Bogazici University

cmpe 321

Introduction to Database Systems

Implementation of Hospital Appointment System

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1 Introduction

This report is dedicated to explain the implementation of Hospital Appointment System. This project is implemented by using PHP, HTML5 and MySQL. The web server is set up by using Apache Web Server.

In the following section, the ER diagram of database will be presented. After that, the user interface of the program will be introduced by providing screenshots.

2 Database Design

The database consists of six entities whose ER diagram is shown in Figure 1. Whereas five database entities are using "ID" as primary key, "Appointments" entity is used three primary keys; namely, "date", "timeSlotID" and "doctorID" so that user cannot create appointment with the same doctor at the same time. Patients and Admins are stored in different tables. Branches is also stored in different tables so that user can see the branch's options while he/she is trying to create an appointment. In the PhpMyAdmin, two trigger functions is written so that when a doctor is removed from system, server will remove all the appointments belong to doctor. The other trigger function is written so that when branch is removed from system, doctor belong to this branch will be removed from the system. Beside that, two procedure is written so that administrators can list past and future appointments belong to specific branch or belong to all branches.

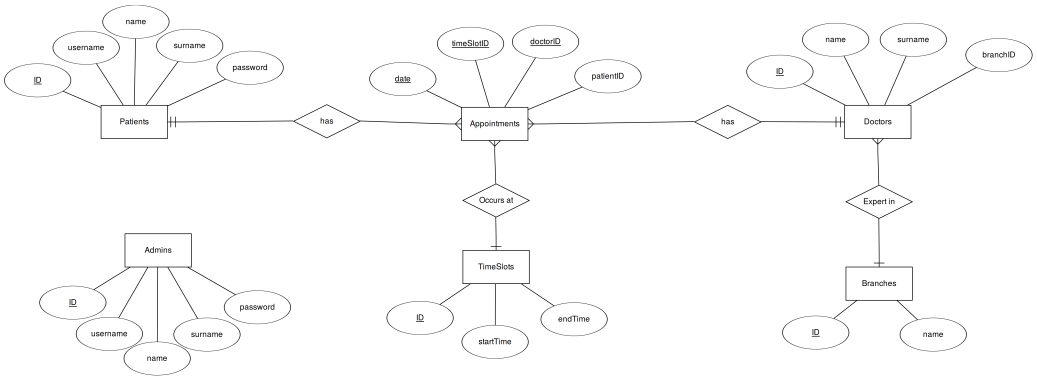

Figure 1: ER Diagram

3 User Interface Design

When user go to link "localhost/hw3/login.php", the login page will be displayed as shown in Figure 2.

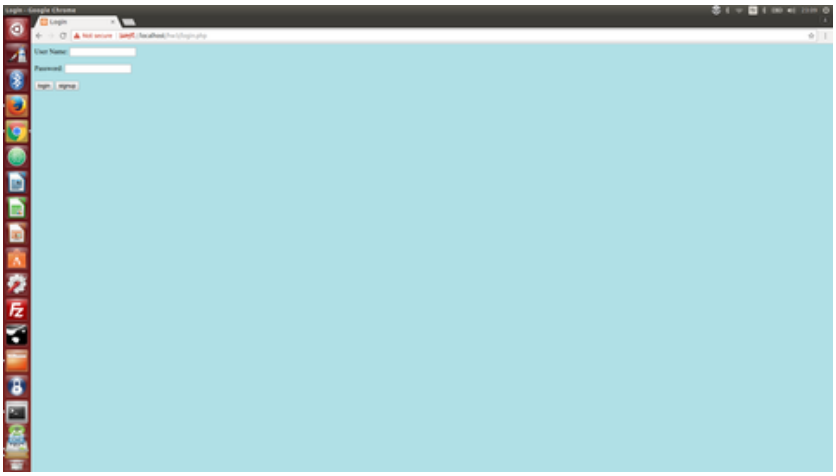

Figure 2: Login Page

In the login page, when a hacker would like to get all the user names and passwords by entering *" or ""="* characters to "username" and "password" field, she/he will faced with the page as shown in Figure 3. (SQL Injection)

Figure 3: Wrong Username or Password

As it is given in the description part of the homework, there are two types of users; namely patients and admins. If a patient is registered user, she/he needs to first be registered by clicking "Signup" button as shown in Figure 2. After that, the page as shown in Figure 4 will be displayed.

