

CS621 Lab Exam 2 2019 [Pink]

Exam Duration: 2 hours

Date: 21st November 2019 11:15 – 13:15

Lab Exam 2 – PART A – Updates and Deletes (6.5%)

On Moodle you will find an SQL file called **LabExam2.sql** which must be executed **on your own schema**. Each row in this table represents an individual restaurant. This table contains submitted ratings these restaurants within the state of Iowa, USA. **LabExam2** has the following structure:

tlindex – primary key of the table (INTEGER)

rated – timestamp (of the most recent rating of the restaurant)

price – the price (in US Dollars) of the user's meal at that restaurant

cuisine – the principal type of food/cuisine served at the restaurant

rating – the user's satisfaction rating with the restaurant (between 1 and 5)

thegeom – a POINT geometry, in EPSG:4326, of the location of the restaurant

All answers must be entered into the Moodle Quiz for Lab Exam 2. Please familiarise yourself with the rules of the Lab Exam. **Absolutely no late submissions are allowed. UNLESS OTHERWISE STATED each question in the Moodle Quiz will require you to specify the number of rows affected. There are TWO ATTEMPTS allowed in the Moodle Quiz.** You should use **EPSG:3857** for any meter-based projection requirements in Lab Exam 2 (part A)

ALWAYS SAVE YOUR WORK – You must hand up this question sheet SIGNED at the end of the examination.

Lab Exam 2 – Part A – involves UPDATES and DELETES – you are advised to save your work as you answer the questions.

QUESTION 1: Write an SQL query which updates all rows in the table as follows. If the rating is greater than 3.5 then increase the rating by 0.25, for Breakfast cuisine restaurants only.

QUESTION 2: Write an SQL query which deletes rows in the table as follows. If the price is between 20 and 35 dollars (both inclusive) in any Buffet restaurant then delete this row.

QUESTION 3: Due to the way ratings were captured in the year 2019 only, the following deletion must take place. Delete all ratings in 2019 (for any restaurant) where the rating was submitted between 10am and 10pm (both inclusive).

QUESTION 4: Perform the following update. Update all restaurants within 88km (inclusive) of the location (longitude -92.397 and latitude 40.998) in Des Moines, Iowa, by increasing the price by 23%.

QUESTION 5: Delete all restaurants which are within 10KM of the point (longitude -89.595 latitude 40.412) or are Greek restaurants.

QUESTION 6: How many rows remain in the database table LabExam2? The Moodle quiz, for this question, will just ask you to input the number of rows remaining.

Lab Exam 2 – PART B – QGIS and Choropleth Mapping (6%)

On Moodle you will find two ZIP files: One Zip file called **Kildare_Eds_2017.zip** contains the Electoral Divisions (polygons in EPSG:4326) for Co. Kildare, Ireland in ESRI Shapefile format. The other Zip file called **LabExam2Voters.shp** contains the locations (points in EPSG:4326) of specific voters or supporters of a certain political party. This file is also in ESRI Shapefile format. You are advised to use EPSG:32629 for any meter-based calculations that you are required to perform.

An Electoral Division is an administrative area and are the smallest legally defined administrative areas in the State for which Small Area Population Statistics (SAPS) are published from the Census.

TASK: You are required to generate a Choropleth map with 5 classes, using Jenks Natural Breaks, of the DENSITY of voters per KM² in each Electoral Division in Co. Kildare. You must use the 'reds' colour ramp in QGIS.

The primary key in both tables is named **id**. The geometry column in both tables is called **geom**.

REMEMBER: When you import these Shapefiles using DB Manager – you need to specify a table name with only lower case characters. You are advised to choose short names for the tables (all lower case). Otherwise you will probably get a relation or table not found error in PostGIS.

How to submit your answer to Lab Exam 2 Part 2?

On the Moodle Quiz for this section you must upload two things: (1) your SQL code used to generate the choropleth map in PostGIS and (2) a FULL SCREEN screenshot of your Choropleth map visualised in QGIS. The follows the same process we followed in CS621 Week 7.

There is only ONE attempt to Lab Exam 2 Part 2.

The Moodle Quiz for Part 2 will look like this.

You can COPY-AND-PASTE your SQL code into the text box below.

Alternatively, you can drag-and-drop your SQL file (with your queries for Part 2) into the file upload box below.

You must drag-and-drop (upload) a single full screen screenshot of QGIS displaying the choropleth map.

For Lab Exam 2 - Part 2 - please use the text box below to copy-and-paste all of your SQL for Part 2 of the Lab Exam. You should upload your full screen screenshot of QGIS with your choropleth map with the file upload below. If you wish you can also upload your SQL as a file here.

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Maximum size for new files: 2GB

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Files

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You can drag and drop files here to add them.

ALWAYS SAVE YOUR WORK – You must hand up this question sheet SIGNED at the end of the examination.

PRINTED NAME:

STUDENT ID: