Class: CS410/510

Semester: Spring 2014

Project for CS510 students only

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Patient Registration and Monitoring System

Patient registration and monitoring systems are a necessary part of the health information systems. The aim of this project is to develop database backend system for managing patient information. The aim is to have most of the business logic implemented in the backend that interfaces with a thin web-client to allow users to interact with the data.

1. A patient healthcare system maintains information about name, address, primary physician, date of birth, previous medical conditions, and prescriptions of the patient. The information about the insurers is also maintained for each of the patient. This includes insurance id number, phone number of the insurer and the dates of coverage.
2. A patient can also designate a living will and annotate a maximum of 4 persons in a ranked ordered list of decision makers if the patient is unable to make medical decisions on his/her own.
3. A patient can also provide a primary and a secondary pharmacy name, address location for the delivery of their prescriptions on a per prescription basis. All the prescriptions of the patient that require refills default to the pharmacy originally assigned for the prescription.
4. A patient can schedule to meet a primary physician and the system maintains the list of such appointments that are about to happen in future or have occurred in the past.
5. A physician has attributes such as name, institution name, location, highest medical degree obtained and area(s) of specialization associated with them. Each physician may be affiliated to multiple institutions and has assigned days and time that he/she works at an institution.
6. A physician will meet the patients only during previously obtained appointment times and will carry on a diagnosis. A physician maintains the notes on the patient conditions and with each of the associated medical conditions create a treatment plan that may include prescriptions. Note, not all conditions require a prescription. A physician may order lab work and recommend future dates for follow-on appointments.
7. The nursing staff takes care of the patient by taking their vitals during each visit and measure body temperature, weight, blood pressure and height of the patient. They also have access to previous patient records.
8. All patient records are maintained in a database and the access to the database is controlled. All views, modifications and deletions to the database are recorded and audited.

Design a database system that enables above business logic for patient management.

1. Create a data model for the system and provide a list of operations that you intend to support for this system (Deadline 11th of April 2014)
2. Create the database and implement the business logic to have a fully functional backend system (Deadline 2nd of May 2014)

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1. Patients, nurse, physician, and administrator can log in the system with their own username and password.

2. Administrator can create/manage/delete accounts for patients, nurse, and physician.

3. Patients, nurse, physician can change their own password, which administrator can manage everyone's password.

4. All the login events are logged into the database.

5. All users can safely log out.

-After login:

6. Patient can view his own account information, but may only edit limited personal information(like birthdate, address).

7. Patient can make a living will, and also annotate maximum of 4 decision makers in ranked order.

8. Patient can edit/remove living will or decision makers.

9. Patients and physicians can make appointments.

10. Patients and physicians can only view upcoming and history appointments related to themselves.

11. Patients can add insurance information to the database.

12. Nurse can create patients' record after each visiting(temperature, weight...). After created and submitted, nurses can not edit it anymore. But they can still view it.

13. Patients can only view its own records

14. Physician can only view the patients record when the patients have/had appointments with him.