CS130 Databases Lab 3

PREAMBLE
If you have not connected to the PostgreSQL database on webcourse.cs.nuim.ie before then you will need to complete all of steps in the STAGE 1 Document in Lab 2.
If you have connected to the PostgreSQL database on webcourse.cs.nuim.ie before – then you will already have your username and database password. You will need to follow the steps in the STAGE 1 Document in Lab 2 from Step 1. Please note that your connection may still be available in PGAdmin.

In the table **`CS130lab3`** within the public schema of the **cs130** database on `webcourse.cs.nuim.ie` details about the purchasing records of an online bookstore called CS130Books are provided. The data is fictional. It has been randomly generated. The contents of the table **`CS130lab3`** are easy to understand. It is a list of all book purchases in a fictional online bookstore called CS130Books. All books, people, etc. are fictional. The table attributes are as follows:

- **Custname** is the name of the customer who has purchased a book. This is the customer's firstname and surname.
- **custiban** is the IBAN (international bank account number) of the customer.
- **booktitle** is the title of the book.
- **bookisbn** is the ISBN number of the book (stored as a string).
- **booktext** is a sample line of text from the book that the customer has purchased.
- **Bookpages** is an integer representing the number of total pages in the book.
- **bookprice** is a number with two decimal places representing the sale price of the book.
- **custregion** is an indication of which region of the world that this customer is living in in order to arrange postage of the book.

By using the guide to PostgreSQL and PGAdmin – you should use the editor in PGAdmin to write, test and run SQL statements to answer the following questions.

Lab3_Q1 Select all customers with 7 characters in their surname and their surname starts with the letter M. In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q2 Select all booktitles and their bookpages where the number of pages in the book is an even number and the total number of pages in the book is between 100 and 200 inclusive. In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q3 Select all ISBN numbers where the first digit is a 0 or a 7 and the last digit is a 0 or a 7. In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q4 Select all booktitles where the booktitle contains at least one digit. The location of the digit in the book title is not relevant. In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q5 Select all booktitles where the book title contains the terms *`operative web-enabled`* in this order. In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q6 Write a query to select all customer IBAN where the first block which indicates the country (first two characters) indicates Ireland (IE), Switzerland (CH) or Spain (ES). The total

length of these IBAN numbers should be greater or equal to 26 characters. **You should note that the IBAN number is a string and is composed of 'blocks' separated by spaces. These blocks all have 4 characters except the final block which can have 1,2,3 or 4 characters.** In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q7 Write a query to list all customer IBAN where the final block of the IBAN is composed of only 3 digits. In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q8 Write a query to list all customer IBAN where there are three consecutive blocks of 4 digits ANYWHERE in the IBAN number. In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q9 Select all customer IBAN where there are SIX consecutive blocks of four digits in the IBAN Number. In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q10 Suppose that customers who are in the region IE or UK are given the following offer. If the total price of their chosen book including additional sales tax of 12% is greater than 60.00 euros and the book has at least 100 pages then they are entitled to free shipping of their book. Please note that bookprice as given in the database table DOES NOT INCLUDE any sales tax. All prices are given in EURO currency. In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q11 Select the booktitle and booktext of any book where the booktext sample has the term CS130 repeated in the booktext string. For the term or word CS130 to be repeated it must obviously appear two or more times. You should consider that a terms or words are often separated by a single white space character. In the Moodle Quiz you will be asked for the total number of rows returned by the query.

Lab3_Q12 In a completely fictional university a completely fictional student in mathematics has developed a simple method to predict what the perfect number of pages (in terms of overall readability, size, usage of printing sheets, etc) should be in a book. This student says that if the logarithm to the base 10 of the number of pages in a book is between 2.2227 and 2.285555 inclusive then that book has the perfect number of pages. Write a query which displays the booktitles and number of pages for all of the books which we could consider as 'perfect' by this student's methodology. You should consult the PosgreSQL help pages on mathematical operators (the link is given on moodle after the last lecture slides). In the Moodle Quiz you will be asked for the total number of rows returned by the query.

You will need to input your answers to the Moodle Quiz for this lab session. This will be the only way you will be assessed for the CA for this lab. You are advised to save your work regularly and to make note of the answers to these questions. You can only submit your answers to the Moodle Quiz twice.

While demonstrators will not be checking or assessing your answers – any demonstrator can ask you to show your SQL queries running. In addition, you are required to submit your sql queries and a screenshot showing a query running to Moodle for spot checking [details on what to submit are provided in Moodle].

COPYING OF SQL OR ANSWERS BETWEEN STUDENTS WILL RESULT IN ZERO MARKS