Software Engineering with Objects and Components
Practical Work: Tutorial 2

Note that before next week tutorial you are required to do some preparation:

1. **Get together with your team and pull together your work on the requirements and use cases for your facet of the system. This should be readable by other teams, it needs not to be complete or polished. You should bring this description to your tutorial. *Hint: follow the suggested Software Requirements Specification template (see Lecture Notes on Gathering Requirements).***
2. **Prepare a draft of your requirements and use cases. Your document should include the following information: the name of the tutorial group; the team identifier (i.e., O, P or D), the names of each of your team members, the requirements, open issues and use cases you have produced.**
3. **Bring a printed copy of your draft to your tutorial. The draft document (i.e., Software Requirements Specification and Use Cases) will be used in next week activities.**

The aims of this tutorial are:

1. To present your initial work on collecting the system requirements and representing the use cases.
2. To provide some diverse input to other teams in your tutorial group on the structure of their use cases for their subsystem.
3. To practise creating class models from use cases
4. To begin to identify the responsibilities for the classes in your class model.

Tutorial Instructions

Each team will write a use case description, start to design a class diagram for the relevant part of the system, and review a preliminary requirements/use cases document (of another team).

Tutorial Outcomes

By the end of this tutorial your group should

1. Have some feedback on your requirements and use cases.
2. Experienced some of the issues in constructing class models.
3. Have a preliminary class model for your part of the system.
4. Have some feedback from the other teams.
5. Your team should also begin to identify the responsibilities of each class in the model.

After the tutorial:

1. Next week, each of the teams will review and present their class models for the system.
2. You should begin to prepare this as early as possible. Again, the use cases and class model need not be complete or very polished but you should be close to completing deliverable 1.

Tutorial Activities

Activity 1 - Use case Description [10 mins]

☞ *Individually* each member of the team will write a description for one use case selected from the ones identified for your part of the system.

Use Case [number ♯]	*the name is the goal as a short active verb phrase*	
Goal in Context	*a longer statement of the goal, if needed*	
Preconditions	*what we expect is already the state of the world*	
Success End Condition	*the state of the world upon successful completion*	
Failed End Condition	*the state of the world if goal abandoned*	
Primary Actor	*a role name or description for the primary actor*	
Secondary Actors	*other systems relied upon to accomplish use case*	
Trigger	*the action upon the system that starts the use case*	
Description	**Step**	**Action**
Extensions or **Variations**	**Step**	**Branching Action**
	condition causing branching action or name of sub-use case	

Activity 2 - Designing a Preliminary Class Model [20 mins]

Each team will have 20 minutes to review their use cases and to prepare a preliminary class model. The activity is structured in the following way (note that this is very tightly timed — your tutor will enforce these so the activity fits in the available time):

Preliminaries: Get into your teams.

☞ *Individually* each member of the team attempts to identify the main classes by analysing the noun phrases used in the use case.

List Classes	Draw Classes

☞ *Collectively* the whole team merges the individual lists to create a consolidated list of classes for the system. Consider the list of classes — try to identify associations between the classes. Include the associations only if your team agrees.

list all identified classes and discuss them in order to identify common, similar, missing ones and their relationships		
List Common Classes	List Similar Classes	List Missing Classes

Activity 3 - Inspection [10 mins]

☞ *Collectively* Each team will have 10 minutes to inspect the draft Software Requirements Specification and Use Cases of another team.

♯	*identified issues, questions or comments*

Activity 4 - Discussion [10 mins]

☞ *Collectively* Identify / discuss open issues or changes that you need to address into your requirements, use cases and class models. At the end of the tutorial, each group should have a list of issues and changes that need to be addressed.

♯	*identified issues, questions or comments*