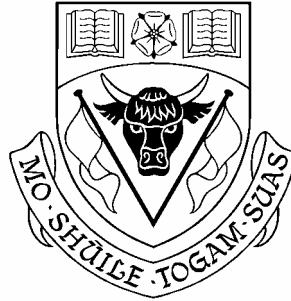


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SENG 609.23  
5/4/2004



**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

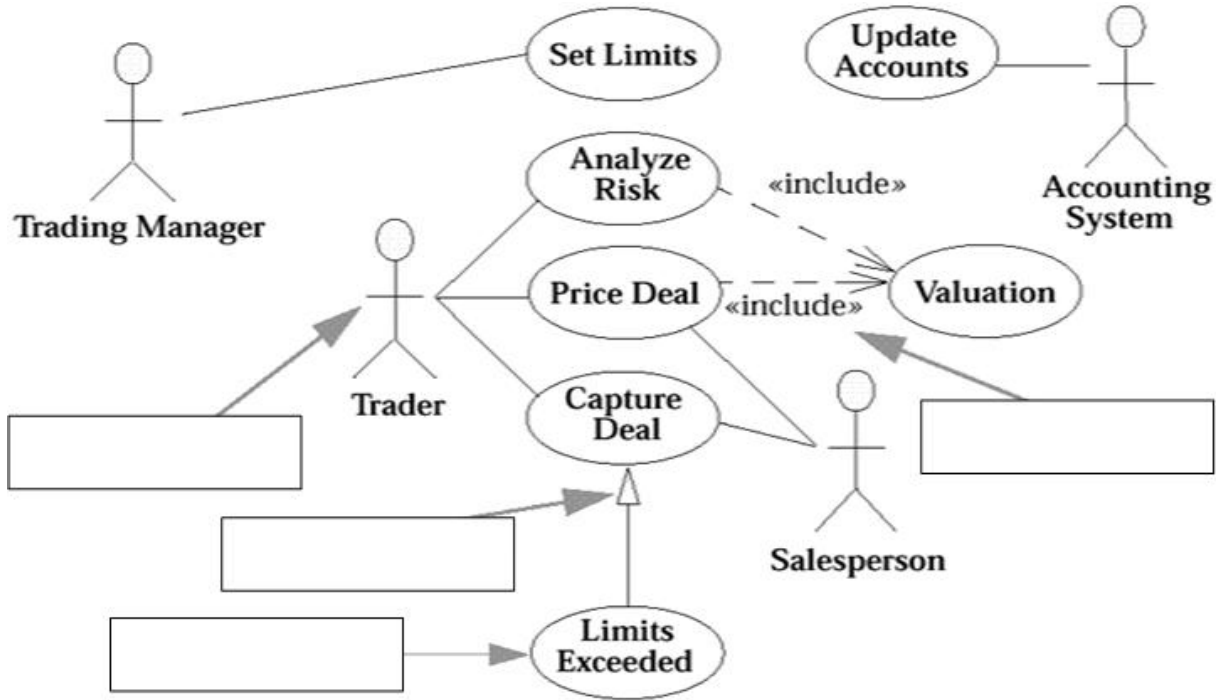
**Instructions:**

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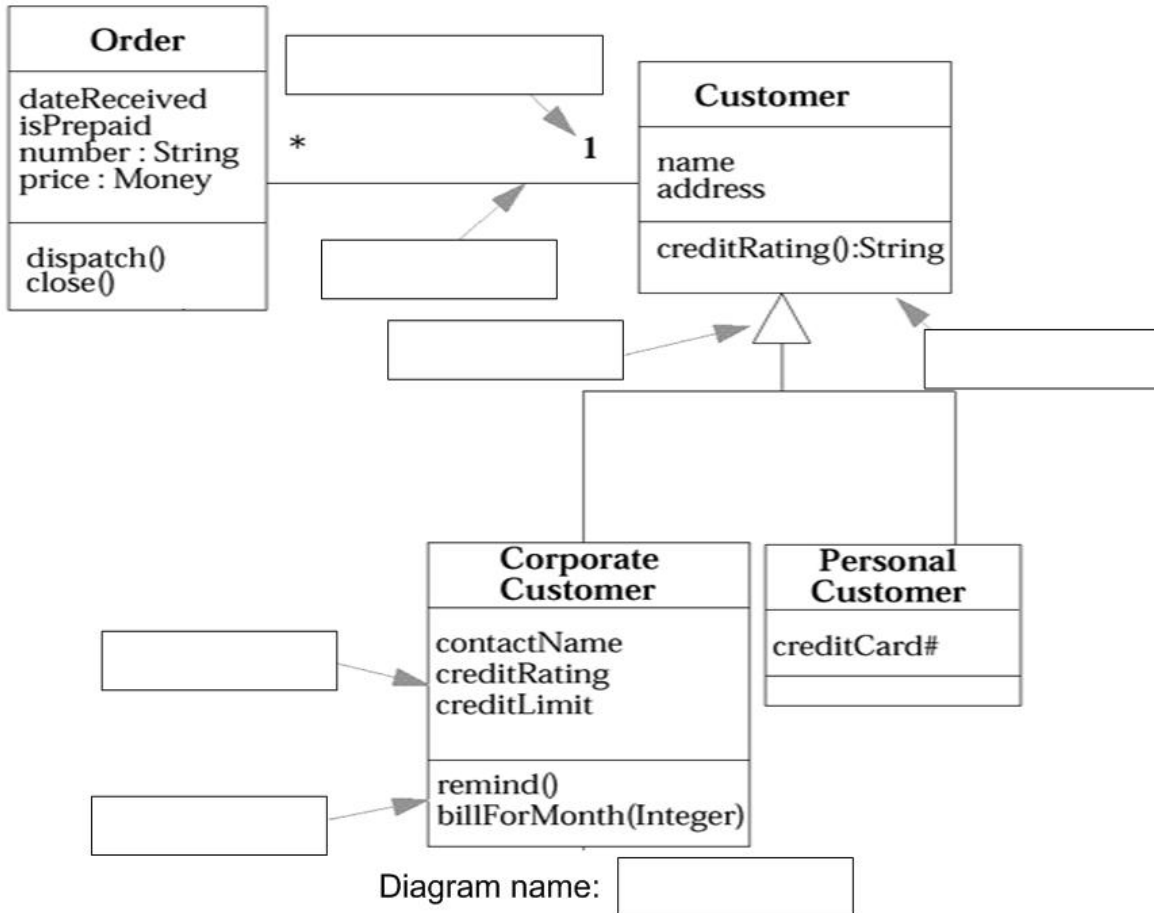
1. For the following use-case diagram shown below write the name of each item in the box (3 points).



