ICT284 Systems Analysis and Design: Tutorial 3

**Use case modelling**

**ABOUT THIS TUTORIAL**

In the previous tutorial we introduced the Conference Coordinator Information System (CCIS), a new information system that is being developed to handle the paper submission and review process for the inaugural Conference on Green IT. As part of project initiation we considered the scope and requirements for the new system in general terms. In today’s tutorial, you will begin to go further into analysis by identifying the functional requirements for the new system using **use case modelling**. You will gain practice with both the user goal technique and the event decomposition technique for identifying use cases, and finally represent them in a **use case diagram**.

**LEARNING OUTCOMES FOR THIS TUTORIAL**

**After completing this tutorial you should be able to:**

* Identify use cases using the user goal technique
* Identify use cases using the event decomposition technique
* Document use cases using a brief description
* Draw use case diagrams using Microsoft Visio

**This tutorial addresses the following learning outcomes of the unit:**

LO 4. Model system requirements using UML, including use case diagrams and descriptions, activity diagrams and domain model class diagrams

LO 10. Present systems analysis and design documentation in an appropriate, consistent and professional manner

**REFERENCE MATERIAL**

* Topic 3 lecture notes and recordings
* Satzinger, Jackson & Burd, Chapter 3
* Conference Coordinator Information System (on LMS)

**QUIZ**

This week’s quiz includes questions relating to material covered in this tutorial and associated lecture topic.

**Use case modelling for CCIS**

As part of the systems analysis for the CCIS project, you decide to perform use case modelling to clarify the functional requirements.

As you go through this exercise, remember to look for use cases that correspond to a single identifiable task or *elementary business process* (EBP).

1. Use the **user goal technique** to identify use cases for the main users of the CCIS. List them in a table with the headings: **Use case name, Use case description, Actors.**   
   Remember to name your use cases descriptively using the *verb-noun* form, and make sure your brief descriptions are clear and concise.
2. Use the **event decomposition technique** to see if you find any additional use cases. Add them to your list in a table with the headings**: Event, Event type, Use case name, Use case Description, Actors.**

After completing these steps you should have a complete list of use cases for the CCIS. Note any areas you are unsure about as we will revisit this list after carrying out further analysis of the system.

1. Using your list of use cases, draw a **use case diagram**ON PAPER. It should show the use cases, the actors that are associated with the use cases, and the automation boundary of the system.
2. Use Microsoft Visio (or your chosen drawing tool) to draw your use case diagram. Use the **UML Use Case** shapes to draw the required shapes for actors and use cases. You can draw only a subset if you prefer; for example all the use cases pertaining to reviewers.
3. Remember to include a **title** and a **legend** to your diagram. Save your work.

*(NB: the following instructions are for Visio 2010. If you are using a different version, make a note of where there are differences)*

* Open Visio and choose the UML Model Diagram template:   
  **New, Software and Database, UML Model Diagram**
* Then choose the UML Use Case shapes:  
  **Software and Database, Software, UML Use Case**
* Enter the names for the actors and use cases using Properties or double-click on the object. Don’t worry about the other options.
* If end labels and multiplicity labels are shown the connector (little asterisks) you can alter the display options to stop this:

Right-click on the connector and choose **Shape Display Options** from the menu.

Clear the check boxes for the end multiplicities, names and visibility.

Check the boxes to apply the setting to new shapes.

**REVIEW: WHAT SHOULD I NOW BE ABLE TO DO?**

* Identify use cases using the user goal technique
* Identify use cases using the event decomposition technique
* Document use cases using a brief description
* Draw use case diagrams using Microsoft Visio

**WHAT’S NEXT?**

In the next tutorial, you’ll continue to discover and represent the requirements for the new CCIS, by performing domain class modelling to identify the information that will need to be recorded about the system.

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| --- | --- | --- |
| USE CASE | Brief Description | Actor |
| Submit Research Paper | The use case describes the event of a researcher submitting a copy of his research paper to be reviewed by the editor and reviewer before being accepted into the conference | Researchers/Participants |
| Review Research Paper | The use case describes the event of reviewers viewing the research paper and attaching their review comments to the submitted research paper before forwarding it to the editor | Reviewer |
| Approve Research Paper | The use case describes the event of the approval/rejection of the research paper based on the decision of the editor. | Editor |
| Manage Conference Schedule | The use case describes the event where the editor can add, remove or update a conference | Editor |
| View Conference Schedule | The use case describes the event where the Editor, Participants, Attendees can view the schedule of conferences along with the venue to take place, and diplay the list of papers and presenters. | Editor  Researchers/Participants  Attendees |
| Allocate Paper |  | Editor |
| View Paper |  | Editor, Reviewer, Chairperson |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Event | Event  Type | Use Case Name | Description | Actor |
| More than 3 weeks after paper was allocated | Temporal | Remind Reviewers | The uses case describes the event where the system reminds the reviewers to submit their research paper review comments | None |
| Editor has approved/rejected paper based on his/her decision | State | Notify Researcher | The use case describes the event where the system notifies the researchers whether or not their research paper has been approved or rejected by the editor. | None |
| Reviewr is allocated 4 papers | State | Flag reviewer as unavailable |  | None |