Object-Oriented Technology and UML

Experiment 2

Use case modeling

Objectives

- Become more familiar with the use of UML tools such as Rational Rose

- Be familiar with use case using Rational Rose

- Gain a preliminary understanding of how to find actors

- Gain a preliminary understanding of how to find use cases

Case one: Library management system (Personal work)

●Functional requirements of the system mainly include

➢Borrower can query and appointment books online

➢Borrower can borrow and return books

➢The librarian can handle requests to borrow and return books

➢System administrators can perform maintenance on system data, such as add, delete and update catalogs, add, delete and update borrower accounts, add and delete books

Case two: Human resource management system (Personal work)

- Human resource management system in a company is generally available to the company employees, cadres of human resource management and company leaders
- System should preserve the employees' personal information, including name, gender, date of birth, qualifications and degrees, job position, appointment time, job tenure, salary, reward and punishment records, performance and other information
- The basic function of the system should include
  - Basic information of personnel management, including personnel changes and appointments
  - Management of reward and punishment records
  - Management of salary information
  - Management of performance information
- In addition, the system will also provide relevant information to the financial system
- Please take into account the functional requirements that may be involved in the system as much as possible

Case three: Research project management system (Personal work)

- IT companies often provide opportunities for cooperation projects for related research institutions, and the projects are managed by research project management system
  - Registration and verification of bid institutions
  - Application and verification project
  - Project appraisal, mid-term assessment, and final project measurement
- Description
  - Experts are responsible for the project appraisal
  - Please take into account the functional requirements that may be involved in the system as much as possible

Tips: General process of use case modeling

- Find out the actors

- Capture functional requirements of system

- Combine functional requirements, find out use cases

- Find out relations among actors and use cases

- Draw the use case diagram

- Refine the use case description

Tips: How to find actors

- Who will supply, use, or remove information?
- Who will use this functionality?
- Who is interested in a certain requirement?
- Where in the organization is the system used?
- Who will support and maintain the system?
- What are the system's external resources?
- What other systems will need to interact with this one?

Tips: How to find use cases

- To consider what each actor requires of the system.
- For each actor, human or not, ask yourself the following questions
  - What are the primary tasks the actor wants the system to perform?
  - Will the actor create, store, change, remove, or read data in the system?
  - Will the actor need to inform the system about sudden, external changes?
  - Does the actor need to be informed about certain occurrences in the system?
  - Will the actor perform a system start-up or shutdown?

Experiment requirements

● Careful analysis the above cases, select at least one of the above cases, establish appropriate use case model

● For each case, select at least one important use case to analysis and describe the use case in detail, the description results could be attached to the use case model

Please send me the work

- Clear use case models as well as descriptions of key use cases
- Please send your completed model built on the mdl file
- Please submit your work before 19:00 on Saturday
- Requirements of report and email
  - Email: seuuml@qq.com
  - Email title: "Student ID Name UML EX2 Use case"
- Attachment (Please do not compress)
  - Report name: "Student ID Name UML EX2 Use case + case name"
- Please be sure to send the report according to the specified rules, otherwise, we will not receive your report

Please consider the following questions

- When performing use case modeling using Rational Rose, which views could we use to draw use case diagrams? What is the difference?

- For the system to be built, how to get use cases?

- How to grasp the granularity of use cases?

- If you need to describe the realization of use cases, how to do?