system for accommodation service searching, what advantages it has, and how it is used.

This information system consists of the following pages: home, room searching, room's information, room reservation and the booking's information check. Information is gathered and stored in the same database as the management system uses.

10.1 Explaining the information system parts

The start of the system is the home page. An example of home page is shown in Appendix 6. Therefore, let's go throughout the parts of the page. At the top of the page is navigation panel which consists of these links: Home, Rooms and Check your booking. The panel is shown in Figure 24. There's a Home link to main page, Rooms to show all the rooms and Check for the client to check his booking's information. On the right of the panel, there's a search field to search for the entered information in any stored information about rooms.
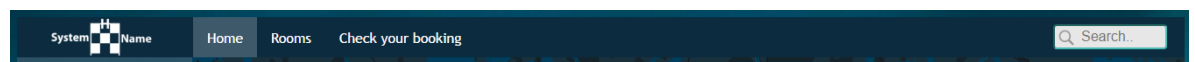
Figure 24. Navigation panel

Below the navigation panel, there is a tool to see rooms' places on the map, for example, to see every property with accommodation services in Mikkeli city which are registered in the database. This content has two blocks: the block of choosing a place, called Map navigator, and the block with the map. An example is shown in Figure 25.
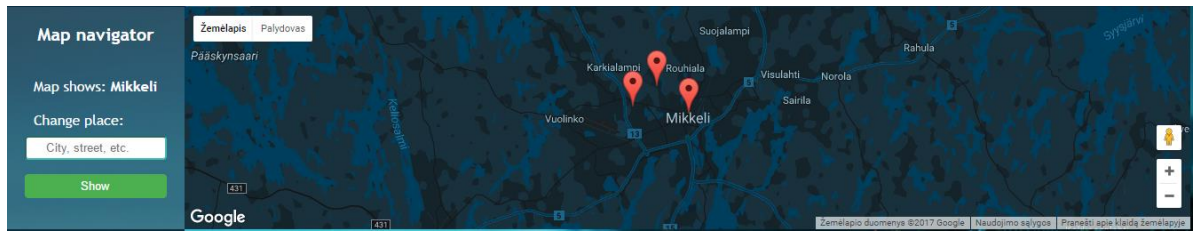
Figure 25. The block of the map

In the left block users can enter a city or address to show on the map. The map shows properties in red marks and when the mouse is placed over the mark, it shows the name of the property and the price. If it is clicked by the mouse, the system directs the user to that room's information page.

The map is created by using Google maps and their official code with some edits. It is added in this code that it would show more than one marker, would center to the location by entering an address from Map navigator, convert address to coordinates, and most importantly to mark places from the database. This tool is very useful to find a room with a suitable price in the specified location.

Below the Map navigator, there is another block – Room search. It contains the required fields to find a suitable room: arrival date, leaving date, city, number of beds and price range (shown in Appendix 7). It doesn't require to fill in all the fields. By pressing the Search button, the system filters the rooms' information and shows the records which have similarities to those fields. The results are shown in the Rooms page.

On the right, after the Rooms search panel follows the block of content. This block includes information or text fields to fill in depending on the purpose of the page. On the Home page it is called Available rooms for today. There are rooms listed which do not have bookings between today and plus one day. The system takes bookings of the rooms and checks, if the booking's date range does not matter the range of searching date. It is filtered by the following query where room_id, check_in_date and check_out_date are variables from the database, and $room_id, $arrival, $leaving are variables entered by the user to search for:

```
SELECT * FROM bookings WHERE room_id='$room_id' AND
((check_in_date <= '$arrival' AND check_out_date >= '$leaving') OR
(check_in_date >= '$arrival' AND check_in_date < '$leaving')  OR
(check_out_date > '$arrival' AND check_out_date <= '$leaving'));
```

Then all rooms which correspond to the query are listed in square boxes in the content area. An example is displayed in Appendix 8. Each box includes first photo of a room, name, number of beds and the price for a night. An example of the room's box is shown in Figure 26.

Figure 26. Box of the room

Also each box contains a button to check for more information about the room. The button directs the user to the room's information page. This page shows detailed information about the room: name, all pictures, description, property name, number of beds, price, a table of the room availability and list of services. The example of this page is displayed in Appendix 9. The table of the room availability works with the same principle as was shown in the end of Chapter 9.1. But here it doesn't show the names of the clients, only shows if a room is available on the listed dates or not. Moreover, there are lists of services below this table. This part includes two tables of the included services and additional services. However, to book a selected room, on the top-right corner of the content, there is a button called Book this room! which opens a page to start filling in the booking fields.

The page to reserve a room includes these fields to fill in: arrival date, leaving date, first name, last name, birth date, email, phone number, additional services. All the fields are compulsory, except additional services. The page to reserve the room is shown in Appendix 10.

