

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Software Engineering Specialization

### Exercise: Movie Shop—State Machine Diagram

Construct a state machine diagram showing the states that an instance of the RentalCopy class can be in *with respect to its rental status*. Show only the states, transitions and the events and/or conditions, if any, that cause a transition to be taken. *Do not show the activities that can occur within a state.*

Problem statement requirements that could be relevant to determining the states of a RentalCopy object:

- It must be able to record which movies are sold and rented and by whom.
- For sold movies, the quantity sold should be recorded; for physical movie rental, which copy is rented and when it is due back should be recorded.
- The system should keep track of overdue rentals of physical movies and send email notices to customers who have movies overdue.
- Members should be able to make reservations for physical movie rentals either in person at the shop, by telephone or via the Web.
- A member can reserve at most five physical movies at any one time, but there is no limit on how many physical movies a member or nonmember can rent at any one time.
- A sales clerk should be able to sell and rent physical movies and process the return of rented physical movies.