

PROJECT DESCRIPTION

(Advance Programming Techniques)

A private health clinic wants to automate management of their operations by implementing an interactive desktop application, which should make the system can be accessed by PCs through the Internet. The Clinic Management System (CMS) is to be used by both patients and the clinic personnel (doctors, nurses, and administrative staff).

A patient will be able to make on-line appointments for an examination, cancel an existing appointment, inspect lab results, check their outstanding balance and make payments using their credit cards.

Doctors will be able to record their schedules including the time periods they are busy and periods they have time-off. They will also be able to browse their schedules for any appointments for examinations. The doctors could also ask to cancel appointments during a specified period, in case they become unavailable for unexpected reasons, subject to approval by clinic director, who is also a doctor with management responsibilities (head doctor). A doctor may browse a list of his/her patients, including past patients. Initially only some brief information is displayed for each patient but the doctor may ask for details (including picture and patient records in chronological order).

The administrative staff can also help patients, doctors and nurses to perform operations on their behalf, in situations where such a user does not have access to the Internet.

User authentication is especially critical for such a system with sensitive information for both patients and clinic personnel. In addition, clinic currently has only about a couple of hundred active patients but as time goes by, especially after the automated system is in place, the clinic management expects to have at least thousands of patients if not more.

The accounting of the clinic for both customers (balances due) and clinic personnel (their salaries and other compensation) also should be taken into consideration. (in the simple level)

To attract more customers, the clinic management has also decided to put two types (silver and gold) of memberships in place with varying privileges. One can become a silver customer if they have used clinic facilities pretty regularly for at least two years. A customer who has been a silver customer for at least two years gets to be a gold customer, assuming they have never failed to make payments past their due dates. Both silver and gold customers are provided with more flexible time slots for making appointments. Gold customers get additional privileges such as getting an SMS notification (virtual) when their lab results are ready.

Desktop application must be designed multithreaded. For example, when a doctor investigates a patient's - currently in the examination -lab results, a newly arrived patient can be added the list displayed on the system. Consider and include the cases where the multithreaded design is reasonable.

The part related with nurse is removed from the project !

The main objectives of the project are to *gain experience in doing teamwork* through all phases of software engineering and *practicing object-oriented software development techniques*.

- 1. Project groups will consist of 1-2 students in each group.**
- 2. There are no limits placed on the project, but there are some restrictions on the software structure, described above.**
- 3. Provide Use Case, Class, Sequence and Activity diagrams.**
- 4. Inform the groups as soon as possible.**
- 5. The deadline will be announced.**