IMS2501: Second Year Studio  
Week 4: Studio Activity  
Case Study: Use Case and Domain Models

These notes are available on the IMS2501 Web site via http://www.sims.monash.edu.au
Please contact your tutor if you require assistance with these exercises. Tutor email address and consultation times are available on the subject’s Web page under Staff.

Objectives of session
- Practice and develop use case modelling skills
- Practice and develop use object modelling skills
- Practice and develop system design skills by working on Assignment 2
- Complete Journal Entry

All activities will be carried out within Assignment teams.

Activity 1 – Use Case Analysis – Use Case diagrams [approx. 45 minutes]
Video Store – Introduction to Use Case Modelling

A new video store intends to offer rentals of video tapes and digital video disks to the wider public. The store management is determined to support its operations with the support of a computerised system.

Initially, the store will keep a stock of approximately 1000 video tapes and 500 DVD’s. All stock will be ordered from the one supplier. All tapes and disks will be bar coded so that an integrated scanner can be used to support rentals and returns. The customer membership cards will also be bar coded.

Existing customers will be able to place reservations on videos to be collected at a specific date. The system must also have a flexible search engine to answer customer enquiries about movies that the store has, or even those that may have to be ordered on request.

Management has already sourced a number of small-business software packages that might be suitable for customisation and further development. To assist with the package selection, the store has requested the services of your group of business systems analysts whose job will be to determine and specify the requirements.

Task
1. Identify the possible uses of the system based on the above case study. A use case differs from a process in that it is a complete set of actions that has a start point and an end point that involves an outcome meaningful to the business.

2. Determine who the Actors are in the above case study.

3. Sketch a use case diagram of the video store system.

4. Go through the diagram, is there anything that is missing? Can all the requirements set out in the case study be performed on the system? Are any of the use-cases you have drawn actually part of another? Does anything depend on anything else?

The team will be assessed on the content, structure and suitability of the presentation for the audience. The individual team members will be assessed on their individual presentation style.
Activity 2 – Work on Assignment 2 – Use Case Analysis – Use Case Detailed Narratives [approx. 45 minutes]

Your group needs to produce Use Case Narratives for 2 events you have previously identified in the case study. It might be helpful to draw a Use Case diagram related to the events and check your ideas with your tutor before proceeding.

Example Use Case narrative:

<table>
<thead>
<tr>
<th>Use case:</th>
<th>Register for Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actors:</td>
<td>Student</td>
</tr>
<tr>
<td>Purpose:</td>
<td>Register a student for classes and record the student’s schedule.</td>
</tr>
<tr>
<td>Overview:</td>
<td>A Student requests the sections of class desired for a term. The system adds the Student to each section if there is space available. On completion, the system provides the Student with a list of the classes in which he or she is enrolled.</td>
</tr>
<tr>
<td>Type:</td>
<td>Essential</td>
</tr>
<tr>
<td>Preconditions:</td>
<td>Class schedule must exist.</td>
</tr>
<tr>
<td>Postconditions:</td>
<td>Student is known by the system.</td>
</tr>
<tr>
<td>Special Requirements:</td>
<td>Student was enrolled in the section.</td>
</tr>
<tr>
<td></td>
<td>Student must get a system response within 10 seconds.</td>
</tr>
</tbody>
</table>

Flow of Events

1. This use case begins when a Student desires to register for classes.
2. The Student provides the Student’s identifier and a list of the department code, course number, and section number for each section desired.
3. Adds the student to the section if there are seats available.
4. On completion of entry of the section requests, the Student indicates that the request is complete.
5. Produces a student class list for the Student.
6. The Student receives the student class list.

Alternative Flow of Events

Line 3: Invalid department code and course number entered. Indicate error. Return to Step 2.
No seats remaining. Inform the Student. Return to Step 2.
Activity 3 – Work on Assignment 2 – Class Models and Domain models [approx. 45 minutes]

Your group needs to prepare an example Class Model for the Assignment Case, and begin preparation of a domain model. (Students who attend Studio BEFORE the week 4 Seminar will be slightly disadvantaged here. Read the lecture notes for Week 4 before your week 4 studio session.)

Example domain model:

1. Identify some concepts in the Assignment system domain that can be represented as data objects. (Your knowledge of functional data modeling will help here).
2. Build a model of at least 2 concepts in the domain using the above example as a template. Note: it is not necessary to exhaustively identify every attribute at this stage, although it may be helpful to add as many as you can think of.
3. Identify any associations between any two concepts in the Assignment system domain and the cardinality of those relationships (one-to-many; one-to-one; etc.).
4. (If time permits) commence work on your domain model for submission in the System Requirements Specification due at the next Studio.

Activity 4 – Reflective Journal Entry [10 mins]
Send an email to your tutor and studio academic with subject heading "IMS2501 Reflective Journal Entry – Student ID". See Sections 9.1 and 9.2 for sample and template of Reflective Journal Entry.

Preparation for week 5:
- Prepare your presentation for Assignment 1.
- Complete Assignment 1.