Software Design and Architecture

Fast-NU-ISB Spring 2022

Lab 05 -TASKS

TASK # 01

Design Use Case Diagram for given case study.

Short Course Training System

Do you know that it costs a lot of money to get a 'Certified Java Programmer' certificate? It could cost you thousands of euros. Let's imagine we will develop a browser-based training system to help people prepare for such a certification exam. A user can request a quiz for the system. The system picks a set of questions from its database, and compose them together to make a quiz. It rates the user's answers, and gives hints if the user requests it.

In addition to users, we also have tutors who provide questions and hints. And also examiners who must certify questions to make sure they are not too trivial, and that they are significant. Make a use case diagram to model this system. Work out some of your use cases. Since we don't have real stake holders here, you are free to fill in details you think is significant for this example.

TASK # 02

ATM Session Use Case:

A session is started when a customer inserts an ATM card into the card reader slot of the machine. The ATM pulls the card into the machine and reads it. (If the reader cannot read the card due to improper insertion or a damaged stripe, the card is ejected, an error screen is

Displayed, and the session is aborted.) The customer is asked to enter his/her PIN, and is then allowed to perform one or more transactions, choosing from a menu of possible types of transaction in each case. After each transaction, the customer is asked whether he/she would like to perform another. When the customer is through performing transactions, the card is ejected from the machine and the session ends. If a transaction is aborted due to too many invalid PIN entries, the session is also aborted, with the card being retained in the machine.

The customer may abort the session by pressing the Cancel key when entering a PIN or choosing a transaction type. Propose a use case diagram for an ATM machine for withdrawing cash. Make

the use case simple yet informative; only include the major features and design fully dressed use case for system.

TASK # 03

FAST academic office plays a central role in managing academic processes including admission, course registration, exam conduction, result preparation etc. All of these processes are further divided into sub task such as exam conduction involves preparing schedules, assigning venues and invigilators, exam paper printing, issuing admit cards to students, scheduling show ups etc. Students, Teachers and other individuals are involved in the whole process. Design a domain model of the academic system in FAST in the light of above information and your own knowledge.

TASK # 04

Give situations (one for each) where this kind of relation is used .for this task you need to design a use case diagram of some real world scenarios different from task given.
- include
- extend
- Specialization