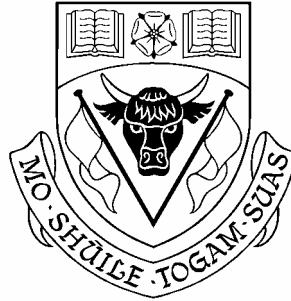


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SENG 609.23
5/4/2004



University of Calgary
Department of Electrical and Computer Engineering

SENG 609.23: Object Oriented Analysis and Design
Behrouz Homayoun Far

Evaluation Test (5/4/2004)
19:30 – 20:30 PM

Answers

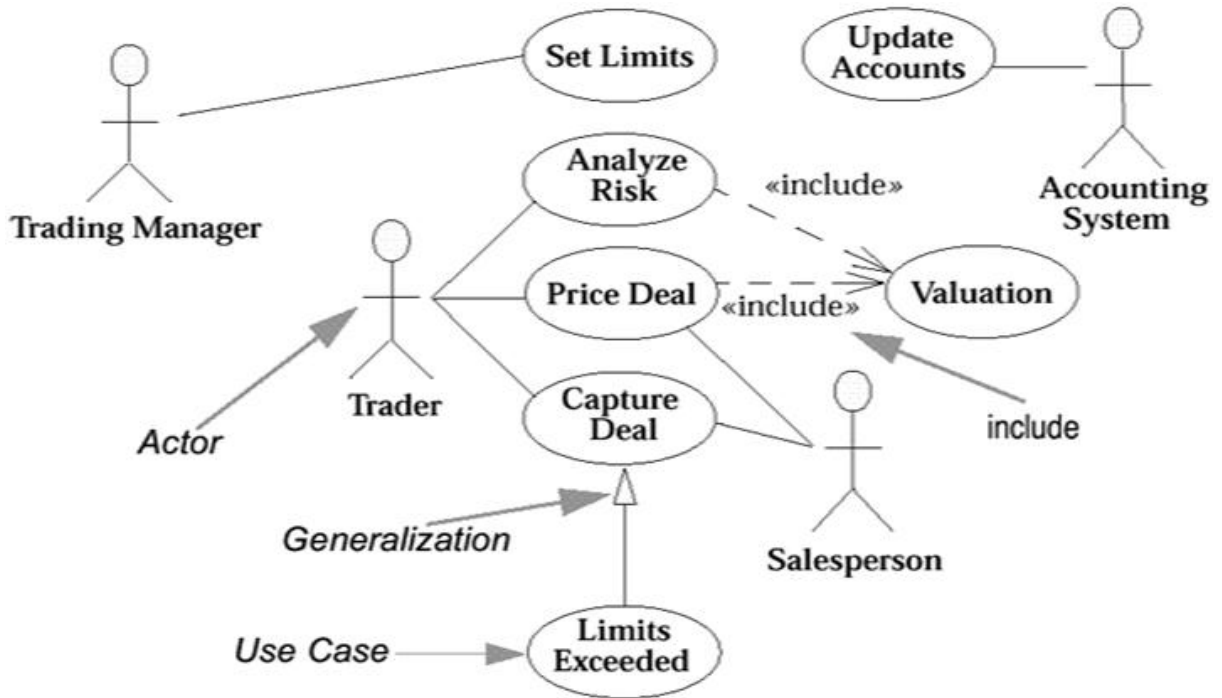
Instructions:

1. This booklet has 6 pages including this cover page.
2. The examination is closed-book.
3. Please write your name and student ID number on all pages of this booklet. Pages with no name or ID number will not be marked.
4. The maximum mark in this exam is 20. The mark for each question is indicated next to the question.
5. There are no selective questions. Please answer all questions.
6. Please write your answers on the same sheet below each question. You may use both front and back sides of the sheets. If you need extra sheets please ask the supervisor for help.
7. Absence or failing to hand in this booklet will be treated as zero mark.