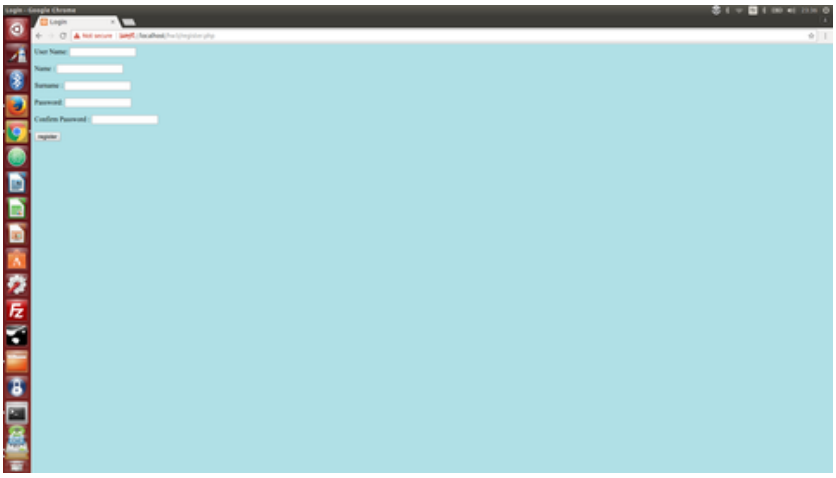

Figure 4: Signup Page

Patient must fill every information in order to be signed up. After filling every information, the only condition which user must obey is that password and its confirmation must be same. After registering, patient can login to system and she/he will be directed to homepage. As shown in Figure 5, user can see her/his appointments. Morever patient can create new appointment, delete appointment and edit the existing appointment.

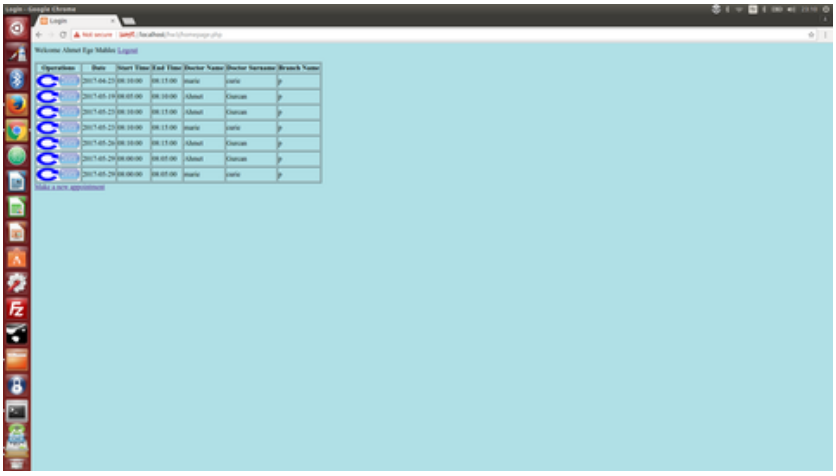

Figure 5: Patient Homepage Page

In order to edit an appointment, user should click the circular arrow to go to edit appointment page. When user click the delete icon, the appointment will be deleted directly. In case user tries to go to homepage without log in, the page as shown in Figure 6 will be displayed.

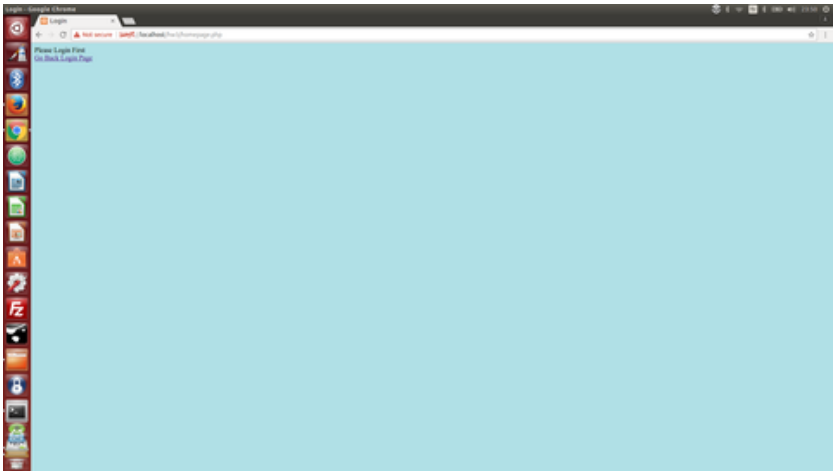

Figure 6: Home Page without Login

When patient tries to create an appointment, the page which is shown in 7 will be displayed.

