NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES
Software Design & Architecture Lab
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Lab 04

Develop the class diagram (in UML) for the following system.

Task-01

Indus Hospital have four listed category of Doctors, Eyes Specialist, Heart Surgeon, physician, Dentist. Every doctor enter into hospital with proper face detection login system for maintaining attendance of each doctor as LoginDoctor(). Every Doctor sit into four different rooms, room have ring() function for calling the peon at the time of emergency. There is another Administrator department who is responsible for maintaining the history of all doctors , equipment that will be used through out the year using ViewDocAttendance() and Inventory() functions. There is separate Patient's siting area. Patients are not allowed to entered into doctor's room without token using tokenissue() function. Token must be issue by counter to the particular doctor. Token must have proper details of patient, like name, reason, age. Current medicine.

Eyes specialist check the patients' previous history (Last Hospital name, last checkup time, Last eye sight number) and monitor current eyes sight number with proper Eye-Checking() Function.

Heart Surgeon check the patients' previous history (Last Hospital name, last checkup time, last MIR-Report) and monitor current heart-Beat with proper MIR() Function.

Physician check the patients' previous history(Last Hospital name, last checkup time, Last Uric Acid) and monitor current Uric Acid with proper URIC-Acid-Test() Function.

Dentist check the patients' previous history Last Hospital name, last checkup time, last dental visit)and monitor current teeth surgery with proper Dental-Cleaner() Function.

(a) Identifying UML Classes
(b) After identifying classes identify applicable relationships
(c) Generate JAVA code.

Task-02

The idea of buying a home or apartment to rent out for profit may sound alluring. But buying a rental property for income and long-term capital appreciation can have its ups and downs. For example, the housing market can fluctuate depending on location, supply and demand, and the economy. Now a days properties are getting so expensive. It is difficult for poor class people to take his own property so that's the reason. Real estate investors business are very helpful. In Defense Society, A DIYA state agent offer different type of rental houses. House might be one portion double portion or may be triple portion.

One Portion have two Rooms with open kitchen and charged as 20000 per month. Two Portion apartment have three Rooms with open kitchen, car parking couch and charged as 35000 per month. Three Portion apartment have Six Rooms with Tv area and outdoor garden car parking and open kitchen and charged as 60000 per month.

A stat agent directly Link with house's Owner and rent directly transfer to owner From rental family. Owner have a responsibility to transfer onetime payment to stat agent. All the expenditures are paid directly online using mobile app.

(a) Identifying UML Classes

(b) After identifying classes identify applicable relationships

(d) Generate JAVA code.

Task-03

Pakistan Engineer Council (PEC) wants to build an Online Mobile Application that will be used to issue PEC-CARD, after the completion of engineering from HEC Recognized University. The Online Mobile Application will allow the applicant to enter the Personal details, like name, surname, Degree title, Age, Degree completion year, data of admission. Previous all academic record and as well as proper National id card number and email id. The Administrator department verify all the details and sent account approval email to the particular applicant.

Now applicant are able to login the portal with email id and NIC as password. After the successful logged in, he/ she will see two different option apply card or apply for card renewal and one more option register complaint. If he select card-apply () function, system will ask to upload all necessary scan documents, like: all the transcripts, degree, and NIC and pass certificates. And there is another option for voucher generator. Applicant have to generate the voucher and submit along with documents.

After the successfully documents uploading, system will update the portal status from in progress to review. When administrator check all the documents and verified, they will sent acceptance email to the applicant. Now status has been update form review to card issue date. If applicant go for card renewal option, now there is no need to submit documents, again. Applicant have to only pay a voucher for card renewal. For the complaint box applicant can write 100 words of descriptive query related to the PEC-card issues. and sent to the PEC administrator,

(a) **Add one more functionality according to your perspective.**
(b) **Identifying UML Classes**
(c) **After identifying classes identify applicable relationships**
(d) **Generate JAVA code**

Task 04

Apps are divided into two broad categories: native apps and web apps. Native apps are built for a specific mobile operating system, usually iOS or Android. Native apps enjoy better performance and a more finely-tuned user interface (UI), A Software house receive a project from his/her client related Online laptop Repair and Buyer app. Core functionality of this app is to provide laptop facility at doorstep. User can perform multiple operation using this app. User are able to buy a laptop or replace a laptop with sale items. He/she can also buy any hardware component for laptop. This app will also provide maintenance facility on your request. As we know Technical market grow with time. Hardware specification are getting improved, in that result new device are upgrade. This app also provide a latest notification regarding new specifications.

User first have to create account with valid creational using Login() function after registration. He will get a message on their number for 3 digit pin code. That will be used for every kind of operation like if person generate a request for new laptop or for laptop maintenance, System will ask three digit pin before any request. That will helpful for a administrator to recognize the valid person. After login user will see four option. NewLaptopReposatory, SaleLaptopReposatory, LaptopMaintenance, paymentMethod, If user select NewLaptopReposatory option he will see list of available laptop with proper details after selecting laptop, user generate a request for buying new laptop from listed laptop. System will as ask for pin Code and address Confirmation with current cell number. After two days order will be deliver to the user by checking their nic.For maintenance service user identify the nearest shop and generate a request in order to pick up the laptop from doorstep. This app only provide cash payment at the time of delivery.

(a) **Add one more functionality according to your perspective.**
(b) **Identifying UML Classes**
(c) **After identifying classes identify applicable relationships**
(d) **Generate JAVA code.**