



Departamento de Informática, FCT/UNL
Software Engineering 2018/2019

Test Example
April 2019
Duration: 2:00 h

Name: _____ **Nº:** _____

1. (3 points) Compare agile and plan-driven development discussing how they would:
 - a) address the non-functional requirements security and usability (you can give examples);
 - b) address risk management.

2. (5 points) Model the following process for clinic appointments using BPMN. The process starts when patient sends a message requesting to see a doctor in a certain date, which is handled by the receptionist at the doctor's office, who accesses the doctors' agendas and finds an available doctor. After scheduling the appointment two alternatives for informing the patient are possible, via phone and / or via email. The patient must confirm with a message saying OK, or if he changes his mind to cancel or choose another date. When the appointment date is reached at the previously scheduled date/time, the patient is evaluated by the doctor. Afterwards, the doctor handles the prescription. The prescription can either be issued manually or automatized. An automatized prescription consists of: filling up the prescription data in the computer, validating the prescription and issuing the prescription. After that the doctor gives the prescription to the patient, then and he pays receptionist with credit card or direct debit. (3 points).

You are responsible for the elicitation and analysis of the Mentcare System, a system to support the management of a mental illness clinic. Clinicians can create records for patients, edit the information in the system, view patient history. The system supports data summaries so that doctors can quickly learn about the key problems and treatments that have been prescribed. Also, the system monitors the records of patients that are involved in treatment and issues warnings if possible problems are detected (e.g., wrong prescription). For the managers, the system generates monthly management reports showing the number of patients treated at each clinic, the number of patients who have entered and left the care system, the drugs prescribed and their costs. It is essential that patient information is confidential and is never disclosed to anyone apart from authorized medical staff and the patient themselves. Some mental illnesses cause patients to become a danger to other people. Wherever possible, the system should warn medical staff about potentially dangerous patients. Finally, the system must be available when needed otherwise safety may be compromised and it may be impossible to prescribe the correct medication to patients.

Based on the description above:

3. a) (3 points) based on the description above write 3 user stories based on the format below:

As a [user role] **I want to** [goal]
so I can [reason]

- b) (1 point) refine the use story below into other possible ones including the **so I can** clause

As an administrator **I want to** manage patient records

4. (7 points) Build a KAOS goal model which must include goals (identifying requirements and expectations), agents (identifying system and environment agents), operations and objects. Also, specify: 1 obstacle (with resolution); and 2 non-functional goals relevant to this system and possible operationalizations and conflicts. Use stereotypes to distinguish: requirements and expectations; system and environment agents.

