

## Software Engineering with Objects and Components

### Practical Work: Tutorial 6

This is your sixth tutorial. At this point you commence work on the second deliverable for SEOC. In this part of the practical you begin to work towards creating an implementation for your system. The goals of the practical are:

1. To begin preparation for creating deliverable 2.
2. To practice creating activity and statechart diagrams.
3. To consider how to integrate more than one activity diagram.

### Team Resources

- 1 instruction sheet (this page)
- 1 blank OHP slide
- 1 non-permanent OHP pen
- 20 minutes preparation time
- 10 minutes presentation time

### Instructions

You have 20 minutes to create an activity diagram for your system, to create a statechart diagram for one class of your system and to prepare a short presentation to the rest of the group. Each team will give its presentation in order as specified by the tutor. Your presentation should include: a brief summary of the use cases you have chosen to work on, the composite activity diagram for the chosen use cases, the statechart for one (of the) class(es) realising the use cases.

### Activities

#### An Activity Diagram [15mins]

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). For deliverable 2 you will work in the same teams as for deliverable 1. Your group should decide on two (related) use cases that you will work on. The aim of this practical is to gain experience of creating an activity diagram that captures the workflow of a use case and to gain experience of merging two activity diagrams to create a composite activity diagram merging the activity of two use cases.

- Each team should split into two sub-teams that will consider one use *high-priority* case each. *Individually* each member of the team considers the use case their sub-team is working on and begins to sketch an activity diagram for their use case. Draw your ideas together to create an agreed activity diagram for your chosen use case.

- *The whole team* should attempt to merge the two activity diagrams you have created to produce an activity diagram that captures the workflow of both use cases you are considering.
- *The whole team* writes *one* OHP slide containing their activity diagram.

### **A Statechart Diagram [5 mins]**

Each team should draw a statechart diagram for one of the classes involved in the realisation of the selected use cases. *The whole team* writes *one* OHP slide containing their statechart diagram.

### **Presentation [10 mins]**

Each team in turn is given 10 mins to present their sequence and communication diagrams.

## **Tutorial Outcomes**

By the end of this tutorial your group should

1. Gained some experience of creating an activity diagram to document the workflow in a use case.
2. Gained some experience in merging activity diagrams.
3. Have a preliminary activity diagram for your part of the system.
4. Gained some experience of creating a statechart diagram to document the behaviour of an object.
5. Your team should also take this opportunity to discuss how to organise for the creation of the second deliverable.

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