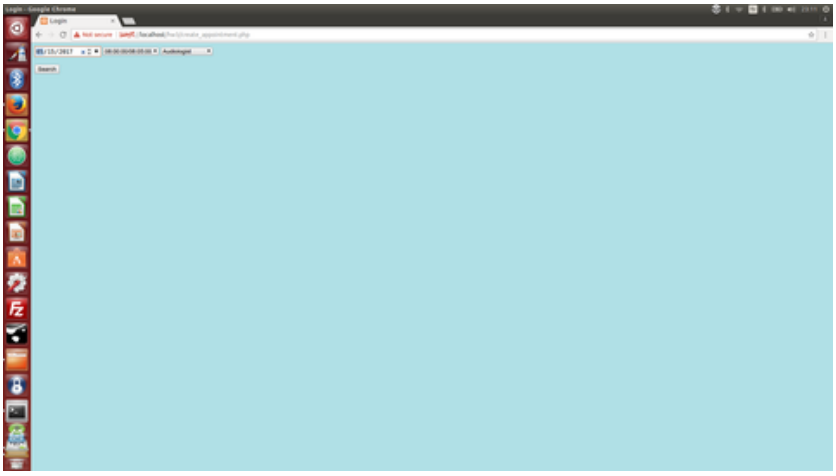

Figure 7: Make Reservation Page

After patient selects the "date", "time Slot" and branch, user should click to search button to retrieve available doctors as shown in Figure 8. After doctor is selected, user should click "Create" button in order to create new appointment.

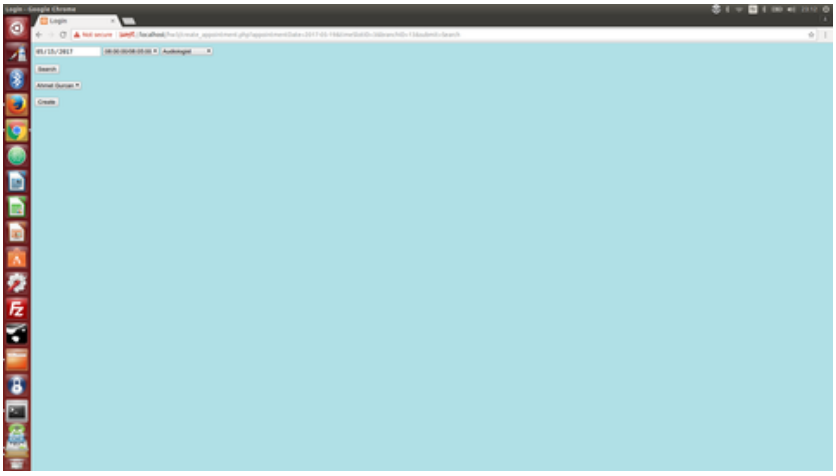

Figure 8: Make Reservation Page After Date, Time Slot and Branch Selection

When patient selects edit appointment icon, the same page for create appointment which is shown in Figure 7 will be displayed.

Beside patients, administrators can also be logged in to system. The home page for administrators is shown in Figure 9.

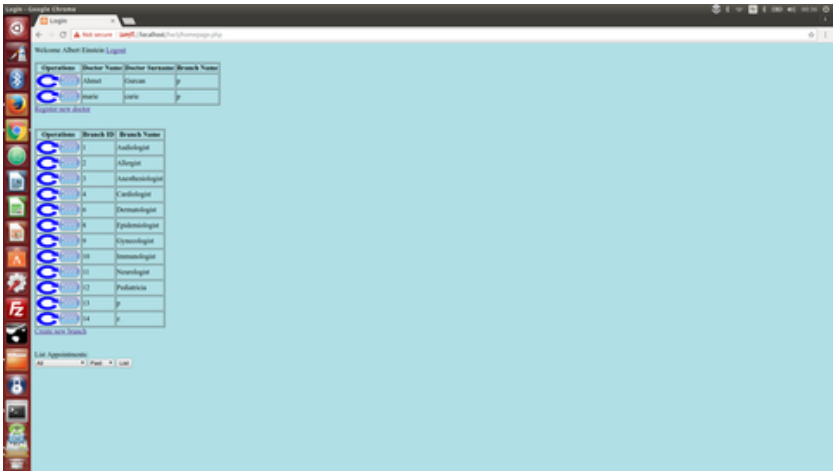

Figure 9: Administrators Home Page

Administrators can edit, delete and register doctor. When administrator clicks the "Register new doctor" link, the page as shown in Figure 10 will be displayed.

