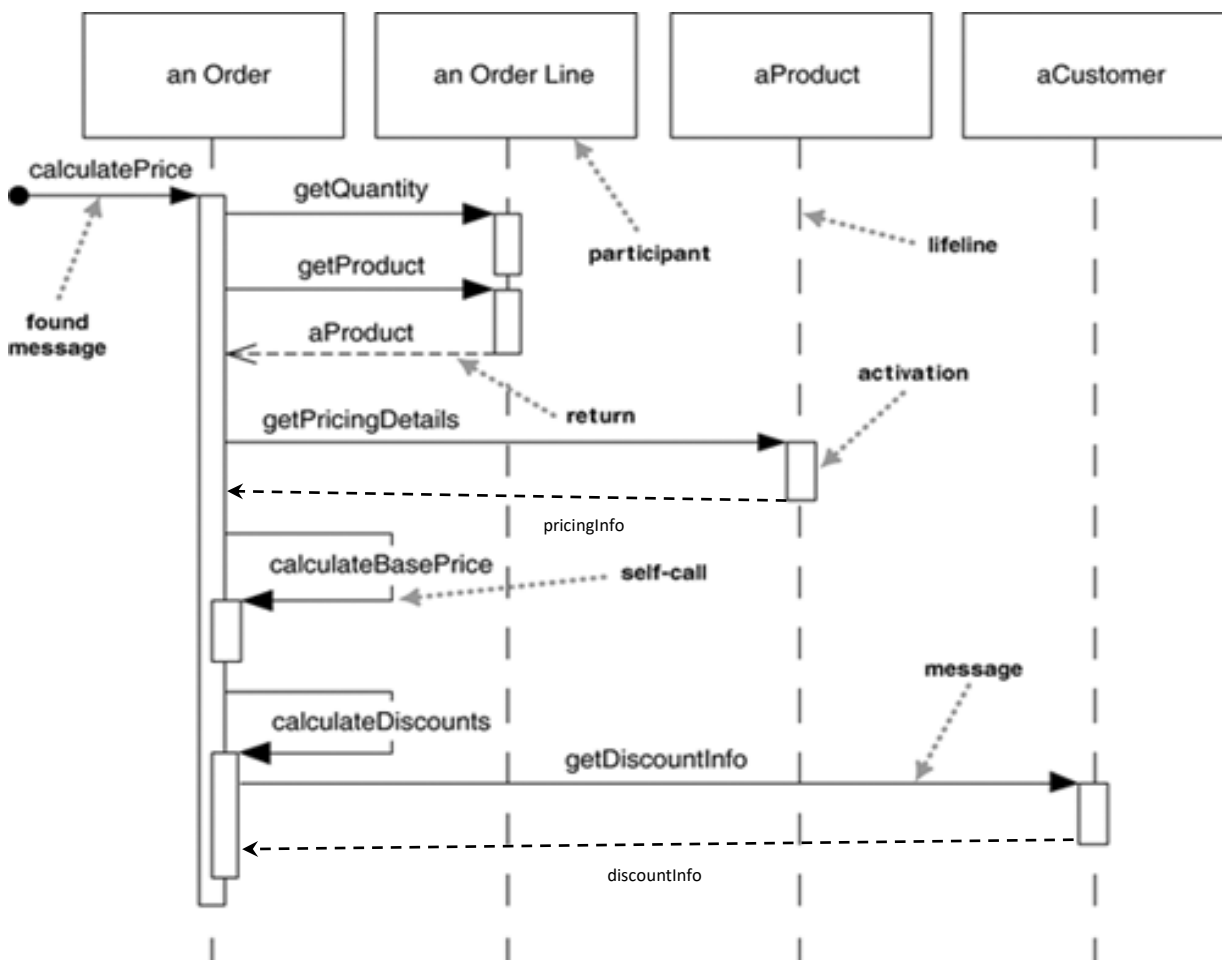


RULES:

- 1- This is an open-book exam; you may access class materials and slides during the exam, however you are NOT allowed to communicate and collaborate with other students and you are NOT allowed receive help from another person.
- 2- You need to write your answers to a white A4 size papers by your handwriting ONLY! Printer outputs will not be allowed.
- 3- You need to write your full name, your number, department, class code and date – time on the top of all of your answer papers.
- 4- In the first page, after writing the information in (3), please write the following statement and sign: **“By signing this examination, I acknowledge my responsibility and commitment to the rules stated in the question paper and I affirm that I will not give or receive any unauthorized help on this exam, and that all work will be my own.”** After writing this statement and signing you can start answering questions.
- 5- Answer questions in the given order.
- 6- When you finish scan all your answer papers in to a single pdf named “firstname_lastname.pdf” and upload the pdf to <https://ues.marmara.edu.tr/>
- 7- If you experience any technical problems, you can write a message to classroom.

Points = {1:40, 2:40, 3:20}

1. Draw fully dressed UML Class Diagram (DCD) of the following UML sequence diagram (DSD). Infer attributes and method input/output parameters based on visibility! Please note that in order for an object to send a message to another object, sender must have visibility to receiver. In this question you can only use attribute and parameter level visibilities. In order to get any points all attribute and parameter types and access identifiers should be given appropriately. Do not use primitive attribute or parameter types. Hint: Class names: Order, OrderLine, Product, Customer.



2. Write the java code for the DSD given in the first question and DCD that you create. You need to provide class definitions, attribute definitions, and method definitions for all classes and methods in DSD. Provide implementations for methods that include a method call to another object. Omit implementations for other methods. For example there will be no implementation for `getPricingDetails()` method, you need to provide just the definition. Infer class attributes and method parameters based on visibility needed for sending messages between objects in the above DSD. I need to clearly see the method calls and visibility in your code. Hint: There will be 4 classes, 7 methods, probably 2 or 3 additional reference types as attributes or method parameters. Do not include additional complexity. (Maximum of two page)
3. Write your group number and explain your individual contribution to your Java project iteration 1. (Maximum of one page)