(1) Create an activity diagram for the following system. A Video Store (AVS) runs a series of fairly standard video stores. Before a video can be put on the shelf, it must be cataloged 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 paid before 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. 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 to remind them 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.

(2) Identify use cases and create a detailed set of use case descriptions for the AVS video store mini-case in problem 1.

(3) Create a use case diagram for the AVS video store mini-case from the previous two problems.

(4) Create an activity diagram for the patient obtaining prescription glasses. The first step is to see an eye doctor who will give you a prescription. Once you have a prescription, you go to a glasses store, where you select your frames and place the order for your glasses. Once the glasses have been made, you return to the store for a fitting and pay for the glasses.

(5) Identify use cases and create a detailed set of use case descriptions for the eye-glasses mini-case in problem 4.

(6) Create a use case diagram for the eye-glasses mini-case from the previous two problems.