The deadline for submission is **Wednesday, November 25 2015 23:59** (Fénix time). You should submit it sometime before to prevent any hiccups.

Project Assignment (Part II)

The following relational model is a slightly modified and simplified version of the schema of the database that you modelled in Part I of the project:

Patient (number, name, address)

PAN (domain, phone)

Device(serialnum, manufacturer, description)

Sensor (snum, manuf, units)
snum, manuf: FK (Device)

Actuator (snum, manuf, units)
snum, manuf: FK (Device)

Municipality (nut4code, name)

Period(start , end)

Reading (snum, manuf, datetime, value)
snum, manuf: FK (Sensor)

Setting (snum, manuf, datetime, value)
snum, manuf: FK (Actuator)

Wears (start, end, patient, pan)
start, end: FK (Period)
patient: FK (Patient)
pan: FK (PAN)

Lives (start, end, patient, muni)
start, end: FK (period)
patient: FK (Patient)
muni : FK (Municipality)

Connects (start, end, snum, manuf, pan)
start, end: FK (period)
snum, manuf: FK (Device)
pan: FK (PAN)

In Part II of the project, your mission is to create a database and implement a simple Web-based information system for a patient monitoring centre with some minimum functionalities. Some of these functionalities will be implemented as stored procedures (i.e. SQL functions) in the database, while others will be implemented as a set of Web pages written in PHP/HTML.

Expected Results

In this assignment, you are expected to provide the following results:

1. For the relational model above, write the SQL instructions to create the database in our database server (i.e. MySQL on db.ist.utl.pt). You should choose the most appropriate SQL data types for each column.
2. Write triggers to prevent someone from trying to associate overlapping periods when connecting a device/patient to a PAN. Additionally, fire an error message when this event occurs.
3. Write the following queries in SQL:
   (a) What are all the readings of a patient (identified by his/her number) in the last 6 months from devices with the words "blood pressure" in the description field?
   (b) Which municipality has currently (now) the highest number of installed devices from manufacturer "Philips"?
   (c) Which manufacturers had devices described as "scale" being worn last year in all municipalities covered by the medical centre?
4. Using PHP and HTML, develop a simple Web-based application to perform the following interactions, with a separate set of Web pages for each task:
   (a) Given a patient name, display all the readings and settings of a patient (indicate time and date, device, and units of reading/setting).
   (b) Interface to "transfer"[1] devices from one PAN to another: given a patient name, code the software to enable viewing the devices attached to his PAN over time, and "transfer" some of the devices from his last worn PAN to the one he his wearing currently.

Submission Notes

The project report should be submitted to Fénix as a single PDF file[2]. Please check that the file is readable with a standard program, such as Adobe Reader.

The document cover page should mention the names, student numbers, and group number of its authors.

The report should have three separate sections, one for each of the expected results described above. In the last section, please include the PHP/HTML code together with a screenshot of each Web page.

[1] By "transfer", we mean registering a new period of association of a device to a PAN.
[2] In most word processors, there is a menu option such as: File | Save as... PDF (*.pdf).