MedTech
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Software Requirements Specification (SRS)

Hospital Management: DocBook

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1. Introduction

This section gives a scope description and overview of everything included in this SRS document. Also, the purpose for this document is described and a list of abbreviations and definitions is provided.

1.1 Purpose:

The purpose of this document is to give a detailed description of the requirements for the "hospital/doctor online booking" website. It will illustrate the purpose and complete declaration for the development of system. It will also explain system constraints, interface and interactions with other external applications. This document is primarily intended to be proposed to a customer for its approval and a reference for developing the first version of the system for the development team.

1.2 Scope:

The "hospital/doctor online booking" is a website that helps people find the nearest doctors based on the user's choice of hospital and the doctor's specialty. The website should be accessible from browsers on any computer.
Our team will provide the hospitals information using the web-portal. This information will act as the bases for the search results displayed to the user. Our team also uses the web-portal in order to administer the system and keep the information accurate. The administrator can, for instance, verify doctors' information and manage user information.
Furthermore, the website needs Internet connection to fetch and display results. All system information is maintained in a database, which is located on a web-server. By using the website, users can view desired hospitals on a list and be navigated to them. The application also has the capability of representing detailed information about the hospitals.

1.3 Definitions, acronyms and abbreviations:

Term	Definition
User	Someone who interacts with the mobile phone application
Admin	System administrator who is given specific permission for managing and controlling the system
Web-Portal	A web application which present special facilities
/	or

Table 1: Definition of terms

1.4 References (links):

http://www.cse.chalmers.se/~feldt/courses/reqeng/examples/srs_example_2010_
group2.pdf?fbclid=IwAR3O2Sfvi3RtcsHfQQKvAs8s5c6c03smQ0MlOCMgzNPpqN_tY
YxQjORdQ-A
http://moodle.medtech.tn/pluginfile.php/27259/mod_resource/content/0/IEEE83
0-SRS.pdf
http://home.agh.edu.pl/~jsw/io/IEEE830.pdf

1.5 Overview:

The remainder of this document includes three chapters and appendixes. The second one provides an overview of the system functionality and system interaction with other systems. Further, the chapter also mentions the system constraints and assumptions about the product. The third chapter provides the requirements specification in detailed terms and a description of the different system interfaces. Different specification techniques are used in order to specify the requirements more precisely for different audiences.

2. Overall description

2.1 Product perspective:

The website will provide the user with the hospitals and doctors' location, the functionality provided by the user will be embedded into the website for the user to be able to use the functions in the application in a seamlessly manner. Since this is a data-centric product it will need somewhere to store the data. For that, a database will be used. The website application will only use the database to get data while it will also add and modify data. All the database communication will go over the Internet.

2.2 Product functions:

With the website, the users will be able to search for doctors. The result will be based on the criteria the user inputs. There are several search criteria and it will be possible for the administrator of the system to manage the options for those criteria that have that. The result of each search will be viewed in a list view. The list views will show a small part of the hospitals' information and doctors' availability, so the user can choose.

2.3 User characteristics:

There are two types of users that interact with the system: patients and admins. The website application users can only use the website to find a doctor. This means that the user must be able to search for hospitals, choose a doctor from that search and then choose an appointment and confirm. In order for the users to get a relevant search result there are multiple criteria the users can specify, and all results matches all of those. The administrators also only interact with the web portal. They are managing the overall system so there is no incorrect information within it. The administrator can manage the information for each hospital and doctors.

2.4 Constraints:

The website application is made using MongoDB, Node.js, Angular 6. The interface should be user friendly and must be in English. Also, there may be a difference between what navigation features each of them provides. The Internet connection is also a constraint for the application. Since the website fetches data from the database over the Internet, it is crucial that there is an Internet connection for the website to function. The website application will be constrained by the capacity of the database which depends on capacity of host servers. Users and doctor's privacy are also constraints where their data must be protected and confidential.

3. Specific requirements

This section contains all the functional and quality requirements of the system. It gives a detailed description of the system and all its features.

3.1 External interface Requirements:

This section provides a detailed description of all inputs into and outputs from the system. It also gives a description of the software and communication interfaces and provides basic prototypes of the user interface.

3.1.1 User interface:

At first-time the user of the website should see the medical specialties displayed on the front page in English (fig. 1).
After choosing the specialty needed the system will exhibit a list of hospitals and their address (fig. 2). Then a list of the doctors will be presented with their names, room number and level (fig. 3). Afterwards, the system will reveal a page with the days of doctor's availability which will be updated weekly (fig. 4).
Once the user selects the time suitable for him (fig. 5), he/she will get a page to fill in his information (name, phone number, email) (fig. 6), after filling the information needed, a printable receipt will be shown on the screen with this following information:
   - Receipt reference
   - Transaction date
   - Booking date
   - Doctor's name and specialty
   - Hospital information

