Software Design Method

Final Group Project

HealthCare Information System

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1. Motivation (Describe the reason you picked the topic)

Health Care Information Systems is designed for improving hospital's cost control, increase the timeliness and accuracy of patient care and administration information, increase service capacity, reduce personnel costs and improve the quality of patient care. However, experience shows that most of these benefits will not occur automatically following system implementation. Operational problems may exist that diminish information timeliness, accessibility, and accuracy; policies and procedures may not have been sufficiently tailored to reflect the realities and intents of the systems, and personnel tasks may not have been adequately restructured. In order to realize the full potential of information systems, health care organizations must plan for and implement strategies that are designed to maximize such benefits. So we use what we learn in the Software Design Method class to build a more user-friendly and more efficient Health Care Information System.

2. Discuss related work (literature survey)

After reading the paper <Best Practices in the Design and Development of Health Care Information System>, we acquired two important points for the system:

One of the most important constraints of the medical data is the need to permanently adjust the items of data to be stored in the database. Some data architecture patterns are presented, which enable the information systems to support those adjustments without any change of the data model or software application, providing scalability in design to the systems. Another issue related to medical data is the possible existence of different terms for the same concept. This is usually the case when legacy data are imported, or when medical teams from different specializations are using the same system.

There is a useful website: “http://www.open-emr.org”, which is a fully build Health System. OpenEMR is an open source electronic health records and medical practice management software can be downloaded on the Internet for free, contains such as Scheduling, Medical Billing, Clinical Decision Rules functions and so on. This website gives us a more straightforward acknowledge of the Health Care System and inspire us the following steps from use cases through coding.

At last, the textbook (Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development) is the most important resource for the final project, by which guiding us the correct format and contents of the Use Case, Domain Model, SSD, DCD.

3. Use Cases Context

1. Patient admission registration / create patient
2. Medical records - Review / add patient medical records
3. Treatments - Schedule /view / update /cancel treatment / lab
4. Prescribe medication
5. Reorder medication (patient refills / reorders medication)
6. Process medical payment

4. Details of Each Use Cases

* 1. Patient admission registration
  2. Medical records - Review / add patient medical records
  3. Treatments - Schedule /view / update /cancel treatment / lab
  4. Process medical payment