When adding a new reservation, the system also sends emails to the client and the property administrator. Emails consist of the most important information about the booking. It is useful to easily check the needed information, but other reason of sending emails is that the property administrator can follow bookings by not being at the system all the time. The example of email for the client is shown in Figure 27 and email for the property administrator is in Appendix 11.

You have made a new booking in Johns house

From	FinalHotel
To	Adminas
Date	Today 13:19
Priority	Normal

The client has made a new booking!

Property name: Johns house
Property address: Mikkeli, Savilahdenkatu 5
Reservated room: Room No. 04
Arrival date: 2017-04-28
Leaving date: 2017-04-30

Client's first name: Samuel
Client's last name: Jack
Client's phone number: 358000000017

Booking's ID: 389
Booking's password: Iw9ZtLhR

Total cost for the room: 156
Total cost for the additional services: No service ordered
Total cost: 156

Figure 27. Email for a client

After reserving a room, the system shows the detailed information of the booking. An example is shown in Figure 28. It is almost the same as was shown for the worker's information system in Chapter 9.1, but this system's table doesn't have functions on the top and includes the password for the

booking. The password is required when a client wants to check this table again later.

Figure 28. Information about the booking

To check the reserved room's information again, the navigation panel has a link called Check the booking. It opens a page to enter the booking's ID and password given in the booking's information table. The content of the page is shown in Figure 29. The system checks if entered data is correct and then directs the client to booking's information table.

Figure 29. Checking the booking form

To sum up, the purpose of the information system for accommodation service searching is to give facilities for clients to find a suitable room and reserve it online. As the guide above explained, it is created to be as simple and as quickly usable as possible. The system is free of charge and doesn't require any logging in, so it is reachable for everyone and doesn't take too much time for searching and reserving a room.

11 CONCLUSION

Every company has to gather some specific data of its business. And most of the times it is not enough to write the information down in a notebook. Nowadays information technologies make business life simpler and more productive by implementing databases and information systems. Therefore, this study about the implementation principles and requirements of databases and information systems was made. This knowledge improved planning capabilities of information system. Fortunately, the database and information system's structure were designed successfully. Then it was decided to use the following web development tools: HTML, PHP, CSS, JavaScript languages and MySQL database system. The project required deeper knowledge of these tools' syntax and usage, so a lot of research and testing were done to handle the code.

In the practical part the information system was implemented. The system covers the business area of accommodation services. The database gathers information about properties (hotels, entrepreneurs, etc.), rooms, bookings and clients. The information system is divided into two parts: a system for property administrators and the system for clients. They both use the same database.

The main part of the information system which is going to produce income is the system for property administrators. Properties can buy this information system to have the ability to manage their business. The system is implemented so that properties can successfully manage their rooms, bookings and clients. It has the functionality to add, edit and delete information, and also to view specific data or reports.

The second part of the information system is for clients. It was also implemented successfully. The usage of this system is at no cost and accessible for everyone without any logging in. The system provides online booking services. All the rooms registered in the database are shown as advertisements. Clients can search for a suitable room, check its availability and reserve it.

When looking at the business side, the purpose of implementation for the real working environment is for properties of small businesses, such as small hotels or entrepreneurs, to have an ability to automate their administration. The system doesn't require a lot of expenses, and therefore, it can be sold at a suitable price for everyone. This should motivate properties' administrators to join this community to manage their business simpler and advertise it on this system's online booking website. At first, the information system will only be used in one country, but later, if the business will be successful, it will expand.

In conclusion, every goal of the project was reached. Of course, the topic of the project is quite extensive and there could be a lot more ideas to improve it. But the implementation of the project covered all main requirements for implementing a real working environment. Therefore, it is ready for both starting a business and making more improvements.

