

Software Design Techniques

Project Topics

E-Medical Assistant

A big drug-store (like SensiBlu) deals with a great range of medicines which can be sold or can be released on medical prescriptions. In the later case, the medicines are given with various percents of compensation, depending on the patient's disease. For instance, for the patients who have cancer, all the medicines are compensating by the government with 90% from the sale price. For other diseases, like those mental, the medicines are free of charge that is they are compensating 100%.

Furthermore, if the drug-store doesn't have a medicine released on prescription, the shop assistant propose to the client another medicine with exactly or much similar composition which may replace the former medicine. In order to do this, the shop assistant needs to know which the medicine alternatives are. From this reason, the shop assistant has to deal with large lists of information (like name, composition, indications, contraindications, administration mean, sale price) about medicines which are found in the drug store and which may constitute alternatives. If the assistant is unsure he can input select the symptoms of the patient from a list and he will be shown a list of suggestions.

In order to optimize the drug store comprehensive activity the drug-store owner decided to use an information system for managing medicine sales and releases on prescription. For this he decided to develop the so-called "E-Medical Assistant" software system. The system implements an electronic medical notebook and helps the shop assistants to sale and release the medicines on prescriptions.

The system will provide the following services:

- A. Allow inserting and storing (in a persistent repository) all the information about the medicines received in the drug-store.
- B. Whenever a shop assistant has to sell a medicine on the base or not a prescription, he/she has to use the system. In the case of a prescription-based selling, the scenario is much similar with the scenario of medicines selling, only that, for each medicine the system verifies if it is compensated or not, and in the affirmative case, it should compute the new sale price by applying the compensation percent from the old sale price.
- C. Allow to anyone from the personal staff to browse the information on the medicines. The information will be listed in alphabetical order depending on the different criteria like, the type of the disease, firstly those which are found in the drug-store, etc.

Furthermore, the company wishes to integrate and coordinate data from all its point of services (pharmacies) to get an overall view on the sales and stocks either on a national level or on a regional level.

This centralized system should expose a secure interface to be queried by national government agencies for financial reports.

Develop the four architectures of the system: business architecture, Information technology architecture, information architecture and application architecture.

Design three software architectures in three different architectural styles.