

# Object-Oriented Technology and UML

## Experiment Three Class Diagram Modeling

# Objectives

- Based on the use case models constructed in the previous experiments, conducted the class diagram modeling and provide the basis for further design
- Be familiar with the general process of modeling class diagram
- Become more familiar with the use of UML tools such as Rational Rose, and master the representation of common modeling elements in class diagram

# Case one: Library management system (Personal work)

- Be familiar with the representation and use of modeling elements and their relationships in class diagram
- Based on the use case model of **Library management system** constructed in the previous experiment, draw class diagrams of **Library management system**

## Case two: Human resource management system (Personal work)

- Be familiar with the representation and use of modeling elements and their relationships in class diagram
- Based on the use case model of **Human resource management system** constructed in the previous experiment, draw class diagrams of **Human resource management system**

## Case three: Research project management system (Personal work)

- Be familiar with the representation and use of modeling elements and their relationships in class diagram
- Based on the use case model of **Research project management system** constructed in the previous experiment, draw class diagrams of **Research project management system**

# Experiment requirements

- Case one, two and three are all personal works, you should **select at least one of the above cases**
- Please submit your work before 19:00 on Saturday
- Requirements of report and email
  - Email: seuuml@qq.com
  - Email title: "Student ID Name UML EX3 Class diagram"
- Attachment (Please do not compress)
  - Report name: "Student ID Name UML EX3 Class diagram"
- Please be sure to send the report according to the specified rules, otherwise, we will not receive your report

# Notes

- Gain the understanding of relationships between classes during the class diagram modeling process
- Experience the difference of three perspectives of class diagram during the class diagram modeling process
- Determination of classes is a critical and relatively difficult task, which require careful consideration during the modeling process
- Completion of class diagram modeling is only one result. I hope you can understand the details of the class diagram modeling during the process, the process is more important

# Please consider the following questions

- Which view could class diagram be created in?
- Which stereotypes of class could be supported in Rational Rose?
- Which relationships are existing between classes? Could these relationships be created in Rational Rose?
- Is the actor (in use case modeling) a kind of class?



# How To Find Classes

- Determine candidate classes from the nouns of use case description
- Use CRC (Class responsibility collaborator) method to discover classes
- Use the division of Boundary, Control, and Entity Classes
- Determine classes according to design patterns
- Find classes under the guidance of the software development process

# Steps Of Class Diagram Modeling

- Domain analysis, determine system requirements
- Determine classes and their responsibility, determine the attributes and operations
- Initially determine the relationships between classes
- Refine the relationships between classes
- Draw the class diagram, and give the necessary textual description