**Lab 2:**

**ST. VINCENT HOSPITAL**

**SYSTEM REQUIREMENTS**

Prepared for

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**Abstract:**

**This report lays out the functional and nonfunctional requirements of a hypothetical online system being developed to org****anize information for St. Vincent Hospital. Patients, doctors, nurses, receptionists, and management will each be able to access different aspects of the system to manage medical visits and information.**

**Requirements Determination**

**Nonfunctional Requirements**

**1. Operational Requirements**

1.1Database should create an external backup at the end of each day.

1.2 System should be compatible with any web browser.

1.3 Mobile patient website access.

**2. Performance Requirements**

2.1 Authenticating with the database should take less than 3 seconds.

2.2 Querying for a specific doctor's weekly schedule should happen in less than 4 seconds.

2.3 Inserting a new appointment into the database should take 6 seconds or less.

(name, date, time, doctor, nurse)

2.4 Inserting a new account into the database should take 14 seconds or less

(include billing information)

(first name, last name, e-mail address, phone, address, emergency contact name, emergency contact phone, allergies, health problems, reason for visit, preferred doctor option, prescription, insurance/payment option).

2.5 Website support for 1000 concurrent users.

**3. Security Requirements**

3.1 Appointments can only be modified by the patient who created them or the doctor assigned to them.

3.2 Only management can create or modify doctor schedules.

3.3 Must define input validation for all user database queries to protect against SQL injections. Define a validation rule for each input field (name, address, etc...)

3.4 Patients should be able to pull up doctor availability information.

3.5 Receptionists should only be able to modify schedules of doctors they are assigned to.

**4. Cultural and Political Requirements**

4.1 English and Spanish translation for website.

**Functional Requirements**

**1. Patient Account Management**

***For patients and receptionists:***

1.1 Create new patient account.

1.1.1 Create patient identification information.

1.1.2 Create patient billing information.

1.1.3 Create patient contact information.

1.1.4 Create patient medical information.

1.1.5 Initialize patient history/treatment information.

1.2 Update patient identification information.

1.3 Update patient billing information.

1.4 Update patient contact information.

***For doctors:***

1.5 Update patient medical information (Primary doctor and attending specialist included)

1.5.1 Auto-read thermometer to populate data in patient information chart.

1.5.2 Issue and cancel prescription and treatment options.

1.6 Update patient history/treatment information (current treatment included)

1.7 Patient medical record/ medical history request.

1.7.1 Populate spreadsheet with patient information from database.

**2 Employee Account Management**

***For administrators:***

2.1 Create new employee account.

2.2 Employee account privilege management.

2.2.1 Upgrade employee access level.

2.2.2 Downgrade employee access level.

2.3 Remove Employee account

**3 Schedule Management**

***For administrators:***

3.1 Create Schedules

3.1.1 Add doctors to schedules.

3.1.2 Add nurses to a schedules.

3.1.3 Post weekly schedule to database.

3.2 View/retrieve schedules. *[Also accessible by doctors, nurses, and receptionists]*

3.2.1 Retrieve specific doctor's daily schedule. (daily appointments) *[Also*

*accessible by doctors and receptionists]*

3.2.2 Retrieve specific nurse's daily schedule. (daily appointments) *[Also accessible*

*by nurses and receptionists]*

*3.2.3 Modify Schedules*

*3.2.3.1 Remove doctors from a schedule.*

*3.2.3.2 Remove nurses from a schedule.*

**4 Manage Appointments**

***For patients and receptionists:***

4.1 Schedule a new appointment.

4.1.1 Retrieve patient information.

4.1.2 Retrieve doctor availability.

***For doctors and receptionists:***

4.2 Add doctor to an appointment.

4.3 Remove doctor from appointment.

4.4 Add nurse to an appointment.

4.5 Remove nurse from an appointment.

4.6 Cancel Appointment.

4.6.1 Reschedule Appointment.

4.6.2 Automatic e-mail notifications to inform patients of cancellations.

4.7 Retrieve appointment information.

**5 Database Management**

***For the system:***

5.1 Database backup information.

5.1.1 Automatic database backup daily.

**Scope of this Project**

This project scope will be focused on security and user credential entry from the website to access the database. User access level is the key important factor for retrieving and modifying information within the database. A patient account may only access and modify their own identification, billing, history, medical, and contact information. The same stipulations apply to patient appointments. Doctors and the receptionists who are assigned to them may only access their own schedule information. Receptionists can alter, add, or delete patient appointments with spoken permission from the patient. Finally, hospital management is the only entity that has the access level to create a new employee schedule and post it to the database.

Another key factor regarding the scope of this project is limited patient mobile access. This will require all functions within our code base to be ported to support multiple mobile platforms, mainly iOS and Android. The St. Vincent Hospital website will also have to have a separate version for mobile access.