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Hotel Management System Requirements Specification

Version 1.0

April 16, 2020

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1. **Executive Summary**

1.1 Project Overview

As time moves on so does technology develops. Our idea was to create a decent system software for a specific hotel. For different hotels, restaurants, motels, resorts etc finding a good and suitable software is very important and gives the customers the feedback that they need and want. Without it they would waste more time, and time is money.

These problems would keep away from customers and we are trying not to. The hotel does not have a proper database, accounts for cleaner, inventory and receptionist. Admin has also a very important role in this management system software which is not very used by the owner of the hotel also.

We looked at how we could come up with a solution about the problem "Zum Ziel" hotel is facing. And what we will try to do is to create a software which will be very simple to use, will help to upgrade the efficiency and progress of hotel. The aim of this project is to end up with a proper functional system software that will be handful to the hotel and its customers.

1.2 Purpose and Scope of this Specification

The purpose of this entire project is to provide quality and standard services. This software application will focus on automatic functions such as pre-booking, booking functions, managing inventories in order for a real-time inventory to have a control of the rates across the channels and easy to update control. Also it is important for the admin page to be able to control all of the other pages such as cleaner, guests, receptionist and inventory.

If the admin page is functional and coordinates all the other workers, this will be a benefit to the customers. This software is going to come in help for the hotel by being more coordinated, specific and precise. We are gathering data for the hotel by tracking employees, customers, booking and organize it in the best way possible.

Apart from all these functionalities our Software will also ensure that the front office manager will not fumble with his day to day operations, his operations will be automated to the maximum so that there will be no possibility for human errors.

This system software will monitor everything from the moment that the booking is being done and it will be occupied to the system. We have seen that nowadays companies are being oriented to the system software for their businesses, so this is a better way to lower costs and to grow the productivity of the business.

2. Product/Service Description

Hotel management system is a desktop application project which will come in hand to the company providing the best service by surveying the employees work and also customer decisions. It saves effort and is more cost-effective.

It is important to cover the controlling, planning, activities that are being done in the company. In order to be more flexible, faster and better this system software will help "Zum Ziel" to ease its problems. Records of all the employees and their salary will be kept in a way to be correct with the employee and government.

2.1 Product Context

Hotel Management System software is a technology that allows hotel operators and owners to streamline their administrative tasks while also increasing their bookings in both the short-and long-term. Also it is very important for the hotel management system to enhance customer experience with its brand.

2.2 User Characteristics

There will be different users for different needs such as admin which will survey the most important part and is accountable for employees, rooms, statistics and other users such as guest, receptionist and cleaner. The log in page will be a page which every user can access it and it will lead to their personal pages.

1. Owner (admin) page

- Admin can log in to the system.
- Admin is responsible for different pages and users.
- Overall board – includes orders, new bookings, rate, customer comments, total revenue, notice me box and special customers.
- Employees – include add new employee box, employ data and edit. When adding the employee it will show first name, last name, email, password, birthday number etc
- Rooms – include day of reservation, day of leaving, requirements and cleaning time.
- Statistics – include rooms, nationalities, satisfaction, total revenue and best employee.
- More – includes how rooms are provided such as single, double etc. Employee and reservation box are included.
- Admin can create, remove, update employees
- Admin manages all the the other users.
- Admin can create or delete his employee accounts.

2. Guest Page

- Guest can log in to the system.
- Guest can sign up by writing their username and passwords.
- Can access their personal page.
- They can book by themselves online.

3. Cleaner

- Cleaner can log in to the system.
- Cleaner can sing in by writing their username and passwords.
- He/she should fill the rooms that have to be cleaned.
- Cleaner should put in if there is any damaging object, missing object, consumed drinks etc

4. Receptionist

- Receptionist can log in to the system.
- He deals with guest's check-in, check-out and answers phone calls.
- Is able to make and view the reservations which guests request.
- Receptionist has access to inventory and balance sheets.
- Is able to view rooms to be cleaned and can also print the receipt.