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Login page
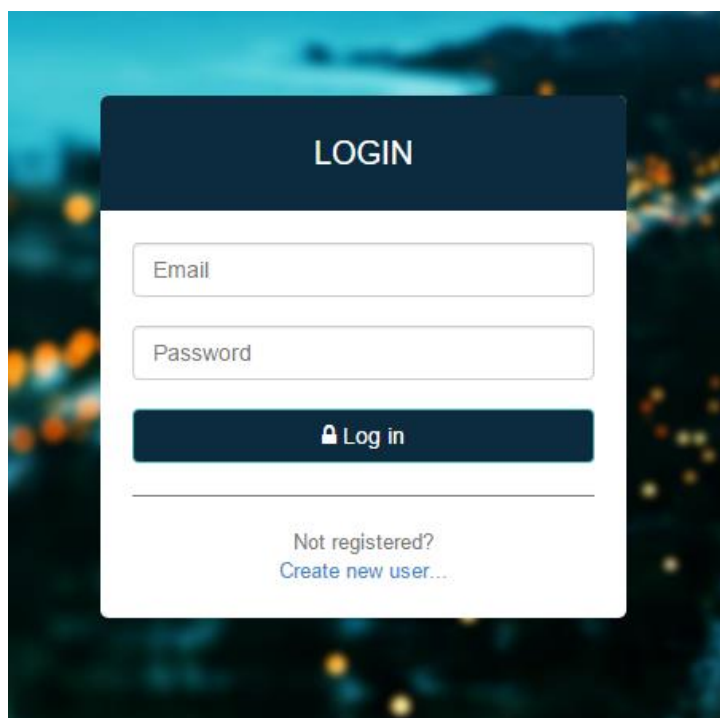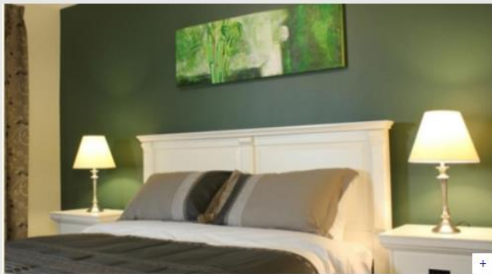
Choosing number of nights
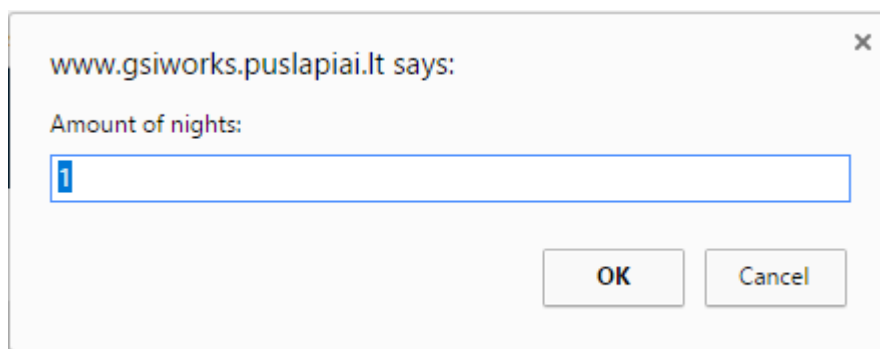
The information about the room in the management system

> Detailed information about room

Room No. 03 (Room at Johns house)

Amount of beds: 4

Price: 70 Eur

Book this room!

Visit our Hotel which has modern rooms, beautiful environment. Have a wonderful rest and enjoy additional services, such as sauna and swimming pool! Hotel is located in the main street of the city.

Room availability:

| Show since? | To? | Show |

04-22	04-23	04-24	04-25	04-26	04-27	04-28	04-29	04-30	05-01	05-02	05-03	05-04	05-05	05-06	05-07	05-08	05-09	05-10	05-11
		Jane Beck												Brigita Brown					

List of services:

Included services:
Internet connection
Place in the parking lot

Additional services:	
Breakfast	Price: 5
Bed clothing	Price: 5

Editing a user

> Edit user information

> Edit following fields to change profile information:

First name	Sam
Last name	Cambridger
Personal ID	2147483647
Phone number	358000000007
Email	sam@testmail.fi

Save changes

Deleting a user

First name	Last name	Personal ID	Email	Phone number	User privileges	Property name
> Do you really want to delete this room?						
Sam	Cambridger	2147483647	sam@testmail.fi	358000000007	Worker	BigStar Hotel
Confirm deletion						

The home page of the system for clients

The panel of Room search

The block of room boxes

The information about the room

About room

Double bedroom

Visit our Hotel which has modern rooms, beautiful environment. Have a wonderful rest and enjoy additional services, such as sauna and swimming pool! Hotel is located in the main street of the city.

Property: Johns house

Amount of beds:2

Price: 35 Eur

Book this room!

Room availability:

Show since? | To? | Show

04-21	04-22	04-23	04-24	04-25	04-26	04-27	04-28	04-29	04-30	05-01	05-02	05-03	05-04	05-05
Available	Booked	Available	Available	Available	Available	Available	Booked	Available	Available	Available	Available	Available	Available	Available

List of services:

Included services:		Additional services:	
Internet connection		Swimming pool	Price: 15
Place in the parking lot		Sauna	Price: 10
		Additional bed for a child	Price: 10

The room reservation form

New reservation

Arrival date:

Birth date

Leaving date:

Email:

First name:

Phone No.:

Last name:

Choose additional services (not compulsory):

Book this room now!

The email for a property administrator

You have a new booking from Samuel Jack

From	FinalHotel
To	Adminas
Date	Today 13:19
Priority	Normal

The client has made a new booking!

Reservated room: Room No. 04
Arrival date: 2017-04-28
Leaving date: 2017-04-30

Client's first name: Samuel
Client's last name: Jack
Client's phone number: 358000000017
Client's email: test@gsiworks.puslapiai.lt

Total cost for the room: 156
Total cost for the additional services: No service ordered
Total cost: 156