CA3 – Project (50%)

Module: (DT8265 / DT265A) OOP2   Submission Date: Friday 8th Dec 2017 @ 18:00

Description:

A new medical facility in Dublin needs a software solution for their accident and emergency department (A&E). The A&E department will treat patients who present without a prior appointment. As there are no scheduled appointments and the randomness of when patients may attend the A&E department, an algorithm needs to be implemented to ensure that the patient with the most serious condition gets seen by the doctor in a timely fashion.

The Chief Medical Officer (CMO) of the medical facility has provided the following operational description of how the A&E department should operate when dealing with a new patient.

Step 1: Patient presents in the A&E department and gives their personal details to the receptionist. The receptionist will record all personal details in the system along with a brief summary of the condition the patient has. The patient will be asked to sit in the waiting department to be called.

Step 2: The patient will be called into an assessment room to be seen by the triage nurse. The triage nurse will assess the patients condition and take their vital signs. A priority value of 1 to 10 will be assigned to the patients condition, this will be used to determine how quickly they will get to see the doctor. These details will be stored in the system.

Step 3: The patient will be called to see the doctor. When the doctor has completed treating the patient, a summary of the treatment is entered into the system and the patient is removed from the treatment list.

Project Requirements:

- ➢ Create a system to manage the A&E departments patient treatment as detailed above.
- ➢ The project should be developed following good design principles.
- ➢ The system must offer data persistence for all patient details and all patient transactions. The data persistence functionality should be encapsulated in a separate class.
- ➢ A GUI using Java Swing must be provided to facilitate ease of use for the Doctors/Nurses/Receptionists. The GUI must display all information for all users of the system. (Including priority and all inputs from users).
- ➢ A Doubly Linked List (DLL) should be used to store patient information.
- ➢ Note: Other data structures may be used, this must be justified in your report.

Deliverables:

20%	Project Report (detailing the approach taken and the architecture/operation of the application)
80%	Java Application (all code and supporting docs uploaded to WebCourses)

Marking Scheme for the Application:

	> 70%	*60 to 69*	*50 to 59*	*40 to 49*	*0 to 40*
Graphical User Interface (15%)	Appropriate UI Design. Fully complete with offering good flow for user interactions.	UI implements good design principles. Nearly suitable for deployment.	Adequate User Interface design.	Minimal attempt to implement UI design principles.	Sub-standard UI design
Functionality (30%)	Application operates as per the requirements and has advanced functionality included in the application.	Application operates as per the requirements.	Adequate functionality, application does not achieve all the functionality in the requirements.	Minimal functionality, application does not achieve the functionality in the requirements.	Application does not perform the required functionality.
Data Persistence (25%)	Excellent architecture and implementation to offer data persistence to the application in a loosely coupled/maintainable fashion.	Good architecture and implementation to offer data persistence to the application.	Basic architecture and implementation to offer data persistence to the application.	Minimal architecture and implementation to offer data persistence to the application. Certain aspects not implemented.	Application does not perform the required data persistence functionality.
Data Structures and Algorithms (30%)	Excellent use of complex approaches suitable for the chosen data structure and algorithm.	Good choice of data structure and algorithm and implemented to perform as per the problem brief.	Good choice of data structure and algorithm, some issues with the operation of the program.	Program is operational with minimal implementation for the data structure and algorithm	No data structure or algorithm used in the application.

Note: All of the sections in the above marking scheme will take into consideration if the solution has been developed following good design principles.