5. Log in

- Log in is a common page where each member can log in such as owner, guest, cleaner, receptionist.
- Log in page has an option to write name and username, password. In case if someone forgets his password he/she has the right to retype it.

2.3 Assumptions

We assume on this application:

1. All users have basic knowledge in English language.
2. All users have basic knowledge in computer and Smartphone usage.
3. It is assumed that the Hotel provides Credit Card payments.
4. Every user has access to a computer.
5. Hotel has internet connection all the time.
6. Every user like admin, receptionist, and cleaner will be trained to use this application before starting to use it.
7. The application will be secure and the data will be confidential.
8. It is assumed that the computer devices that will use the application will have Windows or Linux operating system

2.4 Constraints

- All users have to be logged in, in order to use the product and to access the information
- The users of the application should have basic knowledge of the application
- Phone memory of the users is another problem, prices and quality of android phones varies and so the memory, most of the workers are likely to have cheaper phones and that can be a problem for the application usage
- All users have to be logged in, in order to use the product and to access the information

2.5 Dependencies

Dependencies needed for the application:

- As it is a web based application it is always dependent on internet connection.
- A connection is required to send commands and receive answers, usually in the form of a result set.
- The application needs to run in a computer.
- Project cannot start without the acceptance of the admin.

3. Requirements

The following definitions are intended as a guideline to prioritize requirements

• Priority 1 – The requirement is a "must have" as outlined by policy/law

• Priority 2 – The requirement is needed for improved processing, and the fulfillment of the requirement will create immediate benefits

• Priority 3 – The requirement is a "nice to have" that may include new functionality may be helpful to phrase the requirement in terms of its priority, e.g.
"The value of the employee status sent to DIS **must be** either A or I" or "It **would be nice** if the application warned the user that the expiration date was 3 business days away". Another approach would be to group requirements by priority category.

3.1 Functional Requirements

REQ	REQUIREMENTS	RECORDS	PRIORITY	DATE	RESPONSIBLE
1	Views for each account types	There will be 4 account types:Admin,client,cleaner,receptionist ,each one with its own view.	1	17.4.2020	Sonja Robo
2	Add, remove rooms	Thats a job admin can only do	1	17.4.2020	Rinika Alliu
3	The system will provide to admin chance to define room prices	It allows admin to take care of rates according to the season and its peaks.	1	17.4.2020	Rinika Alliu
4	Login constraint	Of course in order for users to access the data should be logged in	1	20.4.2020	Renato Murati
5	The system will make possible to view booked rooms	Receptionist and administrator can check if rooms are booked or not	1	20.4.2020	Ibrahim Kulli
6	Rooms available to customers	Receptionist and client can see if the room is available	1	21.4.2020	Erjon Spahija
7	View if rooms available	Receptionist can do that, see if rooms are available or not	1	21.4.2020	Rinika Alliu
8	Manage inventory	Administrator can manage the inventory	1	21.4.2020	Sonja Robo
9	Print invoices	Administrator can print invoices ,daily, monthly, yearly .	2	21.4.2020	Sonja Robo
10	Receptionist will book rooms	People may book a room in different ways ,may come physicaly in hotel,or by phone.	2	21.4.2020	Rinika Alliu
11	Reserve some dates for specific rooms	Rooms wich are being fixed canot be booked	1	21.4.2020	Ibrahim Kulli