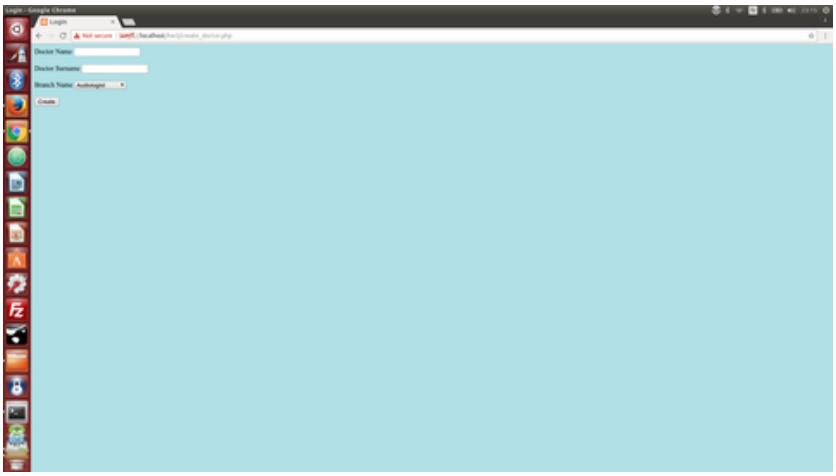

Figure 10: Register New Doctor

When administrator clicks the edit doctor icon, the page as shown in

Figure 11 will be displayed.

Figure 11: Update Doctor Information

When administrator clicks the delete doctor icon, the doctor will be removed directly.

Administrator can also create, edit and delete branch. When administrator clicks the "Create New Branch" link, the page as shown in Figure 12 will be displayed.

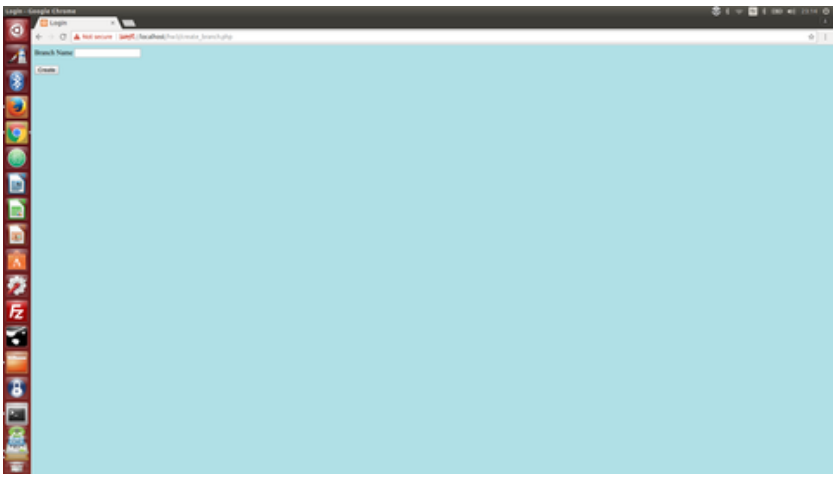

Figure 12: Create Branch

When administrator clicks the edit branch icon, the page as shown in Figure 13 will be displayed.

Figure 13: Update Branch Information

When administrator clicks the delete branch icon, the branch will be removed directly.

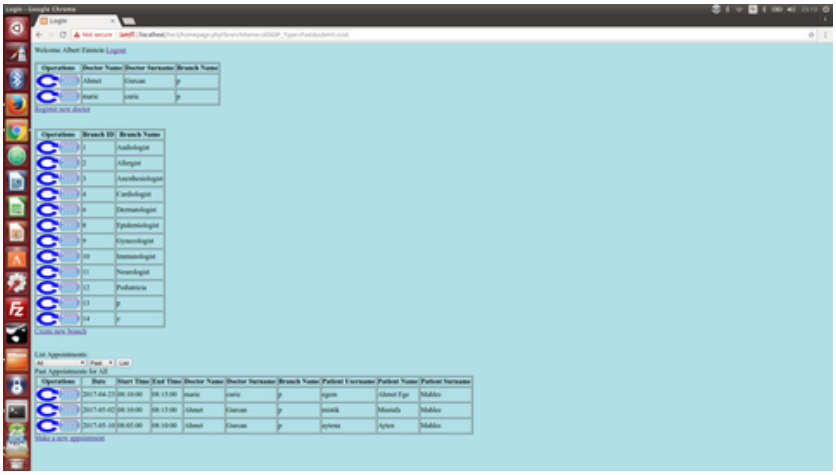

Figure 14: List Past All Appointments

Administrator can list the past or future appointments by clicking "List" button. After button is clicked, depend on the branch selection and "Past/Future"

selection, appointments which satisfy the criteria will be listed as shown in Figure 14.

4 Conclusion and Assessment

In this report, the implementation of Hospital Appointment System was explained in detail. As it was stated, the program is protected against SQL injection. However, password is not protected by any hash algorithm. Password is stored in the database in raw format. Therefore, it is not so secure. Nevertheless, since username is not selected as primary key in the design for Patients and Admin table, any patient or admin who is registered via PhpMyAdmin tool can be created with the same name of existing Patient or Admin. It is the mistake I have done during design. However, this problem cannot be seen when patient is registered via website. The other possible problem of this system is any branch can be created with the same name with existing branch since I didn't choose name as primary key. Since it is not written in the requirements of the homework, I didn't pay attention for this.