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BIRZEIT UNIVERSITY
Computer Science Department
Software Engineering (COMP 433)
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Midterm Exam   31/10/2010

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Question 1 [30 marks]

a. Complexity is an inherited attribute of the software development, discusses the software complexity, in your discussion consider the role of the modeling with the software complexity.

b. Critique and discuss the following statement: "Software engineering is simply the development of software."

cont Q1.

the Computer system

c. What are entity classes? What are other categories of class need to be distinguished in class modeling? Explain?
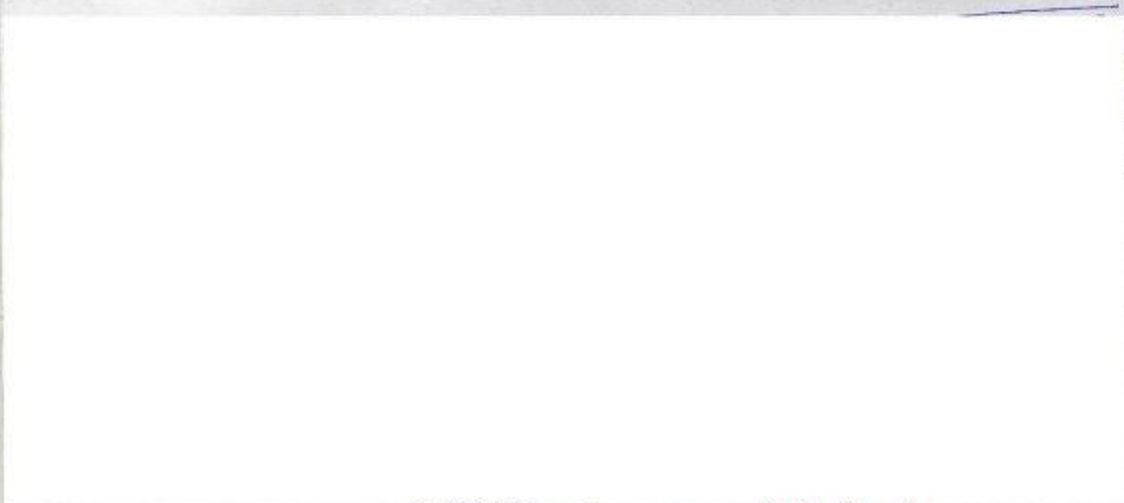
d. What is the relation that you should use to relate the bookAppointment with ViewPatientRecord and with ViewDoctorAvialableTime. Justify your answer.

3 use cases

diagram. Include extend.

Assume that a system at the dentist allow a patient to review his/her record when requesting an appointment to meet a dentist. The ViewPatientRecord feature provides a list of the past visits. Also the system retrieves a list of available time from which the patient can select one slot that suits him/her. The ViewDoctorAvialableTime feature retrieves a doctor's available time table which is divided into slots each slots 30 mins.

Question Two [20 Marks]

Explain what is wrong with the following set of requirements and comment on their corrections.

a. When required by users, the system shall display information about a particular book.

b. CMT generates reports for the administrator, which contains user information.

c. If the user information is found then the system displays the first name, last name, and user-type (admin or user) in a dialog box.

d. The system should use the binary search for all search operations based on numeric key.

e. The system should be fast.

False : ⟹ How the System fast : is one operation on day or 100 operations in one houre.   (Not clear).

Question Three [50 marks]

Read the following case study and answer all the questions that follow:

A Video Store (AVS) runs a series of fairly standard video stores. Before a video can be put on the shelf, it must be catalogued and entered into the video database. Every customer must have a valid AVS customer card in order to rent a video. Customers rent videos for three days at a time. Every time a customer rents a video, the system must ensure that they do not have any overdue videos. If so, the overdue videos must be returned, and an overdue fee must be paid before the customer can rent more videos. Likewise, if the customer has returned overdue videos but has not paid the overdue fee, the fee must be paid before new videos can be rented. If the customer is a premier customer, the first two overdue fees can be waived, and the customer can rent the video. Every morning, the store manager prints a report that lists overdue videos. If a video is two or more days overdue, the manager calls the customer as a reminder, to return the video. If a video is returned in damaged condition, the manager removes it from the video database and may sometimes charge the customer.

a. Identify suitable use cases, and draw a use case diagram for this system.

b. Provide a narrative description for a use case called *"rent a Video"* use cases.

c. Identify a list of classes and a draw a class diagram for the above system; show the associations, aggregation and inheritance relationships.

d. Based on the narrative description for the "rent a Video" use case, specify one functional requirement and another two non-functional requirements one of them should be performance. Those requirements should be clear and verifiable.