06 Mid-Term Review

Introduction to OOA OOD and UML

2022 Spring

College of Information Science and Engineering

Ritsumeikan University

Yu YAN

The Mid-Term Exam

- Basic Information:
  - **Date:** 2022/05/26 10:40 ~ 12:10
  - **Location:** F101 (Students overseas will take the exam via Zoom)
  - **Seat:** Your seat will be fixed based on a seat chart. The seat chart will be shown at the beginning of the exam. Please make sure that you sit at the correct seat.
  - **Time:** 5 + 85 minutes (5 minutes for miscellaneous + 85 minutes for the exam)
  - **Format:** It will be an open-book exam. It means you can search the information that you need from the slides, reference books and the Internet during the exam hours.
  - **Do not be late for the exam. If you arrive the classroom 20 minutes later than the starts of the exam (later than 11:00), you will be not allowed to join the exam.**
  - **You are allowed to leave the classroom early if you finish all questions and submit your answer sheet. However, you are not allowed to leave the classroom by 11:50 (more than 20 minutes before the exam ends.)**

The Mid-Term Exam

- About the Exam Tasks:
  - ✓ **Amount:** there will be 10 questions including “Fill-in-blanks” tasks, “Diagram designing” tasks, and “Multiple choices” tasks. The 10 questions include 9 “required questions” and 1 “additional question”.
  - ✓ **Required questions:** they are the questions that are required to be finished during the exam hours. The maximal points for the “required questions” are 40 points.
  - ✓ **Additional question:** it is the question that is not required to be finished during the exam hours. However, if you can finish it during the exam hours, you can get maximal 15 bonus points for your final grade.

The Mid-Term Exam

- Admin Requirements:
  - **Make sure you bring your student ID card and your computer on the exam day.**
  - **Make sure you have installed the "Astah" in your computer and you can draw a UML diagram with the "Astah" on the exam day.**
  - The only electronical device that is allowed to be used during the exam hours is your computer. Other devices such as, "smart phone", "ipad", are not allowed to be used.
  - Only Manaba +R is allowed to be used for downloading and submitting your answer sheet. Other communication software such as, "email", "instant message software (Line, Wechat, Skype, Slack, Messenger, Whatsapp, Telegram, Zoom, QQ, etc.)", are not allowed to be used during the exam hours.
  - Any behaviors communicating with your classmates, looking at others' computers, copying and sharing answers with others will be regarded as "Cheating".
  - If you are discovered to do any prohibited behaviors above during the exam hours, you will be asked to leave the classroom immediately and you will automatically get a "F" in your final grade.
  - If you don't join the exam without any reasons, you will get a "F" in your final grade.

Review of Week 02

- The definition of an object
  - ✓ Objects in Real World and Objects in Software Engineering
  - ✓ States/Attributes and Behaviors
- Depict an object via Astah Pro
- The relationships between two objects
  - ✓ Associations, aggregations and compositions
  - ✓ Navigatable / non-navigatable links
- Depict links via Astah Pro
- Exercise 02

Review of Week 03

- The definition of a class
- Relationships among classes
  - ✓ Hierarchy and Inheritance
- Essential elelements of a class
  - ✓ Class name, Fields, Constructors, Messages, Methods, Comments
- Depict a class via Astah Pro
- Depict a class herarchy via Astah Pro
  - ✓ Specialization/Generalization, Parent/Child, Superclass/subclass, Base/Derived
- Exercise 03

Review of Week 04

- The definition of Inheritance
  - ✓ Inheritance allows that a class gets some of its characteristics from a parent class and then adds unique features of its own
- Abstract and concrete classes
  - ✓ An abstract method and concrete an abstract method
- Depict Inheritance via Astah Pro
- Exercise 04

Review of Week 05

- Type systems stop us misusing values by forcing us to declare how we intend to use a value
  - ✓ Static type system abuses at compile time, while a dynamic type sytem waits until run time.
- Polymorphism enables a variable to hold different types of value and a message to be associated with more than one method.
  - ✓ Polymophic variables and messages
- Casting between object types:
  - ✓ with implicit casting, the compiler can automatically convet between types of variable;
  - ✓ with explicit casting, the programmer must specify types
- The deadline for Exercise 05 has been extended to 05/26 9:00