12	Get statistics	Administrator can say who the top employee is of course based on statistics	3	21.4.2020	Rinika Alliu
13	Email notification	After the client books a room he will be notified with an email wich will tell him the booking was done	3	21.4.2020	Renato Murati
14	Admin will be able to add/remove employee	If someone will be fired or someone will be hired.	2	21.4.2020	Sonja Robo
15	Admin will be able to leave notes to employees	If admin has something to tell o the staff members then he can send messages	2	22.4.2020	Sonja Robo
16	Cleaner should have the info if the rooms are uncleaned	Cleaner can see in its own page which room is unclean	3	22.4.2020	Rinika Alliu
17	The system will include a web app for all types of users	Every user will enter to a specific page wich fits his interests		22.4.2020	Ibrahim Kulli
18	Client can write comments	All people are different so they have different wishes and if something is not listed in oue services they can leave comments	3	22.4.2020	Rinika Alliu
19	VAT will be calculated according to room price	Albanian legislation says about hotels that 6% of room price goes for VAT.so this will be calculated in the printed receipt.	2	224.2020	Erjon Spahija
20	Admin can add product to the inventory	In order to make easier for hotels product the admin can add products to the inventory	2	22.4.2020	Sonja Robo
21	Admin can control or even assign tasks	Admin can control different issues related to staff or hotel	3	22.4.2020	Sonja Robo
22	Admin can modify rooms wich are booked	People have different needs so admin can modify somthind they dont like or pospone their leaving	1	23.4 .2020	Rinika Alliu
23	Client can edit information	Clients can have acces to their personal information and be able to change something	3	23.4.2020	Ibrahim Kulli

24	For each day should be specified which rooms will be cleaned by whom	So name of worker and number of roms and date	2	23.4.2020	Renato Murati
25	Rooms not cleaned	Cleaner will look rooms which need to be cleaned	3	23.4.2020	Rinika Alliu
26	Status of room	Cleaner can see if room is cleaned	2	23.4.2020	Sonja Robo
27	Have no only one room	Customer have the chance to book more than one room	2	23.4.2020	Sonja Robo
28	Checking rates	Customer can check rates and also reviews of hotel	2	24.4.2020	Rinika Alliu

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29	Book room	Customer can book room after being logged in system	1	24.4.2020	Ibrahim Kulli

3.2.1.1 Usability Requirements

- The main purpose of creating this web app is to be simple and each user feel comfortable when using it.
- The web app will be used by different people, clients also staff so each will have specific type of interface as their jobs or roles.
- So the main commands for each interface will be at the first page. If any problems happen or some new information is needed to be add or even deleted the persons can easily do it because the possibility to make changes will be there.
- Then of course all the management of hotel will be viewed by the admin and he will be informed for everything.

3.2.1.3 Learnability

- Our product will be easily understood, even it will be very easy to use the commands they will kind and provide extra information how to use it.
- If something is writeable is kind of boring but we will use some colors and graphics and this will make it more easy and attractable.
- About the language it will be in English because the hotel is located at Germany and has near also Swiss and France, and people who go there are also from very different places.

3.2.1.4 Accessibility

- The system will be able to handle multiple actions at same time.
- We will make sure that the errors will be almost 0 when that happens.
- The system as many ones will be executable every day 24 hours.
- Back up exists
- Information will be saved

3.2.1.5 Performance

- As I mentioned before there will be multiple users so our web application will use
- Multi-tier architecture.
- There will be user client, middle tier, and application server.
- The performance of web application will be based on :
- Speed of internet connection so it even in a slow one be good
- Responsive time so when someone search results, these should be inhabit in tolerable time.

3.2.1.6 Capacity

- The server where the web is stored needs at least 150MB of size so even when multiple users there will be no problems as example are slowing down of system etc.
- Even when internet connection is but very good there are possibilities to open and perform actions in system.

3.2.2 Organizational Requirements

3.2.2.1 Availability

- Web application will be able every day 24 hours.
- Web application can be used by everyone wherever they are.
- Web app will have secure web browsers.
- Web app also will have a high availability in order to get the maximum percentage of time the system is functioning.

3.2.2.2 Latency

We want that software be used when internet connection is strong so the website will be loaded in less than 1.5 sec

3.2.2.3 Monitoring

The software will be check out many times and even when is something wrong the administrator will be able to know what is going on and everything will be saved in specific files .

