CSSE 374 – Software Architecture and Design I

Homework 5

Objectives

Practice GRASP principles by applying three of them (Creator, Information Expert, and Controller) to designing portions of a Video Store Design.

Practice evaluating your team members using a Performance Evaluation Survey on Angel; get a sense of what is involved constructively evaluating an individual's performance.

Due Date

5 p.m., Tuesday, Week 5, January 12th, 2010.

Because of the exam, no late days are allowed on this assignment.

Tasks

The first three tasks involve a partial design for a Video Store system. You do not need to do a complete design, just portions that demonstrate your knowledge of the GRASP principles as indicated below.

1. Review the attached Domain Model for the Video Store. Identify three different system operations that would be sensible in this domain (e.g., beginRental, returnVideo) where you could apply the GRASP principles Creator, Information Expert, and Controller.

2. Sketch a (partial) design class diagram and Interaction Diagram (either sequence diagram or communication diagram, your choice) giving your design for each system operation, as follows:

   a. For one operation, describe how you used the Creator pattern to decide which class created an instance of some other class.

   b. For another operation, describe how you used Information Expert.

   c. For the third operation, describe how you used Controller.

3. For each of your operation designs above, briefly describe the effects of your decision on coupling and cohesion.

The last task is on ANGEL.

4. Evaluate your team members using the Midterm Team Member Performance Evaluation survey on ANGEL. This represents 3 of the 10 points for this assignment, so please take it seriously.

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

Please submit your GRASP on Video Store assignment as a single document to your individual SVN repository for this course. Please submit a **pdf** file. Name your document *HW5-GRASP-Video.pdf*.

Pays-for-overdue-charges ▸

CashPayment		RentalTransaction		VideoRental
amount : Money		date		dueDate returnDate returnTime

CashPayment — Pays-for ▸ — RentalTransaction: 1 — 1 — 1 — 1..*

0..1

Initiates ▸   *   *

1   1

Records-rental-of ▾

Rents ▸

1..*

Customer		VideoStore		Video
address name phoneNumber		address name phoneNumber		ID

Rents-from ▸   *   1

Stocks ▸   1   *   1

1   1   *   *

Has ▾   1

Maintains ▾   1

Owns-a ▸   1

1   *   1

Membership
ID startDate

Catalog

1   1

Described-by ▾

1..*

LoanPolicy
perDayRentalCharge perDayLateCharge

Defines ◂   1..*

VideoDescription
title subjectCategory

1

1..*   1   Determines-rental-charge ▸

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