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5/4/2004

1. For the following use-case diagram shown below write the name of each item in the box (3 points).



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SENG 609.23
5/4/2004

2. For the diagram shown below write the name of each item in the box (3 points).

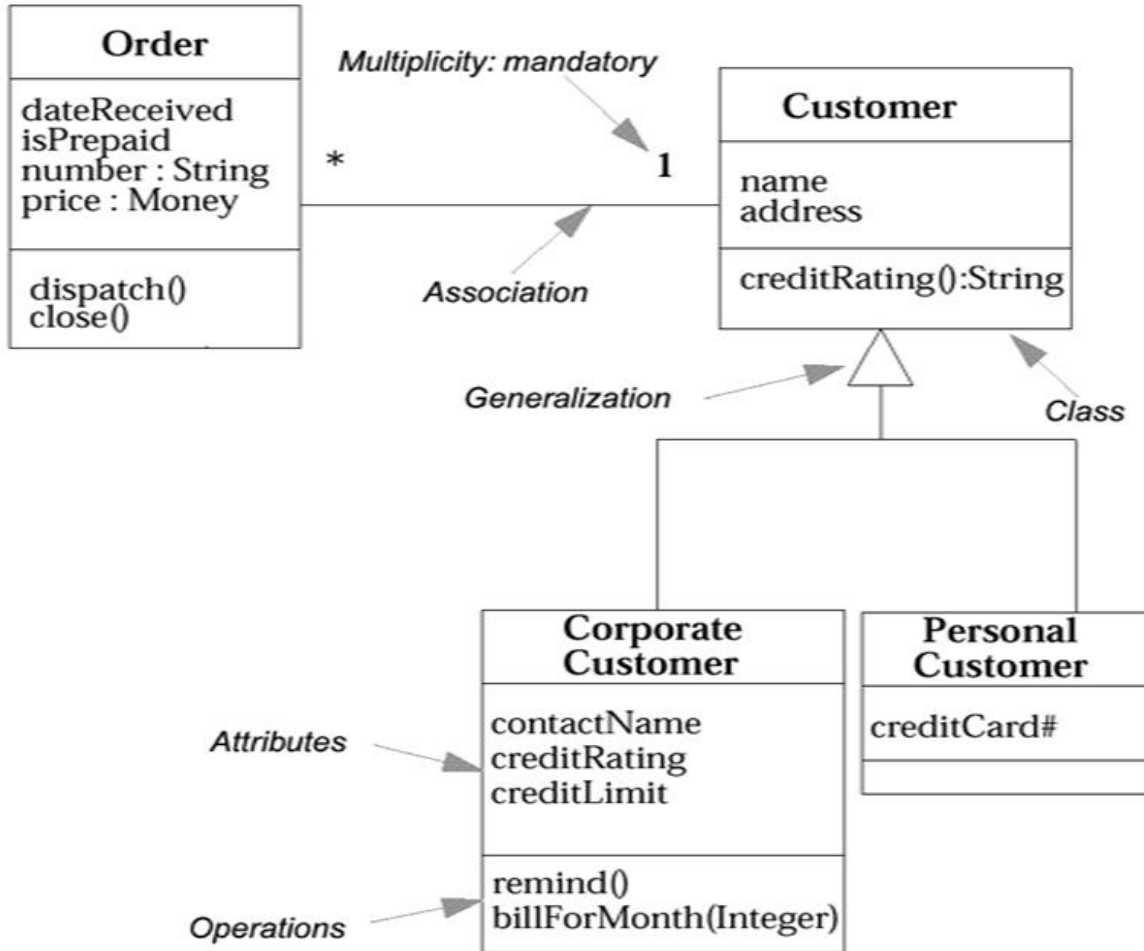


Diagram name: *Class diagram*

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5/4/2004

3. For the diagram shown below write the name of each item in the box (3 points).

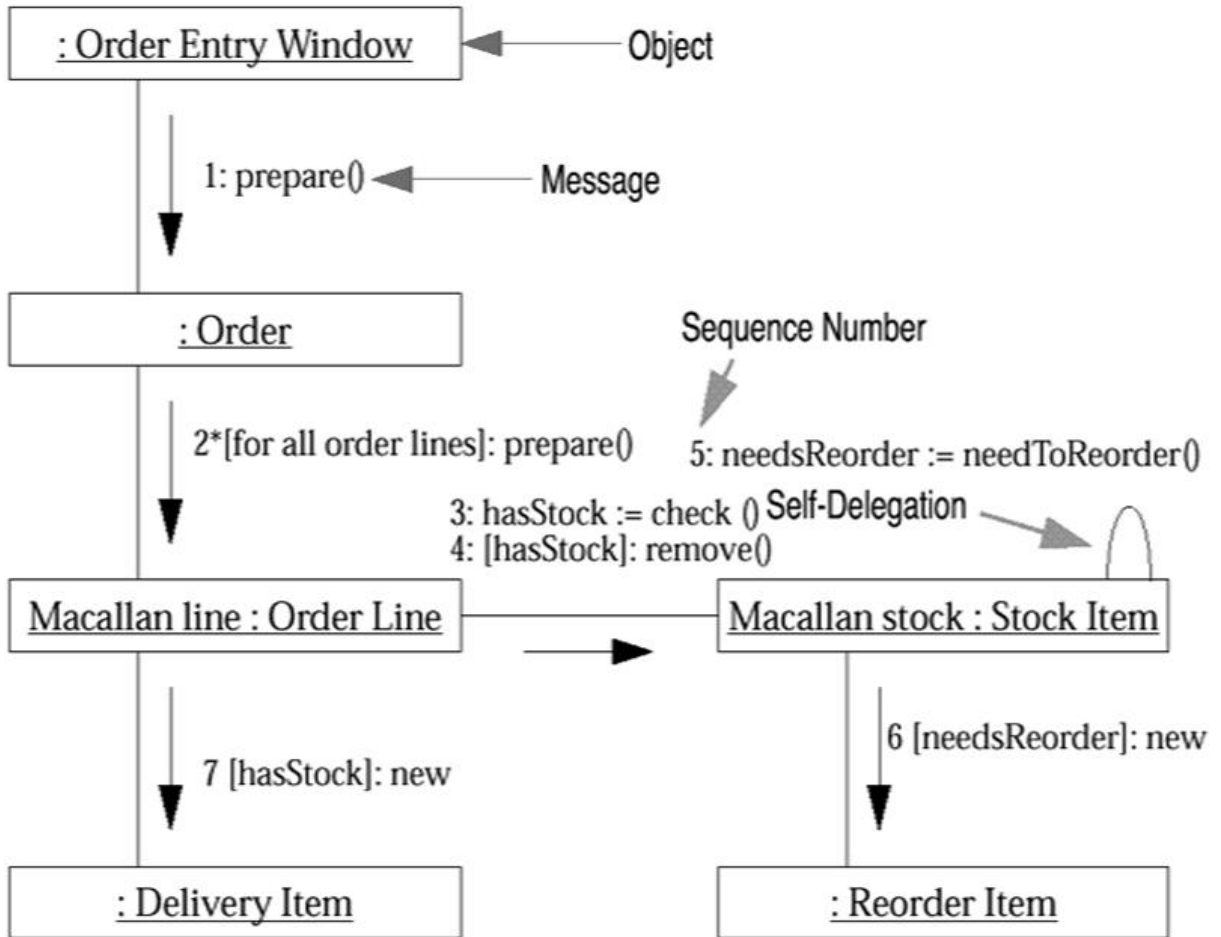


Diagram name: *Collaboration diagram*

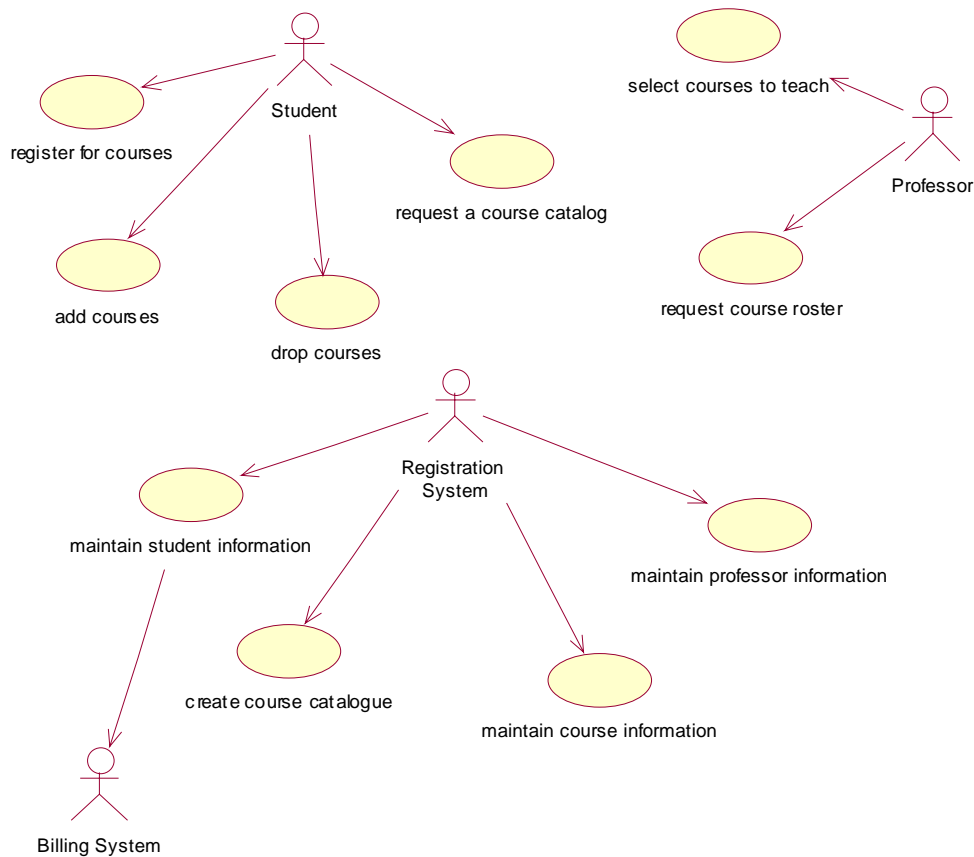
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5/4/2004

4. Identify Actors and Use cases for the following problem statement and develop Use case diagram (6 points).

Course Registration System

