PRINCE OF SONGKLA UNIVERSITY

FACULTY OF ENGINEERING
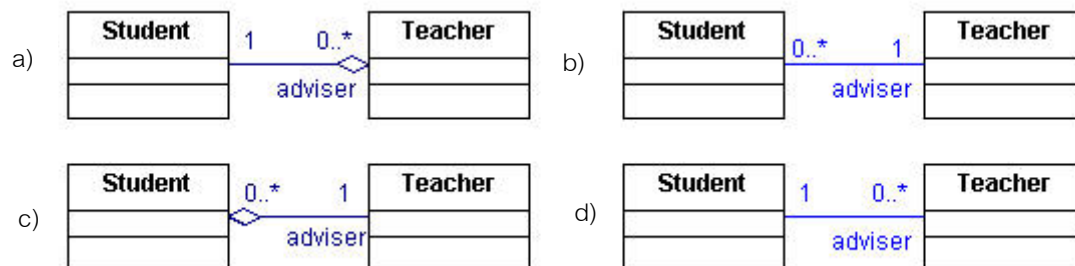

Final Examination Semester II :   Academic Year : 2002

Date : 20 February 2003   Time : 9.00 – 11.00   Room : R300

Subject : 240-538 Embedded and Real Time Systems

Instruction:

- Make sure that there are **6 questions (30 points)** in your exam paper.
- This exam is **closed book** and you have 2 hours to complete your exam.
- All of your answers can be written either in Thai or English.
- Dictionary and Calculator are allowed.
- No palm pilots or other hand held computers are allowed.

1. From the given information in Document 1 (Title: Symbian OS –the Open Mobile Phone Operating System), define the function of "context switching" found in most real time operating system, and describe how this context switching is normally used in a virtual machine (VM) environment of Symbian OS. *(10 points)*

2. Give reasons to support why typical Linux is not suitable to meet the timing requirements of a hard real time system. Also, describe possible approaches that can apply to Linux to become a real time operating system. *(10 points)*
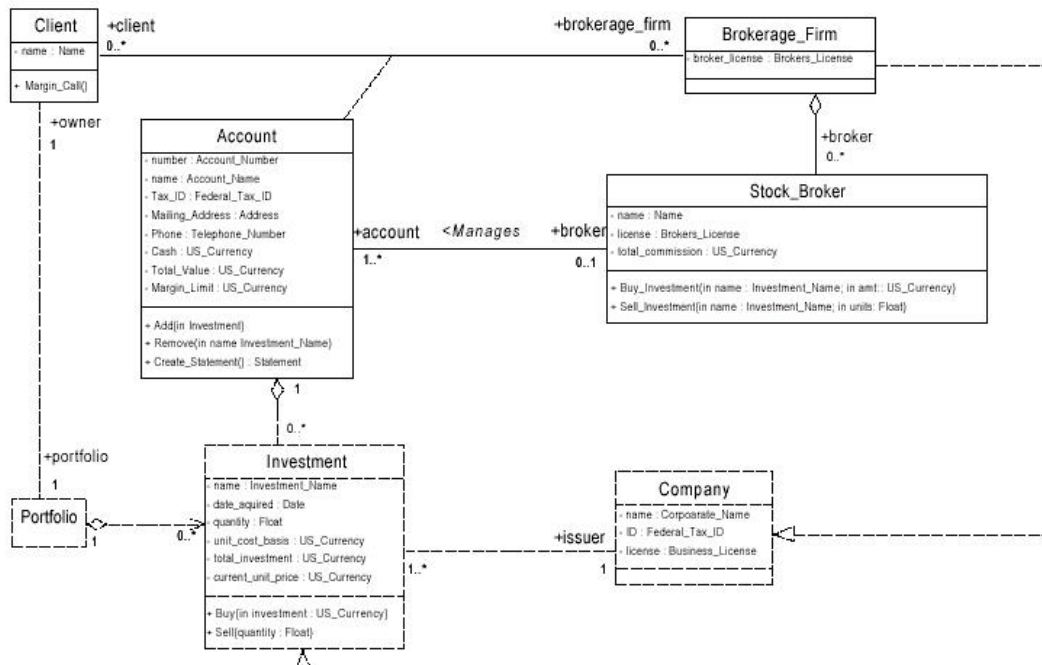

Unified Modeling Language (UML)

3. Explain clearly benefits you would gain when applying UML for your application development. *(3 points)*

4. What is the relationship between actors and Use Cases in a UML Use Case Diagram *(1 point)*

5. From the information as follows: "Every student at a college will be advised by one teacher. Some teachers advise many students, and some advise none".
   Which of the following class diagrams most clearly represents this student-teacher relationship? *(1 point)*

6. Select an answer for the following questions *(5 points)*

a) UML is a visual programming language.   True   False

b) A basic UML feature is a generation of code from   True   False
   model into programming language.

c) In UML, all Collaboration Diagrams are Interaction Diagrams.   True   False

d) In UML, Collaboration Diagrams and Sequence Diagrams   True   False
   show exactly the same information.

e) The Static Structure Diagram below is a   Class   Object
                                                     Diagram   Diagram

Suntorn Witosurapot

February 2003