3.2.2.4 Maintenance

With time everything changes new things come out so the system will be build in that way that if we want to add more things we can do it. The administrator has the job to maintain the system and if something is not ok then it will be figured it out.

3.2.2.5 Operations

- Admin of course will have access to all the software; he can see everything what is going on in the hotel who and what comes in and out.
- Customers can book online
- Customers can leave a comment
- Cleaner can be logged in and see which room is unclean and clean it
- Receptionist can be logged in and then deal with customers and rooms.

3.2.3 External Requirements

3.2.3.1 System Interface

- Not everyone will be able to access the system. To keep safe the information the staff and admin will have a username and also an encrypted password.
- The people which have to deal with customers will have access on personal info systems and reservation stuff.
- And of course the admin will be the only one who will access all systems and subsystems.
- Customer Representatives will have access on Reservation and Personal Information subsystems.
- Receptionist will have access on the Reservation data of all customers

3.2.3.1.1 Network and Hardware Interfaces

- About network our system can be run by Firefox, Google Chrome, internet explorer and Safari.
- To have advantage customers can use the newest versions to have more cool stuff in their interfaces.
- We will try to design and to make it easy and cool.
- Symfony for the back-end and React.js for the front-end.

3.2.3.2 Security

- Make possible to detect some people who are not authorized to get into the system
- Make possible that also unauthorized programs to be detected
- Make possible that information which is personal to be protected
- Make possible that applications and interfaces be not attackable
- Make possible that someone to not interfere in staff informations.
- Make possible that communications and conversations be private
- Make possible that customers and users be recognized
- Make possible that every member of staff uses its own page.

3.2.3.2.1 Protection

After we searched we decided to use Symfony. It provides a complete security system for web development.
It uses HTTP basic authentication
It provides ways to authorize authenticated users based on their roles.
It allows the developers to implement their own authentication strategies.
Symphony has some components which contains subcomponents and can be used separately to guarantee a secure application.
Symphony / security- Http: It integrates the core sub-component with the HTTP protocol to handle HTTP requests and responses.
Symphony / security-Csrf: It makes possible protection against Cross-site Request Forgery attack.
Symphony / security-core: It makes possible that all the common security features, from authentication to authorization and from encoding passwords to loading users.

3.2.3.2.2 Authorization and Authentication:

For Authorization and Authentication is needed Symfony. What it does?
It uses the Authentication providers by complementary Authentication Provider Interface. It has also a method supports() by wich AuthenticationProviderManager decides if it supports the given token or not. If it is supported then it will call the provider method authenticate (). This method returns an authenticated token or throw an AuthenticationException.
The provider offers some authentications and to have a successful Authorization Symfony uses the Authorization Checker and the access listener.
The Password Encoder Factory, Authenticating Users by their Username and Password, Using Password Encoders ,Creating a custom Password Encoder.

3.2.3.3 *Data Management*

What does Data Management do? So as definition it is a way of managing knowledge and information and makes it accessible for specific purposes. And here data management include data which are effective of course and then include specific policies foe the business.
The information which enters in the system needs to be adjusted with needs of customers.

3.2.8 *Standards Compliance*

We have also added the receipt for customers in order for them to know the prices. In the receipt customers can see TVSH, which is 7%. It will be printed out and given to them.

3.2.10 Other Non-Functional Requirements

Please provide all necessary non-functional requirements, similar to the requirements explained in the lesson slides or in the textbook.

3.2.3.5 Domain Requirements

Only admin can create, update and delete employees.

If sign up option is clicked in the web application the user will be of type "Guest" of the hotel.

Rooms to be cleaned are automatically assigned to the worker by the system, if the worker is absent in a specific day, its work will be distributed to its coworkers.

The user interface will be standard for all types of users.

System should take into account the exact time of check-out of the leaving guest and check-in of the new guest in order to avoid collisions between bookings.

The system should also take into account that there will be different currencies for online payments.