Test 2

**CS425 - Software Engineering**

**October 13, 2014**

**Write all answers on the blank paper provided.**

1. (3pts) List three outputs from Architecture Design regarding subsystems. Give an example of each.
   1. *Define the subsystems from analysis classes*
   2. *Specify their interface (all the operations that the subsystem will support.)*
   3. *Create the subsystem context diagram*.
2. (3pts) How does the output from Architecture Design regarding design mechanisms affect Use Case Design. Give an example from the Yoga Studio project.

*The design mechanisms will specify our user interface framework and our persistence design. For any use case the sequence diagram and VOPC will reflect the changes in both cases. For example, a user interface boundary class may become a JSF page and a backing bean. A DB access boundary class may become a DTO class accessing Hibernate.*

1. (2pts) Do we create a Data Access Subsystem for our Yoga Studio Project? Explain your answer.

*No, we do not create a DAO subsystem. We create DTO classes for each entity class and then use the framework provided data access.*

1. (2 pts) During what RUP OOAD activity do we expect to lay out ourUser Interface Design Details?Explain your answer.

*During Class Design we specify the UI design. We now have the details of all the classes needed.*

1. (1 pt) True/False = The classes shown in a Sequence Diagram and its VOPC may be different. Explain your answer.

*True – in the case of inheritance we only show the base class in the sequence diagram while we may model generalization in our VOPC.*

1. (6pts) What are the 3 types of analysis classes? Give an example of each type from our Yoga Studio Project. For each example, explain what happens to that analysis class during architecture design.
   1. *Boundary – YogaDBAccess. It becomes a DTO design class for each entity and uses a generic DAO design class.*
   2. *Control – RegistrationControl it is preserved as a design class*
   3. *Entity – Customer it is preserved as a design class*
2. (4pts) ATDD
   1. Give a short example of the Microsoft ATDD approach to defining requirements.
   2. Explain how this compares to the RUP approach to defining requirements.

*With ATDD we will specify the requirement with a scenario format specifying the initial condition, the action, and the expected result. We then write a failing test for that scenario. The failing tests are executable specifications and can be reviewed with stakeholders.*

*With RUP we will write a use case definition specifying the actor, the pre and post conditions, and the user input and system response for a flow. The use case definitions are testable and can be reviewed with stakeholders. RUP directs designers to create use case realizations during use case analysis.*

1. (4pts)What is the purpose of a Façade for a subsystem? What visibility do we use for the Façade for a subsystem? Explain your answer.

*The Façade is the subsystem’s implementation of its interface. The Façade is public and is what is visible to all the clients of the subsystem. The other classes in the subsystem get their work from the Façade and are hidden from classes outside the subsystem. This provides information hiding and encapsulation.*

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Our Yoga Studio Owner wants to allow customers to write reviews of products. Below is the use case definition for *Customer Writes a Product Review.*

We update our Yoga Studio SRS to include the following additional use case:

# *Customer Writes A Product Review*

## Brief Description

## This use case allows the customers to write a review for a product

## Actors

## Customer

## Preconditions

## Customer at the home page

## Flow of Events

#### Basic Flow

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. Customer selects browse products | 1. The list of Yoga Studio products is displayed. |
| 2.Customer selects a product | 2. The product detail page is displayed. |
| 3. Customer selects write a review | 3.Review Product page is displayed |
| 4.Customer enters review text and submits | 4. If word count is met the product review is saved to the DB. Otherwise, a minimum length required message is displayed. |

**Post-Conditions:** The new Product Review is saved to the DB.

**Business Rules:** All reviews must be at least 10 words long. Anonymous and logged in customers may write reviews.

1. Do the following for the use case analysis phase:
   1. Sequence Diagram (12pts)
   2. VOPC. (8 pts)

*See PDF diagrams.*