**UTCN**

**Computer Science Department**

**Software Design 2017**

**ASSIGNMENT A3**

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1. **Objective**

The objective of this assignment is to allow students to become familiar with the client-server architectural style and the Observer design pattern.

1. **Application Description**

Use Java/C# API to design and implement a client-server application for managing the consultations of doctors in a clinic. The application has three types of users: the clinic secretary, the doctors and an administrator.

The clinic secretary can perform the following operations:

* Add/update patients (patient information: name, identity card number, personal numerical code, date of birth, address).
* CRUD on patients’ consultations (e.g. scheduling a consultation, assigning a doctor to a patient based on the doctor’s availability).

The doctors can perform the following operations:

* Add/view the details of a patient’s (past) consultation.

The administrator can perform the following operations:

* CRUD on user accounts.

In addition, when a patient having a consultation has arrived at the clinic and checked in at the secretary desk, the application should inform the associated doctor by displaying a message.

1. **Application Constraints**

* The application should be client-server and the data will be stored in a database. Use the Observer design pattern for notifying the doctors when their patients have arrived.
* All the inputs of the application will be validated against invalid data before submitting the data and saving it.

1. **Requirements**

* Create the analysis and design document (see the template).
* Implement and test the application.

1. **Deliverables**

* Analysis and design document.
* Implementation source files.
* SQL script for creating and populating the database with initial values.
* Readme file that describes the installation process of the application and how to use it:
  + how to install your application on a clean computer
  + how to access your application and with what users
  + images with all use cases and their scenarios implemented

1. **References**

<http://download.oracle.com/javase/tutorial/networking/sockets/index.html>

<http://docs.oracle.com/javase/tutorial/uiswing/>

<http://docs.oracle.com/javase/tutorial/jdbc/basics/index.html>

<https://msdn.microsoft.com/en-us/library/54xbah2z(v=vs.110).aspx>

<https://msdn.microsoft.com/en-us/library/e80y5yhx(v=vs.110).aspx>