Exercise Sheet 3

Assigned: 22 October, 2011. Due date: 29 October, 2011, 4pm.

You must complete the parts of Question 6, postponed from the Exercise Sheet 2, in particular, the parts (d) and (e). You might find it better to attempt it after you complete Question 7.

Question 7: From the SQL Handout, paragraph 30

a. Write a query which shows for every course the following information: name of course, number of students sitting the examination, average mark, highest mark, lowest mark, and standard deviation. The output table should be ordered alphabetically by course name.

b. Write a query to list all courses where enrolment has increased between 2002 and 2003.

c. Write a query which shows for every course the average mark plus the average mark of those students who achieved a pass mark (40% or more). Refer to the table "allmarks04" for exam results.

d. For each course, what was the failure rate in the examination according to "allmarks04"?

e. Which staff members are sharing an office with someone else?

f. Who taught the course(s) with the largest number of students in each of the years covered by the "lecturing" table? (Do NOT name the years explicitly in your query.)

Question 8: From the May 2007 exam.

The queries in this question are based on the following two tables

```
  Table "companies"                          Table "shares"
 Attribute |          Type              Attribute |        Type
-----------+--------------------        -----------+------------------
 cid       | integer                     cid       | integer
 name      | character varying(40)       day       | date
                                         price     | integer
```

where the first gives the name of a company associated with the primary key cid, and the second contains the share price for each company on each day in the year 2006, measured in pennies.
Develop SQL queries for the following tasks:

a. List the names of all companies whose share price was above 500p at least once during 2006.

b. List the names of all companies together with their highest share price in 2006.

c. List the names of all companies together with the date when their highest share price was first achieved.

d. List the names of all companies whose share price had a percentage increase greater than 20% from 1 January 2006 to 31 December 2006.
(A specific date is expressed as in '1 December 2006'.)