CS2BC1 Assignment 1 2019-20

- *This assignment is mandatory. Failure to submit will mean automatic failure of the module.*
- *Late submissions will be penalised by 10% for each day you are late without providing legitimate reasons.*
- *If late by over 6 days then you will automatically fail the assignment. Remember you must pass your overall continuous assessment (worth 30% of final module grade) to pass the module.*
- ***This is an individual project**. Plagiarism, even if accidental, will not be tolerated and will result to a reduced grade or a no grade and possible disciplinary proceedings.*

All students must:

- Develop a structured UML Use Case diagram for the system described below, showing the system boundary, actors and use cases.
- Provide textual description of the use case where a patient record is submitted to the system and a new medical effect has to be added as part of the submission process. Include steps, sub-steps and any pre- or post-condition needed to accurately capture the use case requirements.
- Create both a UML Activity Diagram AND a Sequence Diagram for this use case. For the Sequence Diagram follow the 'Happy Case' while for the Activity Diagram include options and exceptions from the use case.
- Answer the questions below.
- Submit an electronic report in PDF (not exceeding 6 pages) via Blackboard **12:00 noon Friday the 28th of February**. The UML diagrams should be created in a tool such as Argo UML and pasted into the report. Each diagram should have some brief introductory text defining the actors, use cases and entities described by the diagram.

System Description

An online system manages clinical trial data-sets for doctors and scientists. Each data-set has an administrator who is always a scientist. There is also a system administrator who is a technician. All users must login to the system before they can use any functionality.

When a doctor meets a patient they submit a patient report to the system, recording the patient's current medical condition, the drugs prescribed to that patient and any clinical effects or side-effects observed. If a patient is not already registered with the system then the doctor must setup a new patient record. These must include past medical history for the patient. Records with no past medical history are automatically rejected for re-submission.

All drugs known to the system have their own drug description record. All medical effects and side-effects are uniquely identified in a catalogue within the system. Doctors browse this catalogue when creating medical histories for patients and when submitting patient reports. Scientists may browse the drug catalogue and can also create new drug description records in the system when a new drug is available for trial. Drug descriptions include links to related medical effects and side-effects. All

drug descriptions must be authorised by the data-set administrator before they are available to doctors.

Whenever a doctor is filling in a patient report and needs to record a clinical effect or side effect that is not present in the system catalogue they must submit a request to the system administrator to get it added. Some of these requests are for duplicates of clinical effects that are already listed, some are for new effects. In the case of duplicate effects a new name for the current effect is added to the current record.

Scientists may query and request trial data for datasets on which they are authorised. Sometimes scientists spot errors in the data set and submit correction requests. These correction requests must first be validated by the data-set administrator and then they are passed to the doctor who entered the original data for approval. If the doctor agrees that there is a mistake then the data-set is updated and the overall system administrator is notified.

Questions

1. List any modelling assumptions that you made. Explain how each one influenced your analysis.

2. Is the textual description of the system provided here adequate for requirements specification? Why?

3. What is the first question you would ask the customer after performing a basic requirements analysis on this system?

4. What aspects of the business processes in this system would you suggest be changed based on the requirements analysis you have carried out? (Explain your new process and any advantages or disadvantages of your approach).

5. Based on this example explain the reletive merits of using a UML activity diagram or a UML sequence diagram to elaborate a use case and provide input into the design stage.

Note: Most of these questions do not have a "right" answer, marks will be assigned based upon both originality and the understanding of the problem domain demonstrated.