University of Colombo School of Computing
SCS1303 - Introduction to Software Engineering
Class Diagram

Tutorial 08

Digital Health Management System (DHMS)

DHMS is a cloud-based medical management system used by hospitals to improve operational efficiency and patient service.

In the system, every Patient must be registered with a unique ID and personal details such as full name, age, and contact number. Each patient may schedule multiple Appointments with one or more Doctors. Appointments record the date, time, and purpose. When a patient schedules an appointment, the system allows the doctor to access their medical history during the session.

Doctors are specialized professionals with fields such as dermatology, pediatrics, or cardiology. Each doctor has a name, a license number, and years of experience. Doctors can treat many patients but may also manage Prescriptions for them during appointments. Prescriptions include a list of medicines, dosage instructions, and a digital signature from the doctor.

The system also has Medical Records, which contain past diagnoses, lab test results, and treatment notes for a patient. These records are confidential and are linked strictly to the patient. When a patient is removed from the system, all their records and prescriptions are permanently deleted.

To enhance communication, DHMS includes a Messaging Module. Patients can send messages to doctors, and doctors can reply. Messages contain timestamps and are stored only for 30 days. This module is maintained separately by a Communication Handler component that temporarily handles message objects and removes expired ones.

The hospital administration uses Reports, which summarize appointments, patient visits, and treatments. Reports are generated by doctors or administrators and stored in the system for review.

Doctors and Administrators are both Users in the system but have different access levels and roles. Only Administrators can add or remove users, doctors, or patients.

I. Based on the above case study, carefully read and analyze the scenario. Then, use draw.io (or any other UML tool) to draw a Class Diagram for the Digital Health Management System (DHMS). Be sure to clearly identify:

- Classes, Attributes, Behaviors
- Use correct symbols, visibility, and multiplicity.
- Clearly indicate relationships among classes.

Submission:

- ✍ **Time allowed:** 1.30 PM − 3.00 PM.
- ✍ **Submission method:** Upload your report to the VLE (Virtual Learning
- ✍ Environment) using the provided link.
- ✍ **File format**: PDF
- ✍ **File naming format:** ClassDiagram_ New Index Number.pdf (Example:
- ✍ ClassDiagram_IT2022010.pdf)