Departamento de Informática, FCT/UNL
Software Engineering 2016/2017
First Test Example
28/4/2017

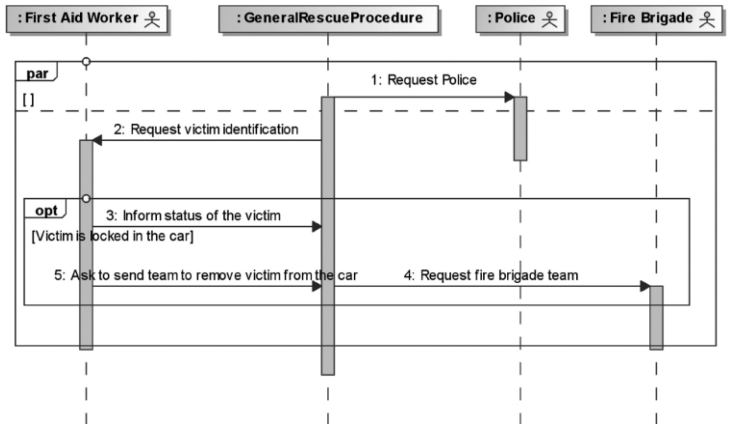
Name:_____ **Nº:** _____

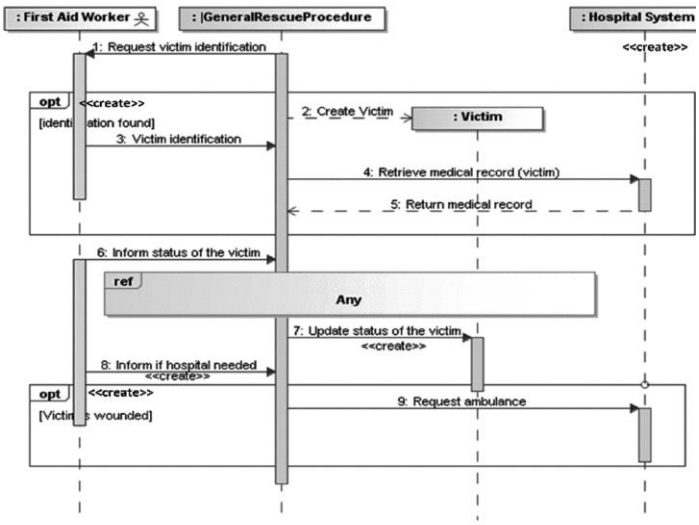
1st Part

1. Build a metamodel to specify the main elements of a KAOS goal model (goals, requirements, expectations, system agent, and environment agent, including relationships).
2. Discuss how traceability and reusability are addressed by model-driven development (MDD). How does MDD promote (or not) these quality attributes?

3. Compare agile development and waterfall development showing advantages and advantages. How risk management could be explicitly addressed in those development processes?

4. Compose the sequence models below where first one is the base model and the second one is the pattern.





2nd Part

You are in charge of specifying a hotel management system, whose characteristics are depicted as follows. Firstly, a customer should be able to book a hotel, based on availability, through the internet. Check-ins and check-outs of guests should be done by the reception staff. During check-in, the receptionist should create a guest account and allocate a room for him (just consider individual rooms).

All guest spending are recorded in the system (e.g., dinner, drinks, lunches). The guest can consult the balance and transactions on his account during the hotel stay. The system should also allow the recording of complaints to be sent to the hotel management. During check-out, when the payment is being processed, if a late departure (after noon) is detected, a penalty must be calculated and applied.

The system must also support room maintenance activities. Maintenance personnel should record the beginning and end of the intervention in a particular room (not occupied by any guest), which becomes unavailable. Therefore, when new guests arrive the staff cannot allocate a room that is in maintenance.

5. Build a KAOS goal model which must include goals (identifying requirements and expectations), agents (system and environment agents), operations and objects relevant to the system. Also, specify: 2 obstacles (with resolutions); and 2 non-functional goals relevant to this system with possible operationalizations and conflicts.

6. Specify a process model using BPMN for checking out the hotel.