**SE exam - 19th of June, 2015**

1. A Hotel has different types of rooms. When a potential client intents to reserve a room, then it specifies the interval [from:Date ... to:Date] and the type of room he wants to reserve. On the hotel site, each type of room has a textual description. A software system receives the client request and answer if the reservation is possible. In other words, if in the interval mentioned there is at least a room of the type mentioned not occupied.
   1. By means of a UML class diagram, please specify a UML model supporting the above mentioned functionality. 2 pt
   2. in the context of the Hotel class, please specify, using OCL, an observer returning a Boolean value; (true if the reservation is possible and false if it's not). In the context of the Reservation class there is implemented an observer isNotReserved(cf:Date, ct:Date):Boolean that returns true if the room is not reserved any day in the interval[cf:Date ... ctDate]. 1 pt
2. Please mention the kind of the diagram bellow, naming the UML concepts used in this diagram and explain the behavior described/specified. 1 pt



1. What describes the analysis model and what describes the design model of a problem? What kind of correspondence is there between the above mentioned models? Which of them is the most stable and why? 1 pt
2. In the context of optimizing the design model:
   1. What do you mean by object collapsing? Please exemplify your description by means of a class diagram. 1 pt
   2. What do you mean by delaying expensive computations? Please exemplify your description by means of a class diagram and mention the design pattern used. 1.5 pt
3. What do you mean .by integration testing? Please mention the main goal of integration testing. Please mention the testing strategies you know and describe any two of them. 1.5 pt

Total 9 pt

1 pt by default