CS4416/CS5122

Project Specifications (2010/2011)

This is a **group** project. You are supposed to work on it in groups of **3 students**. (In the case it is impossible to find a third person you may work in a group of 2.)

Part A: Database Schema Design

1. Design a relational database schema consisting of at least 3 relations. Pick any domain you like.
2. For each relation, assert some FDs and identify the key attributes.
3. Show that each relation is in 3NF.
4. Write a report (2 pages maximum) which includes:
    a. A paragraph which explains what your database is about.
    b. A table for each relation with the key attributes clearly identified.
    c. The list of FDs for each relation.
    d. Proof that each relation is in 3NF.

Part B: PL/SQL

1. Write a **CREATE TABLE** statement for each relation defined in part A. Define at least one constraint per relation different from the primary-key constraint.
2. Write a set of 5 SQL queries for your database. Each of them must contain either a **subquery** or a **having** clause.
3. Create an .sql text file which contains all CREATE TABLE statements and queries.

Part C: More PL/SQL (GradDips and Health Informatics only)

1. Create another .sql file which contains at least 1 trigger and two stored procedures for your database.
2. Create a data file for each relation with at least 10 tuples per relation. Create also a control file for each data file.

Part C: System Development (all other students)

Write an application that provides an interface to your database. You can use a language of your choice, for example Java, C#, C++, PHP or ASP. The application should allow the user to:

1. Insert data into the database.
2. Execute each of the five queries from Part B and display their result.

Submission

Email the report from part A and all files created in parts B and C to nikola.nikolov@ul.ie by the 22nd of April, 5 pm. Students who submit a system might be ask to make a 5-10 min demo of their system. Late submissions are subject to -5 marks. No submissions will be accepted after the exam.