At the beginning of each semester, students may request a course catalogue containing a list of course offerings for the semester. In addition, Course Catalogue includes information such as professor, department and prerequisites. The new system will allow students to select four course offerings for the coming semester. In addition, each student will indicate two alternative choices. No course offering will have more than ten students or fewer than three students. The system will cancel the course with fewer than three students. After the registration process, the registration system sends information to the billing system. The billing system will bill the student for the semester. The system will allow professors to indicate the teaching courses and to see the students signed up for the courses. For each semester, students can change the schedule during a period of time. Students will access the system during this time to add or drop courses.



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SENG 609.23
5/4/2004

5. Assuming one of the use case for the above problem statement is “request a course catalogue” write the Basic flow and Alternative flows. (5 points)

Basic flow

1. Student enters username and password
2. System verifies username and password
3. if password is valid then
4. system prompts the student to select the semester
5. endif
6. student selects the semester
7. if semester is valid then
8. system displays various options
9. endif
10. student selects ‘VIEW’ option
11. student enters course number
12. if course number is valid then
13. system displays a course catalog
14. endif
15. use case ends

Alternative flow

1. if password is invalid then
2. student re-enters a password
3. endif
4. repeat step1 to 3 for 3 times
5. use case ends
6. if semester is invalid then
7. student re-enters the semester
8. endif
9. repeat step 6 to 8 until semester is valid
10. if course number is invalid then
11. student re-enters the course number
12. endif
13. repeat step 11 to 13 until course number is valid