

國立雲林科技大學資訊管理系
108 學年度第 1 學期博士班資格考
科目：軟體工程

時間：4 小時 (Closed book)

作答時，請注意各題之比例配分，並清楚標示題號

第一部分:必選題 50 分(共 5 題，每題 10 分)

1. What is the difference between a scenario and a use case in modeling with UML? When do you use each construct?
2. Consider your watch as a system and set the time 2 minutes ahead. Write down each interaction between you and your watch as a scenario. Record all interactions, including any feedback the watch provides you.
3. Consider a sorted list. Write an invariant in OCL denoting that the elements of the list are sorted.
4. What is a spiral view of the requirements engineering process? The activities are organized as an iterative process around a spiral, with the output being a system requirements document.
5. What is the Service-Oriented Architecture(SOA)? What is the service engineering process?

第二部分:可選題 50 分(3 選 2，每題 25 分)

1. Develop a sequence diagram showing the interactions involved when a student registers for a course in a university. Courses may have limited enrollment, so the registration process must include checks that places are available. Assume that the student accesses an electronic course catalog to find out about available courses.
2. Answer the following questions:
 - a. Consider a file system with a graphical user interface, such as Macintosh' s Finder, Microsoft' s Windows Explorer, or Linux' s KDE. The following objects were identified from a use case describing how to copy a file from a

floppy disk to a hard disk: File, Icon, TrashCan, Folder, Disk, Pointer. Specify which are entity objects, which are boundary objects, and which are control objects.

- b. Identify the attributes of each object that are relevant to this scenario (copying a file from a floppy disk to a hard disk). Also consider the exception cases “There is already a file with that name in the folder” and “There is no more space on disk.”
3. Model as classes the activities of Figure 15-2 and the work products of Figure 15-4 and draw a UML class diagram depicting the relationships between activities and work products.

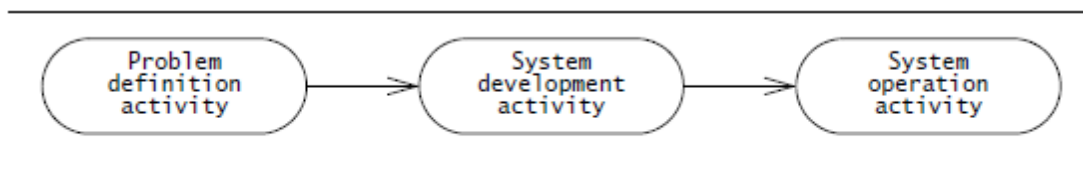


Figure 15-2 Simple life cycle for software development (UML activity diagram).

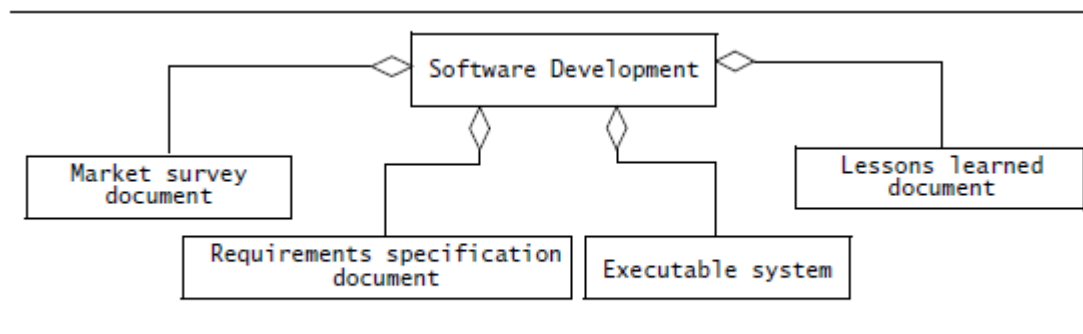


Figure 15-4 Entity-centered view of software development (UML class diagram).