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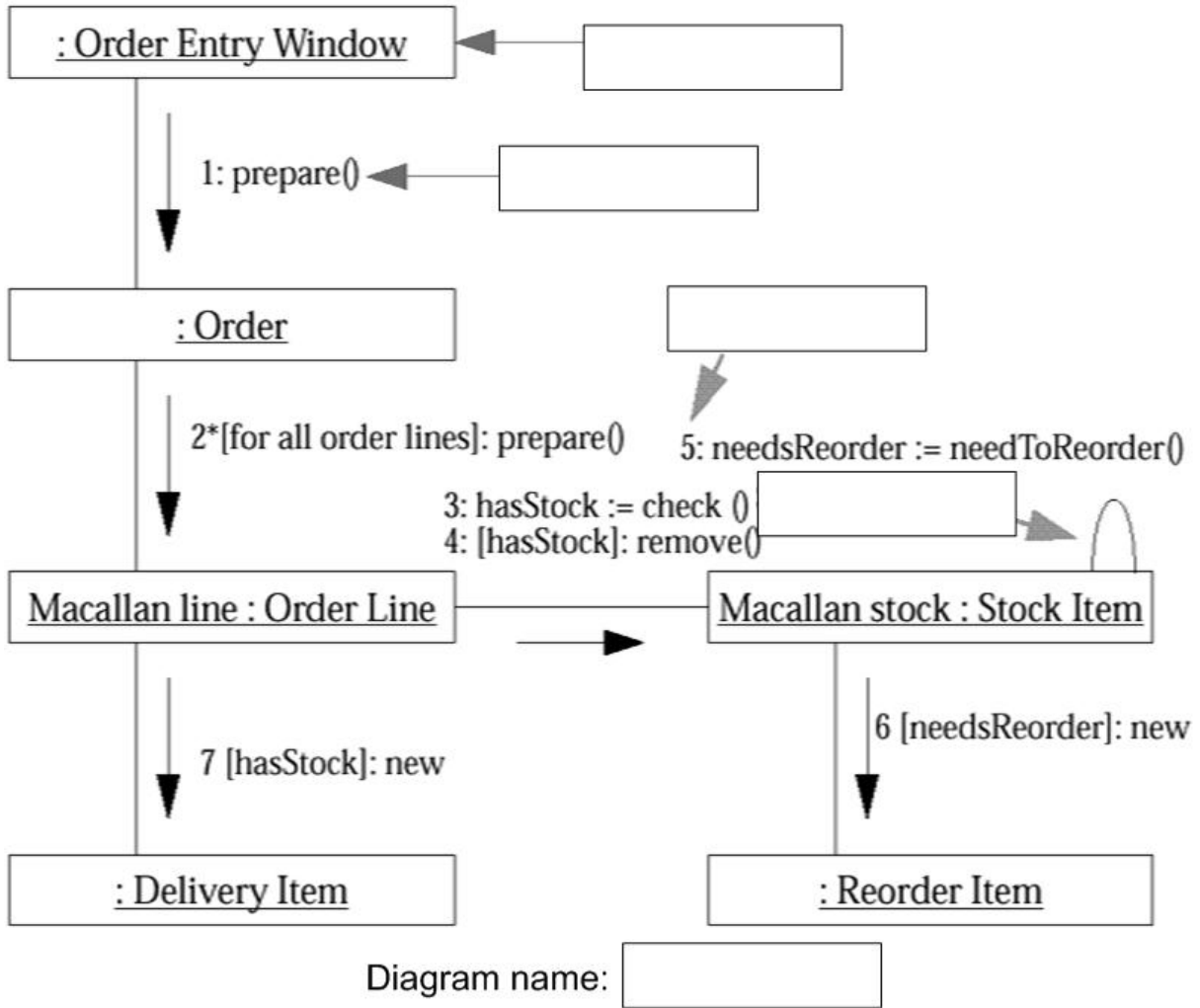
2. For the diagram shown below write the name of each item in the box (3 points).



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



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**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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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)

**Approximate time taken to complete Question 4:**

**Approximate time taken to complete Question 5:**