CS130 Databases 2020/2021

Laboratory 2 Assessment Sheet

In the table `CS130Lab2` within the public schema of the CS130 PostgreSQL database on `webcourse.cs.nuim.ie` details about cars parked in a secure controlled car park in Maynooth is given. The data is fictional.

PLEASE ENSURE YOU ARE WORKING IN THE PUBLIC SCHEMA IN THE PGAdmin Editor

	parking_id integer	car_reg character varying(50)	car_make character varying(50)	car_model character varying(50)	car_color character varying(50)	num_occupants integer	parking_day character varying(9)	parking_hours integer	parking_level integer
1	1	162-MH-63783	Kia	Spectra	Green	2	Tuesday	7	3
2	2	161-LH-809	Mercury	Grand Marquis	Fuscia	4	Wednesday	1	3
3	3	12-WD-8124	Mitsubishi	Truck	Orange	6	Friday	8	2
4	4	12-WD-8797	Scion	xB	Yellow	6	Friday	1	1
5	5	132-WD-710	GMC	Canyon	Green	4	Wednesday	4	3
6	6	161-WD-994	BMW	330	Maroon	1	Saturday	3	3
7	7	151-KY-30483	Mercury	Cougar	Maroon	2	Tuesday	7	1
8	8	152-KK-924	Volvo	XC70	Crimson	6	Monday	5	3
9	9	10-KY-846	Lexus	LX	Yellow	3	Sunday	7	1
10	10	09-WD-47528	Dodge	Magnum	Red	4	Friday	1	3
11	11	152-KY-7414	Mercury	Mystique	Turquoise	5	Tuesday	6	3
12	12	161-KE-25225	Toyota	4Runner	Orange	1	Wednesday	1	2
13	13	152-KK-4148	GMC	Envoy	Aquamarine	4	Saturday	6	1

The contents of the table `CS130Lab2` are easy to understand. It is a list of all parking events in our fictional car park. There may be occasions where the same car (by registration) has used the car mark on multiple occasions. These are all considered as unique parking events.

The `parkingID` lists the ID of the parking event. `Car_reg` is the Irish registration plate of the car. For simplicity we restrict the registration of cars parked to Irish registrations. `Car_make, Car_model, Car_Color` lists the make, model and color of the parked car. The column `num_occupants` lists the number of people in the car (including the driver). The `parkingDay` corresponds to the day of the week that the car was parked in the car park. Cars cannot park in our fictional car park for more than 8 hours in a single day. The carpark is only opened between 06:00 and 22:00 on a daily basis. `Parking_Hours` indicate the total hours that the car was parked for. The car park is a multistorey car park with three levels indicated by `parking_level`. Level 1 is the ground level, then level 2 then the top level denoted by level 3. **A note on car registrations.** All Irish car registrations follow the pattern [2 or 3 digit year] then a hyphen then [1 or 2 letters indicating the county of registration] then a hyphen then a [1 to 5 digit number]. So for example 09-KE-1234 is a car registered in Kildare (KE) in 2009 whereas 152-D-89898 is a car registered in Dublin (D) in the second half of 2015. 161-KY-123 is a car registered in Kerry (KY) in the first half of 2016.

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.

Lab2_Q1: Write an SQL query to find the number parking events where the colour of the car is Yellow. In Moodle you will be asked to specify the number of rows returned in your query.

Lab2_Q2. Write an SQL query to find the number of parking events which did not happen on a Saturday or Sunday. In Moodle you will be asked to specify the number of rows returned in your query.

Lab2_Q3: Write an SQL query to find the number of parking events in which a car with a `car_model` name ending in '2500' was involved. In Moodle you will be asked to specify the number of rows returned in your query.

Lab2_Q4: Write an SQL query to find the number of parking events in which a car with car make

Toyota and car model type Corolla was involved. In Moodle you will be asked to specify the number of rows returned in your query.

Lab2_Q5. Write an SQL query to return all of the parking events in which cars registered in Meath (MH) or Kildare (KE) were involved. Your query should only display the car reg, car make and car model. In Moodle you will be asked to specify the number of rows returned in your query.

Lab2_Q6. Write an SQL query to return all of parking events in which cars registered in 2016 are involved. Your query should only display the car reg, car make and car model. In Moodle you will be asked to specify the number of rows returned in your query.

Lab2_Q7. Write an SQL query to return all of the parking events where the cars parked for a duration of four or more hours and had at least three occupants. Your query should only display the car_reg, num_occupants and parking hours. In Moodle you will be asked to specify the number of rows returned in your query.

Lab2_Q8: Write an SQL query to return all of the parking events where the cars parked on level three on Tuesdays or the cars were of the color green. Your query should only display the car_reg, parking day, parking level and color. In Moodle you will be asked to specify the number of rows returned in your query.

Lab2_Q9: Write an SQL query to return all of the parking events involving cars which have car make beginning with the letter T, car model beginning with the letter T and parking day beginning with the letter T. In Moodle you will be asked to specify the number of rows returned in your query.

Lab2_Q10: Write an SQL query to find all parking events involving cars registered in Dublin (D) who did not park on the top level of the car park. In Moodle you will be asked to specify the number of rows returned in your query.

Lab2_Q11: Write an SQL query to find all parking events involving cars whose registration start and end with the character 1 and the car make is either BMW or Chevrolet. In Moodle you will be asked to specify the number of rows returned in your 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 – <u>any demonstrator can ask you to show your SQL queries running.</u>

COPYING OF SQL BETWEEN STUDENTS WILL NOT BE TOLERATED

How will this lab be assessed?

You MUST use the Moodle Quiz for this laboratory as the means of submitting your answer. There will be no checking or marking performed by the demonstrators.

<u>Read the questions on the Moodle correctly. The Quiz will close at the end of the lab.</u>