Patient Registration and Monitoring System

Patient registration and monitoring systems are a necessary part of a complete health information system. The aim of this project is to develop a 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.

Milestone 1: Review the provided logical data model diagram. Correct the errors on that diagram; make additions to the model so it would support the requirements below. Translate the revised model into a physical model for review. Due April 1, 15.

Milestone 2: Design and develop a subset of the code required to meet the assigned subset of requirements (see below). Due April 22, 15.

For this project

Team 1 (responsible for Set 1) will be led by Jason Cook.

Team 2 (responsible for Set 2) will be led by Nevena Dragovich.

Team 3 (responsible for Set 3) will be led by Patrick Lee.

Team 4 (responsible for Set 4) will be led by Guru Sridhar.

Each team lead will select the other members of their team, with the constraint that each team must include one member who has taken the Data Modeling course in F14.

Deliverable code is to be developed in Java and JDBC.

When each team delivers their physical data model on April 1, instructors will take one of the delivered designs and install it (possibly with some revisions) on Onyx by April 3. All development will be delivered against that schema. Team leaders will coordinate and sequence development steps across teams. Team leaders will interact with Mike Lynott to clarify requirements.

Assignment Set 1

Fundamental Record

|  |  |
| --- | --- |
| Enter, update details of a physician | Load script |
| Enter, update details of an insurer | Load script |
| Enter, update details of an illness | Load script |
| Enter, update details of a medication | Load script |
| Enter, update details of a pharmacy | Load script |
| Enter, update details of a patient, including the patient’s insurance policy, primary physician, preferred pharmacy/pharmacies, diagnoses, current medications, and living will designees. | Webpage |
| Prepare a report listing all physicians and their patients | Report |

Assignment Set 2

|  |  |
| --- | --- |
| Enter, update details of a medical facility | Load script |
| Enter, update details of a medical specialty | Load script |
| Enter, update details of a medical qualification (degree, certification) | Load script |
| Enter, update physician qualification(s), medical specialty/specialties, and scheduled days/times at the medical facilities where the physician works. (Some physicians work at one facility, some at multiple facilities.) | Webpage |
| Report, for each facility, a week’s schedule showing days and times each physician is available. | Report |

Set 3

|  |  |
| --- | --- |
| Enter, update details of a nurse. | Load script |
| Assign a nurse to support a doctor at a facility. | Webpage |
| Enter details of a patient’s future appointment in an open time in the doctor’s schedule. | Webpage |
| Display a doctor’s list of patients at a facility on a specific day. | Report |
| Display a list of the appointments at a facility on a specific day. | Report |

Set 4

|  |  |
| --- | --- |
| Enter, update details of a medical test | Load script |
| Enter, update details of a nurse’s encounter with a patient, including the patient’s height, weight, blood pressure and temperature | Webpage |
| Enter, update details of a physician’s encounter with a patient, including notes, new diagnoses (if any), prescriptions (if any) and follow up timeframe. | Webpage |
| Display details of patients seen by the doctor in the prior week. | Report |