Department of Computer Science and Engineering

VII Semester - CSE 4306 –Principles of Software Engineering (OE)

FISAC

TAKE HOME ASSIGNMENT

SUBMISSION DATE-10-11-2023

1. Draw a UML class diagram to capture the following situation: "Every student is enrolled in a course. Each student may be enrolled in a set of units. Some units are core units for one or more courses and some units are elective units for one or more courses." **Assumptions:** a Course must have at least one Student enrolled in it and as every student is enrolled in a Course, the relationship between Course and Student is 1-to-many. Assuming that elective units can be shared by different courses, between Course and ElectiveUnit is a many-to-many relationship (Similarly between Course and CoreUnit).
2. Identify the actors and the use cases in the following scenario to register a patient in a hospital management system:
   The administrator enters the patient's name, address, date of birth and emergency contact details into the system. If the patient has only public health insurance, the administrator enters the patient's Medicare number, and the system verifies this with government health database. If the patient also has private health insurance, then the administrator enters also the patient's private health insurance details, and the system verifies these details with the private health insurance system. When these details are verified as correct, the system saves the patient's details and confirms the registration.
3. A security light system has a switch and a motion sensor attached. It can be either armed or unarmed. If the switch is in the off position the light is off and the system is unarmed. When the switch is turned on, the light stays off but the system is armed. If the system is armed and the motion sensor detects movement, the light comes on. If no movement is detected for 5 seconds, the light goes off.
   Draw a UML state diagram to describe the states of the security light system.
4. Draw Use-Case diagram for student admission system.
5. Draw Activity diagram for withdrawing money from ATM.