Meanwhile the system will send to the user's email a link to cancel the appointment.
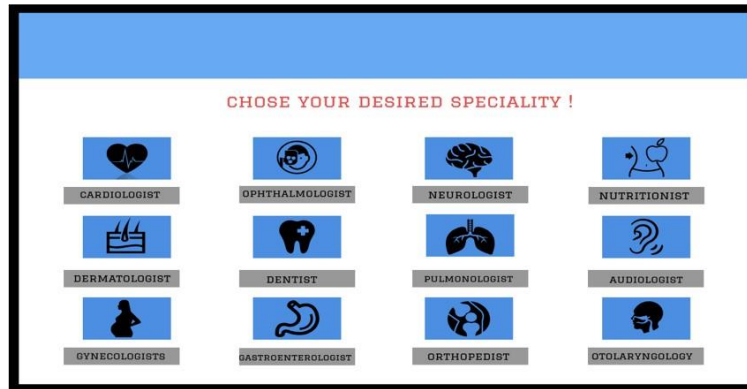
Figure 1: specialities display
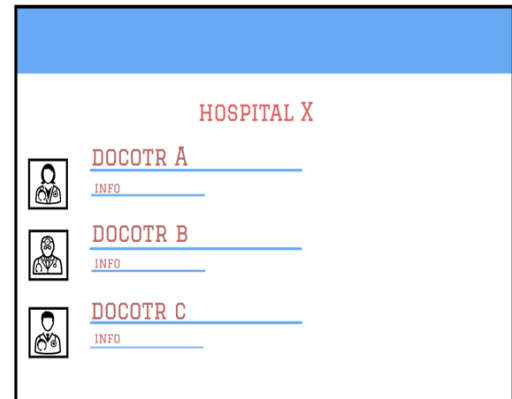

Figure 3: hospitals display
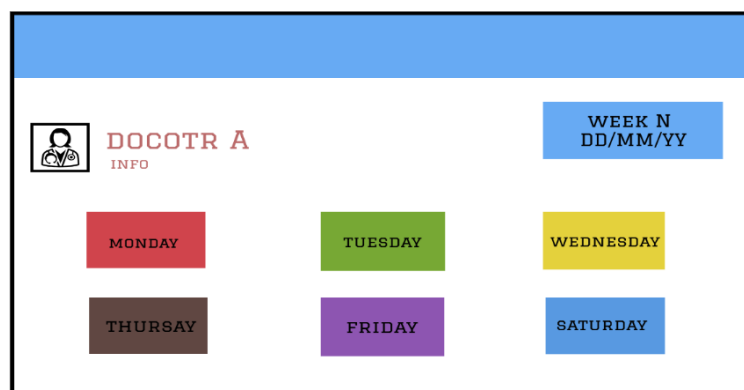

Figure 2: doctors display

Figure 4: working days

Figure 5: availability display

Figure 6: confirmation appointment

3.1.2 Software interface:

The communication between the database and the web portal consists of operation concerning both reading and modifying the data, while the communication between the database and the website consists of only reading operations.

3.1.3 Communication interface:

The communication between the different parts of the system is important since they depend on each other. However, in what way the communication is achieved is not important for the system and is therefore handled by the underlying operating systems for the web portal.

3.2 Functional requirements:

This section includes the requirements that specify all the fundamental actions of the software system.

TITLE: website access
A user should be able to access the website from any computer browser.

TITLE: update doctor's availability
When one of the doctors leave the hospital or change its working hours this should be updated in the system.

TITLE: specialty display
The specialties will fill the first page of the website and the user will have to scroll to see them all and each specialty is a button that will take the user to the next page.

TITLE: hospitals display
The hospitals will fill the second page of the website and will be presented as a link with the hospital information.

TITLE: doctors display
This page will be filled with the doctors of the specialty and hospital chose by the user. It will show the doctors name, floor and room.

TITLE: appointment day
When the user clicks on his/her preferred doctor he will be moved to the page that will show the working days of that doctor, and under each day the shift time of the doctor will be shown.

TITLE: appointment time
After choosing the suitable weekday, the next step is choosing the time which will be shown in the next page in a form of a list. In front of each available time there is booking button. The already booked dates will be shown in gray color and the user won't be able to click on them.

TITLE: confirm appointment
After choosing the fitting time, a formula with name, phone number and email will be shown to the user that he is required to fill.

TITLE: transaction receipt
When all the steps are done, the user will get a printable receipt that include the reference, date the appointment was taken and the date of the appointment plus the doctor's information.

TITLE: Cancellation

After the registration the user will get an email with a link in case, he wants to cancel his appointment.

TITLE: update after appointment/cancellation
When the user books/cancels an appointment, the time booked/cancelled should be updated on the system.

3.3 Nonfunctional requirements:

Performance

TITLE: Usage of the result in the list view
The results displayed in the list view should be user friendly and easy to understand. Selecting an element in the result list should only take one click.

TITLE: Usage of the information link
The information link should be prominent, and it should be evident that it is a usable link. Selecting the information link should only take one click

TITLE: System dependability
If the system loses the connection the user couldn't access the website.

Security

TITLE: privacy
The user's privacy is protected, that means the information are not available for other users or any third parties. (including the https)

TITLE: No information loss
When the website gets bugged or crushed the information of the users should not get lost and get saved.

Software quality

Reliability:

The system will show the right hospitals and doctors for the right specialty, the right doctors for the right hospitals and the right available times for the right doctors.

Availability:

TITLE: Internet Connection
The website should be connected to the internet so that the it could communicate with database.

Maintainability:

TITLE: Website extendibility
The website should be easy to extend. The code should be written in a way that it favors implementation of new functions.

TITLE: Website testability
Test environments should be built for the application to allow testing of the application's different functions.

Portability:

TITLE: Portability
The website should be portable with any computer browser.