

# CSSE 374 – Software Architecture and Design I

## Homework 5

### Objectives

Practice GRASP principles by applying four new ones (Polymorphism, Indirection, Pure Fabrication, and Protected Variations) to designing portions of our BBVS design.

Practice tradeoffs in making design decisions with respect to GRASP.

### Due Date

11:59 p.m., Tuesday, Week 7, January 25<sup>th</sup>, 2011.

### Tasks

1. Review the attached Domain Model for the BBVS. Identify four different system operations that would be sensible in this domain (e.g., beginRental, returnVideo) where you could apply the GRASP principles Polymorphism, Indirection, Pure Fabrication, and Protected Variations. If a system operation that you used for Homework 4 also serves to illustrate one of the new principles, then feel free to reuse the diagram.
2. For each system operation listed in Task 1, sketch a (partial) design class diagram and an Interaction Diagram (either Sequence Diagram or Communication Diagram), and briefly describe the tradeoffs and rationale for your design decisions as follows:
  - a. For one operation, describe how you used the Polymorphism GRASP principle in your design.
  - b. For a second operation, describe how you used the Indirection GRASP principle in your design.
  - c. For a third operation, describe how you used the Pure Fabrication GRASP principle in your design.
  - d. For a fourth operation, describe how you used the Protected Variations GRASP principle in your design.

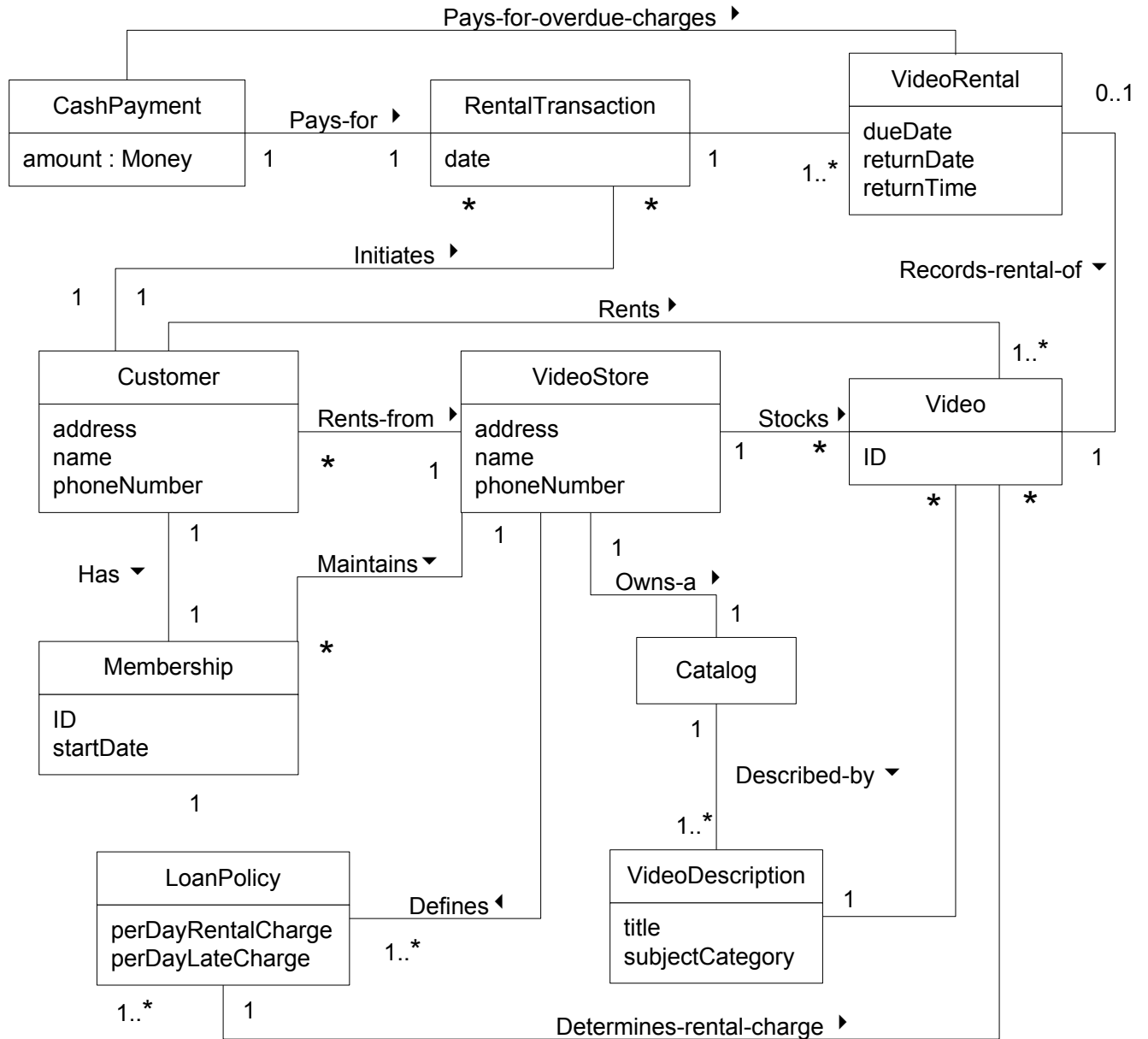
As always, please provide accompanying text and/or embedded notes indicating what you did in your modeling. Please recall that scans of neatly drawn pen and paper sketches are adequate for homework (though not for projects). There is a scanner in F217.

### Submitting Your Work

**Steve's Section:** You can submit either a **pdf** file or a **Word** document. Name your document *HW5-GRASP2*, with the appropriate extension (*pdf*, *doc*, or *docx*). Please include your name on the first page of the document.

**Shawn's Section:** Please submit a **pdf** file with a cover page containing your Name, Assignment Title, Date, and Campus Mail number, to the Angel dropbox

for Homework 5. Please name the document: <your last name>HW5-GRASP2.pdf (e.g., Bohner-HW5-GRASP2.pdf).



**Domain Model for the BBVS**